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Department of Planning, Housing,  
and Infrastructure

**Stage 1 Preliminary Site  
Investigation  
(Contamination)**

Crows Nest State-Led  
Rezoning

wsp

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## Stage 1 Preliminary Site Investigation (Contamination) Crows Nest State-Led Rezoning




Department of Planning, Housing, and Infrastructure

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WSP acknowledges that every project we work on takes place on First Peoples lands.  
We recognise Aboriginal and Torres Strait Islander Peoples as the first scientists and engineers and pay our respects to Elders past and present.

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# Executive summary

The NSW Department of Planning, Housing and Infrastructure (DPHI) has engaged WSP Australia Pty Ltd (WSP) to conduct a preliminary stage 1 contamination investigation (PSI) for properties within the St Leonards and Crows Nest Precinct that are proposed for rezoning from commercial to mixed use under the St Leonards and Crows Nest 2036 Plan (SLCN 2036 Plan). The properties subject to this PSI have been defined as “the Christie Street site” and “the PNO site” (refer to Section 1.2 of the report for further details).

The purpose of the PSI is to:

- determine whether the sites are likely to be suitable (from a contamination perspective), or can be made suitable, for the proposed mixed use zoning; and
- if the PSI indicates that the sites may not be suitable, provide recommendations for further works (including investigation, management or remediation) and planning controls pertaining to contamination.

The specific objective of this PSI is to determine the potential for current and historical activities at the sites and surrounds to have resulted in contamination that may warrant further investigation, management or remediation in the context of the proposed rezoning.

The following scope of works were undertaken:

- A desktop review of current and historical information relating to the sites and surrounds, including (but not limited to) aerial photographs, certificates of title, business directories, council held information, NSW Environment Protection Authority public registers, publicly available contamination reports for nearby properties and physical and environmental setting of the sites.
- An inspection of the sites and surrounds to assist in identifying potential on- and off-site sources of contamination and to document the site condition.
- Development of an initial conceptual site model outlining potential contamination sources, exposure pathways and receptors.
- Completion of a preliminary risk assessment to identify data gaps and determine if further investigation, management and/or remediation is required at the sites.

The Christie Street site comprised residential properties until the mid-1960s when these properties were progressively demolished. The site was used as a car park until the late 1970s when a multi-storey commercial building was constructed on the site.

The eastern portion of the PNO site appears to have comprised various commercial/industrial uses since at least 1930. The north-eastern portion of the PNO site underwent commercial development throughout the 1970s. The property located in the south-eastern portion of the PNO site appears to have been used as a motor garage, service station and/or car yard until approximately 2010 when it became a car wash. Residential properties occupied the western portion of the PNO site until the 1970s, following which these were progressively demolished and developed for commercial purposes throughout the 1980s. The property currently located in the south-western corner of the PNO site appeared to comprise a car yard until undergoing commercial development sometime in the late-1980s/early-1990s.

Based on the findings of this PSI, there is a low to moderate potential for soil and groundwater contamination to be present as a result of historical land uses and activities. Therefore, it is reasonable to anticipate that any future management or remediation requirements would not be substantial in terms of impediment to mixed use redevelopment.

As part of any future application for redevelopment, a supplementary intrusive investigation should be conducted at the sites to assess the contamination status of soil and groundwater and determine any requirements for contamination management or remediation to mitigate risks to site users. These investigations should include those items that could not

be completed as part of this PSI, relating to SafeWork NSW hazardous chemicals register records and interior inspections.

Subject to the results of the recommended supplementary intrusive investigation, it is considered likely that the sites will be suitable, or can be made suitable via contamination management or remediation, for the permissible land uses under mixed use zoning.

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# 1 Introduction

## 1.1 Background

As part of the National Housing Accord, the NSW Government has committed to building 377,000 new homes over the next five years. To meet this target, state-led rezoning of several precincts near Sydney metro stations and other key transport hubs has been proposed to facilitate the supply of housing, as well as to enhance investment in transport infrastructure in these areas.

In August 2020 the NSW Department of Planning, Housing and Infrastructure (DPHI<sup>1</sup>) finalised the planning package for the St Leonards and Crows Nest Precinct ('the Precinct'). The package includes the St Leonards and Crows Nest 2036 Plan (SLCN 2036 Plan), which has been prepared to guide future development in the Precinct, including rezoning. The SLCN 2036 Plan will be implemented under the state-led Transport Oriented Development (TOD) Program (Tier 1). The proposed land zoning under the SLCN 2036 Plan is shown on Figure 1.1. To assist in implementing the recommendations of the SLCN 2036 Plan, a contamination technical study is required to assess the potential for contamination risks to be present at properties proposed for rezoning from E2 Commercial Centre to MU1 Mixed Use.

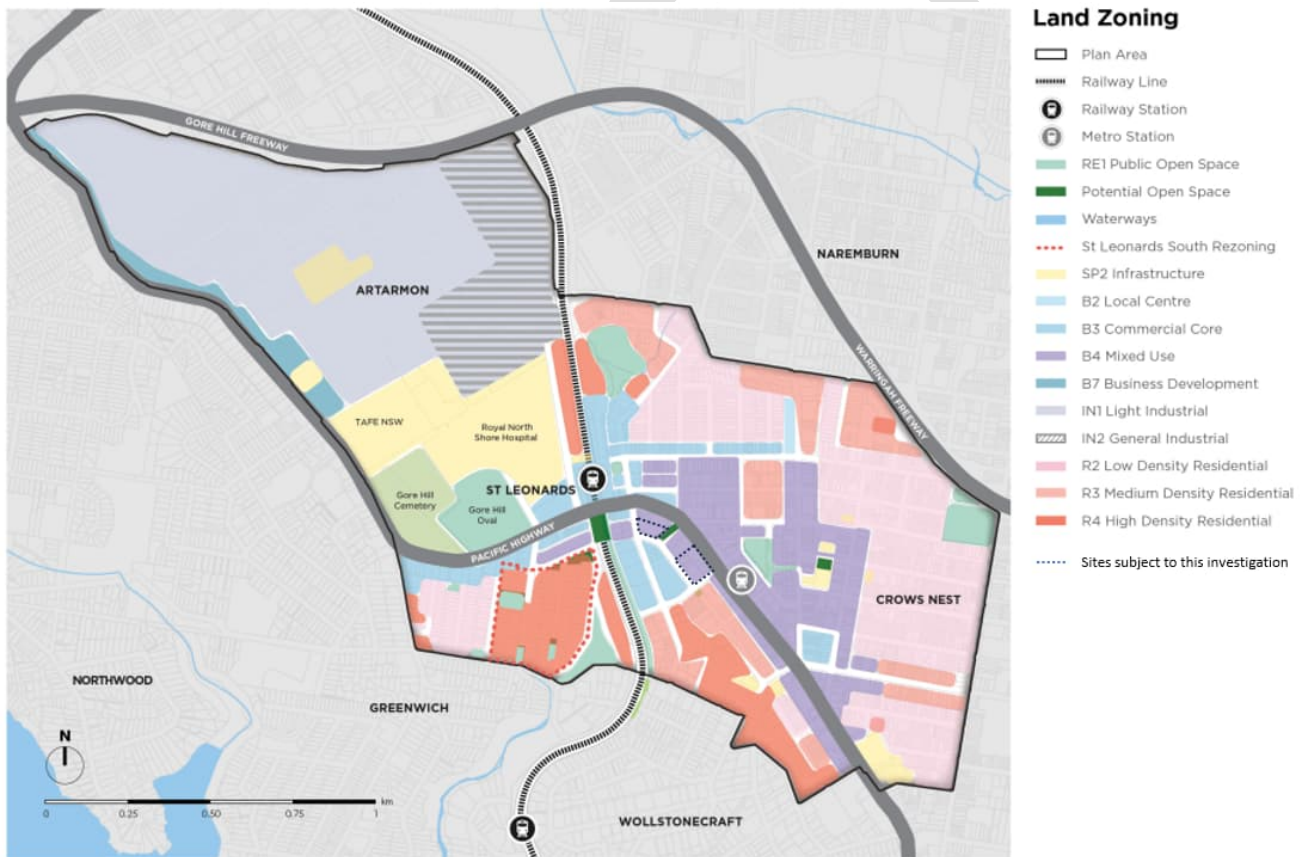


Figure 1.1 Proposed rezoning – SLCN 2036 Plan

Adapted from DPHI St Leonards and Crows Nest 2036 Final Plan (August 2020).

<sup>1</sup> Formerly Department of Planning and Environment.

As part of the contamination technical study, DPPI has engaged WSP Australia Pty Ltd (WSP) to conduct a preliminary stage 1 contamination investigation (PSI) for properties within the Precinct proposed for rezoning from commercial to mixed use under the SLCN 2036 Plan.

This PSI has been undertaken to address Ministerial Direction 4.4 – Remediation of Contaminated Land under Section 9.1 of the *Environmental Planning and Assessment Act 1979* (EP&A Act), which includes the requirement for the consideration of contamination when rezoning land. The findings of this PSI have also been used to inform the recommendations for design guide and planning controls prepared by WSP (2024) for the properties proposed for rezoning.

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## 1.2 Properties proposed for rezoning

WSP completed an initial review of the SLCN 2036 Plan to identify properties within the Precinct proposed for rezoning. This review included a comparison of current land zoning for the Lane Cove and North Sydney local government areas (LGAs) with the proposed zoning under the SLCN 2036 Plan. Based on discussions with DPPI, WSP understands that the assessment and rezoning process for the Willoughby LGA was completed in June 2023 and as such, contamination investigation for properties in that LGA is not required.

The review identified the following properties as being allocated for rezoning from commercial to mixed use:

- 69 Christie Street, St Leonards
- 65 Nicholson Street, St Leonards
- 67-69 Nicholson Street, St Leonards
- 40 Oxley Street, St Leonards
- 448 Pacific Highway, St Leonards
- 452 Pacific Highway, St Leonards
- 454-456 Pacific Highway, St Leonards
- 460 Pacific Highway, St Leonards.

All the above properties are located in the Lane Cove LGA. One additional property (524-542 Pacific Highway, St Leonards Telstra Exchange) was identified by WSP in the Lane Cove LGA as being proposed for rezoning from commercial to mixed use. That property has been assessed as part of its concurrent rezoning and State Significant Development (SSD) and has therefore been excluded from this investigation.

The property at 69 Christie Street is herein referred to as the “Christie Street site” and the remaining properties located on Pacific Highway, Nicholson Street and Oxley Street are herein referred to as the “PNO site”. The locations of the sites are shown on Figure 1 (Appendix A).

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## 1.3 Purpose and objective

The purpose of the PSI is to:

- determine whether the sites are likely to be suitable (from a contamination perspective), or can be made suitable, for the proposed mixed use zoning; and
- if the PSI indicates that the sites may not be suitable, provide recommendations for further works (including investigation, management or remediation) and planning controls pertaining to contamination.



The specific objective of this PSI is to determine the potential for current and historical activities at the sites and surrounds to have resulted in contamination that may warrant further investigation, management or remediation in the context of the proposed rezoning.

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## 1.4 Scope of works

The following scope of works were undertaken to meet the objectives described in Section 1.3:

- A desktop review of current and historical information relating to the sites and/or surrounds, including:
  - aerial photographs;
  - certificates of title;
  - business directories;
  - contamination related information held by Lane Cove Council (Council).
  - information held on the NSW Environment Protection Authority (EPA) contaminated land public register;
  - available utility plans;
  - publicly available reports relating to contamination for nearby properties; and
  - physical and environmental setting of the sites, including topography, soils, geology and hydrogeology.
- Inspection of the sites and surrounds to assist in identifying potential on- and off-site sources of contamination and to document the site condition. Interior inspections were conducted at:
  - 65 Nicholson Street, St Leonards;
  - 67-69 Nicholson Street, St Leonards;
  - 40 Oxley Street, St Leonards (basement car park only); and
  - 460 Pacific Highway, St Leonards.
- Landowner approval for access to the remaining properties has not been received and as such, the inspection at these sites comprised a walkover of the external boundaries of the sites and surrounding properties.
- Development of an initial conceptual site model (CSM) outlining potential contamination sources, exposure pathways and receptors.
- Completion of a preliminary risk assessment to identify data gaps and determine if further investigation, management and/or remediation is required at the sites.

Searches of the SafeWork NSW hazardous chemicals register have been requested and received for the four properties outlined above. Access to the register for the remaining properties has not been possible to date as landowner approval for this search has not been received.

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## 1.5 Regulatory framework

The PSI was undertaken in accordance with or with reference to the following guidelines:

- *Contaminated Land Management Act 1997*.
- *Environmental Planning and Assessment Act 1979*.
- *National Environment Protection (Assessment of Site Contamination) Measure 1999* (NEPM; as amended 2013).

- NSW Department of Urban Affairs and NSW EPA 1998, *Managing Land Contamination: Planning Guidelines, SEPP 55 – Remediation of Land* (repealed).
- NSW EPA 2020, *Consultants Reporting on Contaminated Land*.
- *Protection of the Environment Operations Act 1997*.
- *State Environmental Planning Policy (Resilience and Hazards) 2021*.

The environmental planning instrument that currently applies to the development of land at the sites is the *Lane Cove Local Environmental Plan 2009* (LEP). Permissible land uses within mixed use zoning under the LEP are presented in Table 1.1.

Table 1.1 Permissible land uses under mixed use zoning (Lane Cove LEP 2009)

<b>Permissible land uses – mixed use zoning</b>		
— Amusement centres	— Local distribution premises	— Residential flat buildings
— Boarding houses	— Medical centres	— Respite day care centres
— Car parks	— Multi dwelling housing	— Restricted premises
— Centre-based child care facilities	— Oyster aquaculture	— Roads
— Commercial premises	— Passenger transport facilities	— Shop top housing
— Community facilities	— Places of public worship	— Signage
— Entertainment facilities	— Recreation areas	— Tank-based aquaculture
— Function centres	— Recreation facilities (indoor)	— Tourist and visitor accommodation
— Information and education facilities	— Registered clubs	— Vehicle repair stations
— Light industries		

The sites are currently zoned E2 Commercial Centre which does not permit residential use of the land. Due to the proposed rezoning, and in accordance with Direction 4.4 – Remediation of Contaminated Land under Section 9.1 of the EP&A Act, assessment of the suitability of the sites (from a contamination perspective) for the proposed mixed use zoning is required.

## 2 Site information

### 2.1 Site identification

The general site identification details are summarised in Table 2.1.

Table 2.1 Site identification

Aspect	Detail – Christie Street site	Detail – PNO site
Site address and legal identification	69 Christie Street, St Leonards (SP69455)	65 Nicholson Street, St Leonards (26/DP658193, 27/DP3175) 67-69 Nicholson Street, St Leonards (1/DP787390) 40 Oxley Street, St Leonards (101/DP748012) 448 Pacific Highway, St Leonards (1-2/DP3175) 452 Pacific Highway, St Leonards (3/DP3175) 454-456 Pacific Highway, St Leonards (C/DP414984) 460 Pacific Highway, St Leonards (SP73221)
Site coordinates (approx.)	-33.823990, 151.196140	-33.824910, 151.197543
Site area (approx.)	2,330 m <sup>2</sup>	6,462 m <sup>2</sup>
Site elevation (approx.)	78-80 mAHD	84-88 mAHD
Local government area	Lane Cove Council	Lane Cove Council
Current zoning	E2 Commercial Centre	E2 Commercial Centre
Proposed zoning	Mixed Use	Mixed Use
Current site use	Commercial	Commercial, car wash corner Oxley Street and Pacific Highway
Proposed site use	Mixed use	Mixed use

AHD: Australian Height Datum

The locations of the sites are shown on Figure 1 (Appendix A), respectively.

### 2.2 Site condition and surrounding environment

#### 2.2.1 Site description

A limited inspection of the sites and surrounds was undertaken by WSP on 9 April 2024 and subsequent inspection of building interiors at the following properties was conducted on 9 May 2024:

- 65 Nicholson Street, St Leonards;
- 67-69 Nicholson Street, St Leonards;
- 40 Oxley Street, St Leonards (basement car park only); and
- 460 Pacific Highway, St Leonards.

Landowner approval for access to the remaining properties has not been received. Observations made during the inspections are presented below and photographs are provided in Appendix F.

### **Christie Street site**

The Christie Street site comprises a multi-level commercial building (apparent concrete construction) with basement car parking. The building occupies the majority of the site footprint. A paved pathway extends from Christie Street to the rear of the building in the north-east. The north-eastern portion of the site comprises an asphalt turning area which appears to be utilised for deliveries and general waste collection from skip bins stored at this location. A number of garden beds are present surrounding the building, pathway and driveways. Paved areas were generally in good condition.

Vehicle access to the site is obtained via Christie Street (basement car park) and Nicholson Street (rear access for deliveries and waste collection).

Occupiers of the building generally appear to consist of medical-based offices.

Topography at the Christie Street site generally slopes to the south and south-west. Observations suggest that much of the site is likely to have been cut as part of the building construction, with some leveling likely to have occurred in the northern portion of the site.

No evidence of chemical storage (including bulk fuels), contamination (i.e. odours, staining, distressed vegetation) or contaminating activities was observed at the Christie Street site during the limited inspection.

### **PNO site**

A summary of observations at each of the properties comprising the PNO site is presented below.

- 448-452 Pacific Highway – car wash service, including several wash bays and a café along the northern property boundary. The surface of the car wash appeared to consist of asphalt with evidence of underlying concrete at some locations. The surface was generally in reasonable condition, however, one area in the south-western portion of the wash bay was in very poor condition. A drain receiving wastewater from washing of vehicles is located in the approximate centre of the wash bays. Minor chemical storage (apparent cleaning products) was observed in the vicinity of the wash bays. Additional storage may also be present in the building. A pile of bricks was observed in the southern corner of the site.
- 454-456 Pacific Highway – multi-level commercial building (apparent concrete construction) and basement car park. The extent of the car park (including the number of basement levels) could not be confirmed. Based on the inspection, the ground floor does not appear to comprise occupiable space. An early learning centre is located on the first floor.
- 460 Pacific Highway – multi-level commercial building (apparent brick and concrete construction) and concrete driveway accessing the four-level basement car park from Nicholson Street. Ground floor occupants included a gym and post office. A substation is located within a sealed room located on the southern boundary of the Nicholson Street driveway. A hydrant pump room is present in the car park on basement level one. No fuel storage is present in the pump room. No storage of chemicals was observed and the property manager confirmed that no chemicals are stored on site. Two groundwater sump pumps are located on the lower basement level. The building manager was not certain on the discharge points for the pumps but suspected this to be stormwater. It is considered likely that filling of the Nicholson Street access driveway occurred based on the current topography (i.e. downward slope from east to west) and historical use of this portion of the property (i.e. low-density residential).
- 65 Nicholson Street – dual-level commercial building (apparent concrete and brick construction) and rear open-air car park in the eastern portion of the site. A landscaping supply storage shed is present in the northern corner of the car park. Minor quantities of chemicals and possible fuels appear to be stored in the shed. No visible evidence of spills was observed and the sealed car park surface appeared to be in good condition. At the time of the inspection occupants comprised office-based tenancies.

- 67-69 Nicholson Street – dual-level commercial buildings (apparent concrete and brick construction) with single-level basement car park. At the time of the inspection the building was vacant, with previous occupants having comprised office-based tenancies.
- 40 Oxley Street – three-level commercial building (apparent concrete construction) with ground and single level basement car park (relative to Nicholson Street entrance). A hydrant booster room is present in the car park on the ground car park level. A transformer is located on the central-southern boundary of the property.

Topography at the PNO site generally slopes to the south and south-west. The site inspections indicate that 40 Oxley Street, 65 Nicholson Street and 67-69 Nicholson Street have been cut into the existing profile. Basement (i.e. subsurface) car parks are present at 40 Oxley Street, 67-69 Nicholson Street and 460 Pacific Highway (excluding driveway). Excavation and leveling is also likely to have occurred along the remaining Pacific Highway properties, the extent of which has not been confirmed.

With the exception of potential contamination associated with chemical storage and waste pits at the car wash, no evidence of chemical storage (including bulk fuels), contamination (i.e. odours, staining, distressed vegetation) or contaminating activities was observed at the PNO site during the inspections.

### **Surrounding area**

The area surrounding the sites generally comprised mixed use commercial and high-density residential land uses. The St Leonards Telstra Exchange is situated adjacent to the northern Christie Street site boundary. No evidence of chemical storage, contamination (i.e. odours, staining, distressed vegetation) or contaminating activities was observed in the surrounding area during the inspections.

#### **2.2.2 Surrounding land use**

The land uses surrounding the Christie Street site are as follows:

- North: Mixed use commercial/high-density residential.
- East: Albany Street with mixed use commercial/high-density residential beyond.
- South: Nicholson and Christie Streets with commercial and high-density residential beyond
- West: Christie Street with mixed use commercial/high-density residential beyond.

The land uses surrounding the PNO site are as follows:

- North: Mixed use commercial/high-density residential.
- East: Pacific Highway with mixed use commercial/high-density residential beyond.
- South: Oxley Street with mixed use commercial/high-density residential and low-density residential beyond.
- West: Nicholson Street with commercial and high-density residential beyond

#### **2.2.3 Regional soil and geology**

The sites are underlain by Triassic age Ashfield Shale of the Wianamatta Group, comprising black to light grey shale and laminite. Soils are described as belonging to the Blacktown Soil Landscape, comprising shallow to moderately deep (<1 m) red and brown podzolic soils on crests, upper slopes and well-drained areas, and deep (1.5–3 m) yellow podzolic soils and soloths on lower slopes and in areas of poor drainage.

The CSIRO *Atlas of Australian Acid Sulfate Soils* notes that the sites are located in an area of extremely low probability of ASS occurrence, with 1 to 5% chance of occurrence with occurrences in small, localised areas.

#### 2.2.4 *Regional hydrogeology*

The sites are noted on the *Hydrogeology Map of Australia* to be situated on porous, extensive aquifers of low to moderate productivity. A review of the Bureau of Meteorology and WaterNSW databases was conducted by Lotsearch. No registered groundwater bores were identified within 500 m of the sites.

A list of groundwater bores identified within 2,000 m of the sites is provided in the Lotsearch report in Appendix B.

#### 2.2.5 *Topography, drainage and surface water*

The Christie Street and PNO sites slope downward to the south-west, with elevations ranging from approximately 78 to 80 mAHD and 84 to 88 mAHD, respectively. Surface water is expected to flow across the sites and into municipal stormwater drainage.

The nearest surface water body to the sites is Berrys Creek, located approximately 600 m to the south-west. Berrys Creek drains to the Parramatta River approximately 1.2 km south-west of the sites.

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### 3 Site history and background

A review of historical information for the site and surrounding area was conducted to investigate the site history and general background. The findings of this review are discussed in the following sections.

#### 3.1 Historical aerial photograph review

A review of historical aerial photography covering the site and surrounding area was undertaken and is summarised in Table 3.1. Historical aerial photographs are included in the Lotsearch reports in Appendix B.

Table 3.1 Summary of historical aerial photograph review

Aerial photograph	Description
1930	<p><b>Sites:</b> The sites appear to comprise predominantly low-density residential properties, with possible commercial/industrial land use at the current 448 Pacific Highway and 460 Pacific Highway. The current 452 Pacific Highway and western portion of the Christie Street site appear to be vacant.</p> <p><b>Surrounding area:</b> The surrounding area appears to comprise predominantly residential properties, with apparent commercial/industrial land use at various lots along Pacific Highway. The rail corridor is located approximately 100 m west of the Christie Street site.</p>
1943	<p><b>Sites:</b> Cut and/or filling of the northern portion of the current 460 Pacific Highway is apparent. Residential homes have been constructed in the western portion of the Christie Street site.</p> <p><b>Surrounding area:</b> No significant changes are noted since the previous photograph.</p>
1951	<p><b>Sites:</b> Commercial/industrial buildings have been constructed in the northern portion of the current 452 Pacific Highway and 460 Pacific Highway.</p> <p><b>Surrounding area:</b> Construction (unknown land use) has commenced adjacent to the Christie Street site to the north. A commercial/industrial building has been constructed north of the PNO site (corner Pacific Highway and Albany Street).</p>
1955/1956	<p><b>Sites:</b> No significant changes are noted since the previous photograph.</p> <p><b>Surrounding area:</b> The residential property formerly located north of 460 Pacific Highway has been demolished and the lot appears to be used for the storage of vehicles. Vehicular access to this lot is shared with 460 Pacific Highway to the south, indicating potential consistent land use between these properties.</p> <p>Commercial/industrial properties have been constructed adjacent to the Christie Street site to the north. A commercial/industrial building has been constructed north-east of the PNO site.</p>
1961	<p><b>Sites:</b> Vehicle storage is visible at the front of 460 Pacific Highway. The adjoining off-site lot to the north has been developed and no longer shares access and/or use with 460 Pacific Highway. Further development of 452 Pacific Highway is also visible.</p> <p>The small building formerly located in the south-eastern corner of the Christie Street site (corner Albany Street and Nicholson Street) has been demolished and is now vacant.</p> <p><b>Surrounding area:</b> Further commercial/industrial development is visible south and east of the PNO site and north of the Christie Street site (corner Pacific Highway and Mitchell Street).</p>
1965	<p><b>Sites:</b> No significant changes are noted on the PNO site since the previous photograph.</p>

Aerial photograph	Description
	<p>Residential homes are no longer present at the Christie Street site, with the exception of one property in the north-western corner of the site.</p> <p><b>Surrounding area:</b> Continued commercial/industrial development is visible along Pacific Highway. A high-rise commercial building has been constructed immediately north of the Christie Street site.</p>
1970	<p><b>Sites:</b> Construction works are being carried out at 460 Pacific Highway. The property comprising 448-452 Pacific Highway has been redeveloped with previous buildings having been demolished and a single newly constructed building erected. Numerous vehicles are visible on the property with the layout suggesting that the land use at this time may have been for car sales.</p> <p>All residential structures formerly located on the Christie Street site have been demolished and the area now comprises an open-air car park.</p> <p><b>Surrounding area:</b> A commercial building has been constructed south and north-west of the Christie Street and PNO sites, respectively (corner of Christie Street and Nicholson Street). No other significant changes are noted since the previous photograph.</p>
1978	<p><b>Sites:</b> The properties at 454-456 and 460 Pacific Highway comprise newly constructed commercial buildings. 448-452 Pacific Highway remains a car yard. A driveway linking Nicholson Street to the rear of 460 Pacific Highway has also been constructed. Residential properties have been demolished from the southern corner of the PNO site and now comprise a car park or potentially associated with the adjoining car yard.</p> <p>Construction appears to be occurring across the entire Christie Street site.</p> <p><b>Surrounding area:</b> An open-air sealed car park has been constructed south-west of the Christie Street site (corner Nicholson Street and Albany Street). An additional commercial building has been constructed south and north-west of the Christie Street and PNO sites, respectively (corner of Christie Street and Nicholson Street). Continued commercial/industrial development is visible along Pacific Highway.</p>
1982	<p><b>Sites:</b> No significant changes are noted on the PNO site since the previous photograph.</p> <p>A commercial building has been constructed on the Christie Street site.</p> <p><b>Surrounding area:</b> Demolition of structures on the block south-east of the PNO site has been undertaken, with much of the block now comprising vacant land.</p>
1986	<p><b>Sites:</b> Two residential properties in the central western portion of the PNO site now comprise apparent commercial/industrial use.</p> <p>No significant changes are noted on the Christie Street site since the previous photograph.</p> <p><b>Surrounding area:</b> Further commercial/industrial development has occurred north, east and south of the PNO site since the previous photograph</p>
1991	<p><b>Sites:</b> The PNO site now entirely comprises apparent commercial/industrial uses.</p> <p>No significant changes are noted on the Christie Street site since the previous photograph.</p> <p><b>Surrounding area:</b> The block west of the PNO site now entirely comprises apparent commercial/industrial uses. Redevelopment/renewal of several commercial/industrial properties in the vicinity of the sites is noted.</p>
1994	<p><b>Sites:</b> No significant changes are noted since the previous photograph.</p> <p><b>Surrounding area:</b> No significant changes are noted since the previous photograph.</p>



Aerial photograph	Description
2000	<p><b>Sites:</b> No significant changes are noted since the previous photograph.</p> <p><b>Surrounding area:</b> A medium- to high-density residential development has been constructed south-west of the PNO site (corner of Lithgow Street and Oxley Street). No other significant changes are noted since the previous photograph.</p>
2007	<p><b>Sites:</b> No significant changes are noted since the previous photograph.</p> <p><b>Surrounding area:</b> A number of properties surrounding the sites (predominantly along Pacific Highway) have undergone high-density residential redevelopment. No other significant changes are noted since the previous photograph.</p>
2011	<p><b>Sites:</b> Overhead shade protection sails have been constructed at 448 Pacific Highway. The configuration of vehicles on this property suggest that it is no longer a car yard. No other significant changes are noted since the previous photograph.</p> <p><b>Surrounding area:</b> No significant changes are noted since the previous photograph.</p>
2014	<p><b>Sites:</b> No significant changes are noted since the previous photograph.</p> <p><b>Surrounding area:</b> No significant changes are noted since the previous photograph.</p>
2017	<p><b>Sites:</b> No significant changes are noted since the previous photograph.</p> <p><b>Surrounding area:</b> The properties between the PNO and Christie Street sites have been demolished. A number of properties surrounding the sites (predominantly along Pacific Highway) have undergone apparent commercial and/or high-density residential redevelopment.</p>
2020	<p><b>Sites:</b> No significant changes are noted since the previous photograph.</p> <p><b>Surrounding area:</b> High-density residential and/or commercial construction is being conducted between the PNO and Christie Street sites, west and north-west of the Christie Street site, and south-east of the PNO site.</p>
2023	<p><b>Sites:</b> No significant changes are noted since the previous photograph.</p> <p><b>Surrounding area:</b> High-density residential and/or commercial construction at the properties between the PNO and Christie Street sites, west and north-west of the Christie Street site, and south-east of the PNO site has been completed.</p>

## 3.2 Certificates of Title

Current and historical certificates of title for the sites were obtained from Lotsearch (on behalf of InfoTrack). A summary of the title information review is presented below. Historical ownership summary tables are provided in Appendix C, along with copies of certificates of title and associated documents.

### Christie Street site

The Christie Street site historically comprised four lots until July 2003 when it was consolidated as SP69455 and registered to “The Owners – Strata Plan 69455”. No evidence of potentially contaminating activities is apparent based on review of registered current or prior owners and lessees of the site.

### PNO site

The PNO Street site historically comprised up to 17 lots. Based on review of registered current or prior owners and lessees of the PNO site, potentially contaminating activities may have occurred at the following three properties:

- Proprietor – Radford Motors Pty Ltd, now 454-456 Pacific Highway (1960-1968).
  - Lessee – Oasis Carwash Café Crows Nest Pty Ltd, 446-448 Pacific Highway (2012).
  - Lessee – substation, rear of 460 Pacific Highway.
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## 3.3 NSW EPA records

### 3.3.1 Contaminated land records

A search of the EPA contaminated land record of notices and the list of NSW contaminated sites notified to EPA was conducted by Lotsearch. The search did not identify any records for the sites, or for properties within 500 m of the sites, in the EPA contaminated land record of notices or the list of contaminated sites notified to the EPA. The closest identified property recorded on the EPA contaminated land databases is located approximately 640 m north-west of the site. This property is documented as a Telstra Data Centre and is listed on the contaminated sites notified to the EPA as “*Regulation under CLM Act not required*”.

A copy of the search results is presented in the Lotsearch reports in Appendix B.

### 3.3.2 Protection of the Environment Operations Act 1997 public register

A search of the EPA *Protection of the Environment Operations Act 1997* (POEO Act) register was conducted by Lotsearch. The search did not identify any licences, applications or notices under the POEO Act for the sites, or for properties within 500 m of the sites, in the EPA POEO Act register, except for the following:

- One record for the contravention of conditions of an environment protection licence (EPL) held by Sydney Trains. This licence pertains to the entirety of the Sydney Trains network and no further detail could be ascertained as to the nature of the contravention or whether the contravention was associated with the Sydney Trains assets in the vicinity of the site.
- Licensed railway system activities associated with Sydney Trains and Sydney Metro rail network.
- Licensed railway infrastructure construction activities associated with Sydney Metro rail network.

Delicensed and former licensed activities were also identified for three properties within 500 m of the sites. These records are associated with Sydney Metro railway system activities and power and waste generation or storage at the Royal North Shore Hospital.

Based on the information above, the risk presented to the sites from the current, delicensed and former licensed activities is considered to be low due to the nature of the activity and distance from the sites.

A copy of the POEO Act register search results is presented in the Lotsearch reports in Appendix B.

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## 3.4 Historical business directories

Historical business directory records between 1948 and 1993 were provided by Lotsearch for the sites and surrounding properties (refer to Appendix B). Potentially contaminating businesses registered as having been historically present on the Christie Street<sup>2</sup> and PNO sites are summarised in Table 3.2 and Table 3.3, respectively.

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<sup>2</sup> Provided title search information indicates that the Christie Street site was formerly referred to as 99 Nicholson Street. As such, historical registered business details provided by Lotsearch for 99 Nicholson Street are considered as having been situated on the Christie Street site.

Table 3.2 Potentially contaminating historical activities or businesses – Christie Street site

Address	Activity or business	Year
99 Nicholson St	Steel fabricators, boilermakers	1982
	Earthmoving and/or roadmaking contractors	1982

Given the nature of the Christie Street site at the time of the above registered businesses (i.e. seven-storey commercial building) and considering the building includes five basement parking levels (refer to title search documentation Appendix C), the potential contamination risk presented to the Christie Street site is considered to be low.

Table 3.3 Potentially contaminating historical activities or businesses – PNO site

Address	Activity or business	Year
446 Pacific Hwy	Motor garage, engineers, car/truck dealers and/or service station	1948-1959
448 Pacific Hwy	Motor hood manufacturers, motor trimmers and upholsterers	1950
450 Pacific Hwy	Motor repairs, panel beaters, painters, wreckers and towing services	1961
452 Pacific Hwy	Motor garage and/or engineers	1953-1962
454 Pacific Hwy	Motor electricians, spare parts dealer and battery manufacture/distribution	1950
454-456 Pacific Hwy	Engineers (heavy, mining, filtration) and various machinery manufacturing and/or distribution	1945-1978
456 Pacific Hwy	Paint, varnish and stain manufacture	1950
456-458 Pacific Hwy	Motor car/truck dealer	1965
458 Pacific Hwy	Motor garage, engineers, painters and/or panel beaters	1948-1950
460 Pacific Hwy	Manufacturers/distributors (motor garage equipment/tools)	1961

The above activities occurred on the eastern portion of the PNO site (i.e. along Pacific Highway). Historical information indicates that most of these properties have since been developed with basement car parking. Such development is considered likely to have reduced potential contamination risk associated with shallow/surface soils in this portion of the PNO site via removal of these materials to accommodate basement areas.

It is noted that a car wash service is currently located at 448-452 Pacific Highway, which has also been historically registered for motor vehicle services. The site inspection did not identify evidence of potential underground petroleum storage systems at this property. No bulk excavation is known to have been undertaken at this property.

A number of potentially contaminating historical activities were also identified within 100 m of the sites and are summarised in Table 3.4.

Table 3.4 Potentially contaminating historical activities or businesses – off site

Address	Activity or business	Location from Christie St site	Location from PNO site	Year
486 Pacific Hwy	Acid and chemical manufacturers/distributors	20 m SE	0 m NW	1961-1965
494 Pacific Hwy	Dry cleaners, pressers and dyers	20 m SE	0 m NW	1948-1950
472 Pacific Hwy	Motor garage, engineers and/or service station	20 m SE	0 m NW	1975-1984
482-484 Pacific Hwy	Motor garage, engineers and/or service station	20 m SE	0 m NW	1961-1972
418 Pacific Hwy	Manufacturers (stainless steel, bathroom equipment, sanitaryware, tiles)	200 m SE	20 m SE	1950-1961
416 Pacific Hwy	Printers	200 m SE	20 m SE	1975
410 Pacific Hwy	Earthmoving machinery hirers	200 m SE	20 m SE	1961
460 Pacific Hwy	Manufacturers/distributors (motor garage equipment/tools)	91 m SE	On site	1961
458 Pacific Hwy	Motor painters and panel beaters	91 m SE	On site	1948-1950
402-408 Pacific Hwy	Motor accessories/spare parts dealers, manufacturers and/or wholesalers, lawn mower sales/service, battery distributors	91 m SE	20 m SE	1961-1982
540 Pacific Hwy	Printers	4 m NW	180 m NW	1961-1965
545 Pacific Hwy	Motor car/truck and spare parts/accessories dealers, garages and/or service stations	150 m SE	25 m NE	1970-1991
548 Pacific Hwy	Motor gear and/or transmission specialists	20 m W	160 m NW	1982
	Manufacturers/distributors (chemicals, including agricultural and insecticide)			1970-1982
552 Pacific Hwy	Dry cleaners, pressers and dyers	22 m NW	185 m NW	1948-1956
567-571 Pacific Hwy	Manufacturers/distributors (various, including boiler plant, furnaces, power plant/transmission, steam turbines, electrical, transformers, motors, mining machinery)	125 m SE	26 m NE	1961-1975
575 Pacific Hwy	Gold embossing/stamping	84 m E	27 m N	1982-1986
521 Pacific Hwy	Motor car/truck dealers, garages and/or service stations	220 m SE	33 m E	1973-1993
609-611 Pacific Hwy	Motor garage, engineers and/or service station, motor accessories	62 m NE	120 m NNW	1961-1993

Address	Activity or business	Location from Christie St site	Location from PNO site	Year
657 Pacific Hwy	Printers	75 m NW	175 m NW	1991
	Manufacturers/distributors (food products, soft drink and cordials)			1975
661 Pacific Hwy	Dry cleaners, pressers and dyers	75 m NW	175 m NW	1948-1950
46 Nicholson St	Chemical manufacturers/distributors	48 m S	38 m W	1975
3 Albany St	Gold embossing/stamping	130 m E	59 m NE	1982-1986
5 Albany St	Printers	130 m E	59 m NE	1991
34-36 Oxley St	Drilling tool and railway equipment manufacturers/distributors	190 m SE	61 m NE	1961-1982
61 Christie St	Photographic developing, printing and/or colouring	45 m S	63 m W	1991
67 Christie St	Manufacturers/distributors (adhesives, chemicals, electric components)	20 m S	87 m NW	1970-1991
82 Christie St	Manufacturers/distributors (refractory materials, fire brick)	40 m SW	150 m NW	1975
7 Albany St	Printers	155 m E	66 m NE	1961-1965
28 Clarke St	Engineers (general, mechanical, manufacturing)	235 m SE	70 m E	1961-1965
599 Pacific Hwy	Manufacturers (electrical, motors, flameproof control gear)	65 m NE	71 m N	1965-1978
18 Albany St	Printers	67 m E	76 m N	1986
398-400 Pacific Hwy	Battery manufacturers, distributors, service stations	260 m SE	80 m SE	1961
400 Pacific Hwy	Manufacturers/distributors (hot water systems, electric, combustion, generators)	260 m SE	80 m SE	1965-1978
	Boilermakers, manufacturers and/or suppliers (boiler plant, gas works equipment, tools)			1965-1970
28 Albany St	Manufacturers/distributors (electric generating equipment, engines, pumps)	135 m ENE	85 m N	1975
26 Albany St	Manufacturers/distributors (hydraulic hoists, lubricating equipment)	135 m ENE	85 m N	1970-1975
99 Nicholson St	Steel fabricators, boilermakers	On site	90 m NW	1982
	Earthmoving and/or roadmaking contractors	On site	90 m NW	1982

Address	Activity or business	Location from Christie St site	Location from PNO site	Year
504 Pacific Hwy	Printers	0 m NE	91 m NW	1970-1991
	Engineers, manufacturers and/or distributors/suppliers (various, including corrosion prevention and control materials, adhesives, weather seal, furnaces, combustion, chemical, gas/oil burners, plastics, paint, batteries, emulsions)			1950-1986
	Manufacturers/distributors (3M – various, including adhesives, chemicals, copying machines, printer supplies, textiles, electrical insulation, abrasives)			1970-1975
	Manufacturers/distributors (rubber)			1961-1975
53 Lithgow St	Road making contractors	82 m S	96 m W	1950-1961
34 Albany St	Motor garage, engineers, accessories and/or service station	155 m ENE	97 m NE	1976-1989
30 Albany St	Manufacturers (plastics)	155 m ENE	97 m NE	1978
1 Atchison St	Manufacturers/distributors (swimming pool chemical and/or equipment)	90 m NE	125 m N	1991
4 Atchison St	Manufacturers/distributors (food wrapping/packaging, plastics, soap, chemicals, machinery/equipment/supplies including laundry and dry cleaning, pneumatic conveyors, chemical, paint making, printers, packing)	98 m N	230 m NW	1961-1978

N/S/E/W: north/south/east/west

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## 3.5 SafeWork NSW hazardous chemicals register

A search of the SafeWork NSW hazardous chemicals register was requested by WSP for the following properties at the PNO site:

- 65 Nicholson Street, St Leonards;
- 67-69 Nicholson Street, St Leonards;
- 40 Oxley Street, St Leonards; and
- 460 Pacific Highway, St Leonards.

The results of the searches indicated no records pertaining to these properties. Copies of the SafeWork NSW search results are provided in Appendix D.

Access to the register for the remaining properties has not been possible to date as landowner approval for this search has not been received.

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## 3.6 Council information

WSP enquired with Council regarding contamination related information, including Section 10.7 planning certificate information. Council has advised that the Council Authority database does not contain any information about contamination in relation to the sites.

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## 3.7 Utilities and services

A Before You Dig Australia (BYDA) search was conducted by WSP on 15 March 2024. The sites are serviced by a reticulated water supply, underground power, gas and communications utilities.

A copy of the BYDA plans for the site are provided in Appendix E.

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## 3.8 Historical environmental investigations

WSP was not provided with any historical environmental investigation reports for the site. Additionally, Council has advised WSP that the Council Authority database does not hold any attribute regarding in relation to the sites, including historical reports.

WSP found the following PSI reports pertaining to properties in the vicinity of the sites on the NSW Planning Portal:

- EI Australia (2023) *Preliminary Site Investigation, 524-542 Pacific Highway, St Leonards NSW.*
- Douglas Partners (2020) *Report on Preliminary Site Investigation (Contamination), Proposed Commercial Development, 29-57 Christie Street, St Leonards.*
- Golder Associates (2018) *Preliminary Site Investigation, 601 Pacific Highway, St. Leonards, NSW 2065.*
- Envirotech (2016) *Phase 1 (Preliminary) Environmental Site Assessment, 548-552 Pacific Highway, St. Leonards.*

Review of these reports by WSP did not identify any significant contamination in the area additional to that identified in this PSI. In addition, the findings of these reports with regard to the surrounding environment and its history are consistent with those presented in this PSI.

# 4 Preliminary conceptual site model

## 4.1 Preliminary CSM

Based on the information sourced in this PSI, a preliminary CSM has been developed and is outlined in Table 4.1.

Table 4.1 Preliminary conceptual site model

Aspect	Description
Site history	<p>The general site area has comprised commercial and residential land uses since at least the 1930s.</p> <p>The Christie Street site comprised residential properties since the 1930s until the mid-1960s when these properties were progressively demolished. The site was used as a car park until the late 1970s when a multi-storey commercial building was constructed across the site.</p> <p>The eastern portion of the PNO site (fronting Pacific Highway) appears to have comprised various commercial/industrial uses since at least 1930. The north-eastern portion of the PNO site underwent commercial development in 1970 (460 Pacific Highway) and sometime during the mid-1970s (454-456 Pacific Highway). The south-eastern portion of the site (446-452 Pacific Highway) appears to have been used as a motor garage, service station and/or car yard until approximately 2010 when it became a car wash.</p> <p>Residential properties occupied the western portion of the PNO site (fronting Nicholson Street) between 1930 and the 1970s, following which these were progressively demolished. The property currently located in the south-western corner of the site (40 Oxley Street) appeared to comprise a car yard until undergoing commercial development sometime in the late-1980s/early-1990s. The remaining lots in the western portion of the PNO site were developed for commercial purposes throughout the 1980s.</p>



Aspect	Description
Potential sources of contamination – historical land use	<p><b><u>Christie Street site</u></b></p> <ul style="list-style-type: none"> <li>— Imported fill material.</li> <li>— Weathering of potential hazardous building materials in on-site structures, such as lead paint and asbestos.</li> </ul> <p><b><u>PNO site</u></b></p> <ul style="list-style-type: none"> <li>— Imported fill material.</li> <li>— Various motor services, including garages, service stations, panel beaters, wreckers, painters, manufacturing, battery manufacture/distribution and/or car dealers.</li> <li>— Manufacturing, including various machinery and paint, varnish and stain products.</li> <li>— Weathering of potential hazardous building materials in on-site structures, such as lead paint and asbestos.</li> </ul> <p><b><u>Off-site</u></b></p> <p>A number of potentially contaminating historical activities have been identified in the surrounding area. These activities are considered unlikely to have resulted in significant soil contamination at the sites. However, the following off-site activities have been identified as presenting a potential contamination risk to groundwater and are located inferred hydraulically upgradient of the sites:</p> <ul style="list-style-type: none"> <li>— acid and chemical manufacturers/distributors (PNO site);</li> <li>— dry cleaners (PNO site);</li> <li>— motor garage, spare parts, engineers and/or service station (Christie Street and PNO site);</li> <li>— printers (Christie Street and PNO site);</li> <li>— manufacturers/distributors (various, including boiler plant, furnaces, power plant/transmission, steam turbines, electrical, transformers, motors, mining machinery, drilling tool, railway equipment, plastic) (PNO site);</li> <li>— engineers, manufacturers and/or distributors/suppliers (various, including corrosion prevention and control materials, adhesives, weather seal, furnaces, combustion, chemical, gas/oil burners, plastics, paint, batteries, emulsions, electrical, motors, flameproof control gear, electric generating equipment, engines, pumps, hydraulic hoists, lubricating equipment, rubber, plastic, swimming pool chemical and/or equipment) (Christie Street site);</li> <li>— manufacturers/distributors (3M – various, including adhesives, chemicals, copying machines, printer supplies, textiles, electrical insulation, abrasives) (Christie Street site); and</li> <li>— gold embossing/stamping (PNO site).</li> </ul>

Aspect	Description
Potential sources of contamination – current land use	<p>Inspection of the sites conducted on 9 April and 8 May 2024 indicates that current land uses comprise predominantly retail and office-based commercial, except for 448-452 Pacific Highway which comprises a car wash service. These land uses are considered unlikely to present a significant contamination risk.</p> <p>A substation and transformer are located at 460 Pacific Highway (Nicholson Street driveway area) and 40 Oxley Street, respectively. No evidence of contamination was observed in the vicinity of the transformer at 40 Oxley Street. Access to the substation at 460 Pacific Highway was not obtained and the potential for contamination is unknown.</p> <p>Subsurface excavation for basement car parking has previously been at 40 Oxley Street, 67-69 Nicholson Street and 460 Pacific Highway (excluding Nicholson Street access driveway).</p> <p>No records for storage of hazardous chemicals have been identified for 65 Nicholson Street, 67-69 Nicholson Street, 40 Oxley Street and 460 Pacific Highway.</p> <p>At the time of writing, a detailed inspection and search of the SafeWork NSW hazardous chemicals register for the remaining properties had not been undertaken.</p> <p>The potential for unidentified contaminating activities or storage of hazardous chemicals (such as bulk fuel storage for backup power generation and decommissioned underground petroleum storage systems (UPSS)) at the remaining properties is currently unknown.</p>
Soils and geology	<p>The sites are underlain by Ashfield Shale, comprising shale and laminite. Soils are described as belonging to the Blacktown Soil Landscape, comprising shallow to moderately deep (&lt;1 m) red and brown podzolic soils on crests, upper slopes and well-drained areas, and deep (1.5–3 m) yellow podzolic soils and soloths on lower slopes and in areas of poor drainage.</p>
Hydrogeology	<p>The sites are situated on porous, extensive aquifers of low to moderate productivity. Based on topography, groundwater is inferred to flow south-west toward Berrys Creek and the Parramatta River.</p>
COPCs – soil	<p><b><u>Christie Street site</u></b></p> <p>COPCs associated with fill material, including hydrocarbons, benzene, toluene, ethylbenzene and xylenes (BTEX), polycyclic aromatic hydrocarbons (PAHs), heavy metals and asbestos.</p> <p>COPCs associated with hazardous building materials, including lead and asbestos.</p> <p><b><u>PNO site</u></b></p> <p>COPCs associated with fill material, including hydrocarbons, BTEX, PAHs, heavy metals and asbestos.</p> <p>COPCs associated with motor services, including hydrocarbons, BTEX, PAHs, heavy metals, volatile organic compounds (VOCs) and phenols.</p> <p>COPCs associated with manufacturing of machinery and paint, varnish and stain products, including hydrocarbons, BTEX, heavy metals and VOCs.</p> <p>COPCs associated with electrical substations, including heavy metals and polychlorinated biphenyls (PCBs).</p> <p>COPCs associated with hazardous building materials, including lead and asbestos.</p>

Aspect	Description
COPCs – groundwater	<p>Migration of contamination in groundwater onto the sites may have occurred based on off-site land uses. In addition, historical activities at the PNO site present a potential contamination risk to groundwater at this site.</p> <p>COPCs include hydrocarbons, BTEX, PAHs, heavy metals, chlorinated VOCs, pesticides, PCBs, phenols and per- and poly-fluoroalkyl substances (PFAS).</p>
COPCs – soil vapour	COPCs include hydrocarbons, BTEX and chlorinated VOCs.
Potential receptors – human health	<p>Current receptors include commercial occupants and site visitors, in addition to construction and maintenance workers.</p> <p>Based on the permissible land uses under the proposed mixed use zoning, future receptors may include residents, commercial occupants, site visitors and construction and maintenance workers.</p>
Potential receptors – ecological	<p>Current ecological receptors include limited on-site vegetation, predominantly in constructed garden beds.</p> <p>Based on the proposed zoning and urban site setting, future development is anticipated to comprise high-density land use. As such, any future ecological receptors on site are likely to be limited to minimal vegetation within newly constructed soil profiles or planter boxes.</p> <p>The nearest surface water body is Berrys Creek, located approximately 600 m to the south-west. Based on the distance from the sites, Berrys Creek is considered unlikely to be a potential receptor of site-sourced groundwater contamination (if any).</p>

COPCs: contaminants of potential concern

## 4.2 Preliminary risk assessment

Based on the preliminary CSM presented in Table 4.1, a preliminary assessment of potential risks to receptors has been undertaken and is outlined in Table 4.2.

Table 4.2 Preliminary risk assessment

Potential source	COPCs	Media	Exposure pathway	Potential receptors (current and future)	Potential risk
<b>Christie Street site</b>					
Imported fill	Hydrocarbons, BTEX, PAHs, heavy metals and asbestos	Soil	Direct contact, inhalation, ingestion	Residents, commercial occupants, site visitors, construction and maintenance workers	<p><b>LOW</b> – much of the property was excavated for construction of the current basement car park, which is expected to have removed fill material within this footprint. Based on site topography and layout, some leveling may have occurred in the northern portion of the site, as well as perimeter areas surrounding the building. If imported, fill material is likely to have been used in these areas and is unlikely to be widespread across the site.</p> <p>Access to underlying soil is restricted under the current site layout – current potential exposure pathway for subsurface workers only.</p> <p>Excavation and removal of contaminated fill material (if present), or controlling or limiting physical exposure to it, is likely to be feasible during future site redevelopment.</p>
Weathering of hazardous building materials	Lead, asbestos	Soil	Direct contact, inhalation, ingestion	Residents, commercial occupants, site visitors, construction and maintenance workers	<p><b>LOW</b> – the extent of hazardous building materials in site soils is expected to be low.</p> <p>Hazardous building materials in on-site structures can be managed during future site redevelopment.</p>
Off-site historical land uses	Hydrocarbons, BTEX, PAHs, heavy metals, VOCs, pesticides, PCBs, phenols and PFAS	Groundwater Vapour	Direct contact, ingestion Inhalation (vapour)	Residents, commercial occupants, site visitors, construction and maintenance workers	<p><b>MODERATE</b> – no known abstraction of groundwater is currently occurring at the site and is unlikely to occur as part of future site redevelopment.</p> <p>If present, contaminated groundwater may present a potential risk if subsurface levels intersect the impacted aquifer and appropriate management measures (such as tanking or waterproofing) are not implemented. The contamination status of groundwater at the site is unknown.</p>

Potential source	COPCs	Media	Exposure pathway	Potential receptors (current and future)	Potential risk
					Groundwater impacted by volatile compounds may also present a vapour intrusion risk.
<b>PNO site</b>					
Imported fill	Hydrocarbons, BTEX, PAHs, heavy metals and asbestos	Soil	Direct contact, inhalation, ingestion	Residents, commercial occupants, site visitors, construction and maintenance workers	<p><b>LOW TO MODERATE</b> – based on site topography and layout, minimal import of fill is likely to have been conducted across the PNO site. Additionally, subsurface excavation for basement car parking has been undertaken at the majority of properties. Such development is considered likely to have reduced potential contamination risk associated with shallow/surface fill material at these properties via removal of these materials to accommodate basement areas.</p> <p>However, where substantial filling has been conducted (e.g. Nicholson Street access driveway at 460 Pacific Highway), the potential risk should be considered moderate.</p> <p>Access to underlying soil is restricted under the current site layout – current potential exposure pathway for subsurface workers only.</p> <p>Excavation and removal of contaminated fill material (if present), or controlling or limiting physical exposure to it, is likely to be feasible during future site redevelopment.</p>
On-site historical land use	Hydrocarbons, BTEX, PAHs, heavy metals, VOCs and phenols	Soil	Direct contact, inhalation, ingestion	Residents, commercial occupants, site visitors, construction and maintenance workers	<p><b>MODERATE</b> – potentially contaminating historical land uses have been identified in the eastern portion of the PNO site. Most of these properties have since been developed with basement car parking. Such development is considered likely to have reduced potential contamination risk associated with shallow/surface soils in this portion of the PNO site via removal of these materials to accommodate basement areas. However, the extent of basement</p>

Potential source	COPCs	Media	Exposure pathway	Potential receptors (current and future)	Potential risk
					excavation at 454-456 Pacific Highway is unknown and no bulk excavation is known to have been undertaken at 448-452 Pacific Highway.  Access to potentially impacted soil is restricted under the current site layout – current potential exposure pathway for subsurface workers only.
On- and off-site historical land uses	Hydrocarbons, BTEX, PAHs, heavy metals, VOCs, pesticides, PCBs, phenols and PFAS	Groundwater Vapour	Direct contact, ingestion Inhalation (vapour)	Residents, commercial occupants, site visitors, construction and maintenance workers	<b>MODERATE</b> – no known abstraction of groundwater is currently occurring at the site and is unlikely to occur as part of future site redevelopment.  If present, contaminated groundwater may present a potential risk if subsurface levels intersect the impacted aquifer and appropriate management measures (such as tanking or waterproofing) are not implemented. The contamination status of groundwater at the site is unknown.  Groundwater impacted by volatile compounds may also present a vapour intrusion risk.
Substation – 65-69 Nicholson Street	PCBs, heavy metals	Soil	Direct contact, ingestion	Construction and maintenance workers	<b>LOW</b> – inspection of the substation compound has not been undertaken, however, the substation area appears to be sealed with concrete. As such, the likelihood for potential contamination of underlying soils is likely to be low.  Access to underlying soil is restricted under the current site layout – current potential exposure pathway for subsurface workers only.
Weathering of hazardous building materials	Lead, asbestos	Soil	Direct contact, inhalation, ingestion	Residents, commercial occupants, site visitors, construction and maintenance workers	<b>LOW</b> – the extent of hazardous building materials in site soils is expected to be low.  Hazardous building materials in on-site structures can be managed during future site redevelopment

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## 4.3 Data gaps

Based on the historical data review and site inspections, data gaps with respect to this investigation remain for the following properties:

- 69 Christie Street, St Leonards;
- 448 Pacific Highway, St Leonards;
- 452 Pacific Highway, St Leonards; and
- 454-456 Pacific Highway, St Leonards.

These data gaps include:

- The potential for hazardous chemicals (such as bulk fuel storage for backup power generation and decommissioned UPSS) to be present, or to have historically been present, on these properties is unknown. Landowner approvals for searches of the SafeWork NSW hazardous chemicals register have not been received for these properties.
- Further assessment of contamination risk associated with current on-site land uses (including the extent of basements at the sites) is required via inspection of building interiors. Landowner approvals for interior inspections have not been received for these properties.

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# 5 Conclusions and recommendations

The review of historical information identified potential on-site contaminating activities in the eastern portion of the PNO site only. These activities included:

- various motor vehicle services, including garages, service stations, panel beaters, wreckers, painters, manufacturing, battery manufacture/distribution and/or car dealers; and
- manufacturing, including various machinery and paint, varnish and stain products.

Based on available site plans and the site inspections, most of these properties appear to have since been developed with basement car parking. Such development is considered likely to have reduced potential contamination risk associated with shallow/surface soils in this portion of the PNO site via removal of these materials to accommodate basement areas.

Additional potential sources of contamination at the sites include import of fill material and weathering of hazardous building materials that may be present in on-site structures.

Historical on- and off-site land uses may have also resulted in contamination of groundwater at the sites. Based on the identified historical activities, groundwater impacts may include volatile contaminants which can present a potential vapour intrusion risk.

Based on the findings of this PSI, there is considered to be a low to moderate potential for soil and groundwater contamination to be present as a result of historical land uses and activities. Therefore, it is reasonable to anticipate that any future management or remediation requirements would not be substantial in terms of impediment to mixed use redevelopment.

As part of any future application for redevelopment, a supplementary intrusive investigation should be conducted at the sites to assess the contamination status of soil and groundwater and determine any requirements for contamination management or remediation to mitigate risks to site users. These investigations should include those items that could not be completed as part of this PSI, relating to SafeWork NSW hazardous chemicals register records and interior inspections (refer to Section 4.3).

Subject to the results of the recommended supplementary intrusive investigation, it is considered likely that the sites will be suitable, or can be made suitable via contamination management or remediation, for the permissible land uses under mixed use zoning (refer to Section 1.5 for permissible land uses).



## 6 Limitations

This Report is provided by WSP Australia Pty Limited (*WSP*) for Department of Planning, Housing and Infrastructure (*Client*) in response to specific instructions from the Client and in accordance with WSP's proposal dated 17 January 2024 and agreement with the Client dated 12 February 2024 (*Agreement*).

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### Permitted purpose

This Report is provided by WSP for the purpose described in the Agreement and no responsibility is accepted by WSP for the use of the Report in whole or in part, for any other purpose (*Permitted Purpose*).

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### Qualifications and assumptions

The services undertaken by WSP in preparing this Report were limited to those specifically detailed in the Report and are subject to the scope, qualifications, assumptions and limitations set out in the Report or otherwise communicated to the Client.

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DRAFT

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# Appendix A

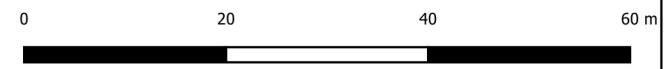
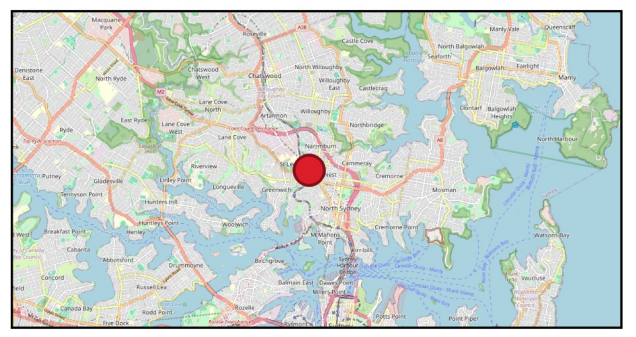
Figure



Client: NSW Dept of Planning, Housing and Infrastructure  
Project: Crows Nest rezoning  
Figure Number: Figure 1  
Drawing Title: Site Location Plan

## LEGEND

-  Site boundary
-  Property boundaries



Scale ratio correct when printed at A3  
1:900 Date: 27-03-2024  
Data Sources: NearMap, OpenStreetMap  
Author: M. Vanderheyden

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