

**TOLLAND NSW 2650**

**PRELIMINARY SITE  
INVESTIGATION**

**FOR THE  
TOLLAND ESTATE  
RENEWAL PROJECT**

**AUGUST 2023**

**REPORT NO: 9494**

**DM McMahon Pty Ltd**

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**Report type**

Preliminary Site Investigation  
For the Tolland Estate Renewal Project

**Site address**

Tolland NSW 2650

**Report number**

9494

**Prepared for**

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## 1.0 Executive summary

DM McMahon Pty Ltd (McMahon) conducted this Preliminary Site Investigation (PSI) at the request of the NSW Land and Housing Corporation for the Tolland Estate Renewal Project. The project involves replacing the aged social housing in Tolland NSW. Around 500 new homes will be delivered across the renewed Tolland suburb in a staged development. The 27ha development area (the site) has a historical broadacre agricultural land use before being developed from the 1960s to the 1990s. A map of the site investigated as part of this PSI and the Tolland Estate Renewal Project staging master plan can be seen in **Attachment A**.

The issue of potential contamination is required to be considered whenever a planning proposal is presented to a planning authority where the new use may increase risk from contamination if it is present. Therefore, the purpose of this investigation is to provide the NSW Land and Housing Corporation, the Aboriginal Housing Office, Argyle Consortium, and the planning authority with a statement of site suitability for the proposed land use and recommendations for further investigation, assessment, and site management if required.

The scope of work includes:

- A desktop study used to collect basic site information and identify the site characteristics.
- A detailed site inspection to complement the findings of the desktop study and site history and to identify any additional relevant site information.
- From the information collected, develop a conceptual site model detailing the potential contamination source-pathway-receptor linkages.
- Provide a preliminary assessment of site contamination and contaminants of potential concern.
- Conduct a risk assessment for site suitability regarding potential contamination and the proposed development.
- Identify the data gaps in the assessment of site contamination.
- Provide recommendations for further investigation.

Findings of the investigation include:

- The desktop study found the site has a history of broadacre agriculture land use until the 1960s when it was subdivided for residential use.
- The site inspection complemented the desktop study and found the following sources of potential contamination that may materially affect future development of the site:
  - Potential pesticide residue from predevelopment agricultural use and current weed management.
  - Potential pesticide residue from under slab termite management.
  - Hazardous building materials in existing houses and services.
  - Fill material from an unknown source.
  - Dumped rubbish.
  - Asphalt which may contain coal tar or asbestos.
  - Off-site fuel storage at adjacent service station.

- A conceptual site model was developed and found the above potential contamination sources can pose a risk to future site users (mainly through soil disturbance during development and occupation) and will require further investigation.
- These potential contamination sources do not preclude the redevelopment of the site given further investigation and site management is undertaken during development.
- Based on the findings of the PSI, further investigation and assessment is required as soil contamination is potentially present and the information available is insufficient to enable an appropriate level of risk assessment. Investigations should identify the nature of the potential contamination and delineate its lateral and vertical extent to a sufficient degree that appropriate site management strategies can be devised, if required.

This executive summary and the findings of this PSI are subject to the recommendations in **Section 8.0** and limitations as stated in **Section 9.0**. A protocol for unexpected finds as outlined in **Section 10.0** has also been developed as part of this risk assessment framework if additional potential contamination sources are identified during planning or development.

## 2.0 Objectives

The objective of this investigation is to:

- Provide information regarding potential contamination on site.
- Provide a factual record of the works completed and results.
- Undertaking a risk assessment for health risk to future site users and the environment.
- Provide a statement of site suitability or recommendations for further investigation and/or site management.
- To prepare the PSI in general accordance with the relevant guidelines and legislation, namely:
  - NSW EPA, Consultants Reporting on Contaminated Land: Contaminated Land Guidelines, (2020).
  - State Environmental Planning Policy (Resilience and Hazards) 2021.
  - National Environment Protection (Assessment of Site Contamination) Measure (NEPM), (2013).

### 3.0 Scope of work

The scope of work includes the following:

- Review the available information regarding historical, current, and proposed land use of the site and surrounds.
- Review the environmental setting of the site and surrounds.
- Assess the potential contamination sources and contaminants of potential concern.
- Assess the potential contamination source-pathway-receptor linkages from the contaminants of potential concern, environmental setting, and land use.
- Develop a conceptual site model to assess potential contamination risk from the source-pathway-receptor linkages.
- Provide recommendations for further investigation.

#### 4.0 Site identification

The site identification and details are as follows.

- Address: Tolland NSW 2650
- Real property description: Multiple.
- Development area centre co-ordinate: 531249E 6110984N MGA GDA z55.
- Property size: 27ha (total development area).
- Owner: Multiple.
- Local Government Area: Wagga Wagga City Council.
- Current zoning: R1 General Residential, R3 Medium Density Residential, RE1 Public Recreation, and E1 Local Centre.
- Present use: Residential.
- Development Application reference: Not known.



## 5.0 Site history

From research of the available resources, the following site history is offered.

### Historical owners and occupiers

- 1860 owned by William Seymour Eaton. Known as Portion 165.
- 1906 owned by Joseph Broadribb (farmer).
- 1920 owned by Lawrence Cox (farmer).
- 1924 owned by Matthew Irons (farmer).
- 1935 owned by Edmund Alexander Irons, William Davey Irons and Elizabeth Irons.
- 1958 owned by Samuel Spence Biggart (grazier) and Anna Martha Caulfield Biggart (his wife) and Robert Biggart (grazier).
- 1963 owned by Samuel Spence Biggart and Anna Martha Caulfield Biggart after the death of Robert Biggart.
- 1963 owned by Brian Gerald Kennedy (law clerk) and Carmel Mary Kennedy (his wife).
- 1965 Portion 165 began to be subdivided and became the suburb of Tolland.

### Council records

Information was collected on selected houses across the site to provide a representation of the records held by Council.

#### 22 Martin Street

1967 – BA366/67 – Dwelling (brick veneer, victor board walls, cement tile roof) and carport (galvanised iron roof).

1969 – BA483/69 – Patio (roof over).

1970 – BA12/7 – Carport.

2004 – DA04/0885 – Carport.

#### 45 Maher Street

1975 – BA771/75 – Dwelling (brick veneer, timber walls, tiled roof) and carport.

2007 – Complying Development Certificate 2A0107 – Shed.

#### 111 Raye Street

1989 – BA905/89 – Dwelling (brick veneer, tiled roof).

1991 – BA1071/91 – Addition of front verandah.

2004 – DA04/0757 – Proposed pergola.

#### 37-39 Bruce Street

2016 – DA16/0444 – Change of use from shop to dwelling. The building currently contains a dwelling and shop as well as a large hardstand carparking area. This application relates to the part of the building approved as a shop; the dwelling part of the building remains unchanged. The building was originally approved as a 'shop and caretaker's flat' under

DA287/88, which was lodged by the Department of Housing. It is noted that the shop component of the site has long been demonstrated as being economically unviable since the South City Shopping Centre has opened within walking distance.

### **7 Kenny Place**

2019 – DA19/0142 – Demolition of dwelling. Owned by NSW Land and Housing Corporation, site contains a damaged single storey detached dwelling.

### **3 Oliver Place**

2020 – DA20/0303 – Demolition of dwelling. Owned by NSW Land and Housing Corporation, site contains a damaged single storey detached dwelling and damaged garden shed. As the proposed development involves the demolition of a fire damaged dwelling, there is a risk of friable asbestos being present however the intention of the proposed development is to demolish the existing dwelling and clean up the site. To mitigate potential risks, appropriate conditions of consent will be imposed.

### **EPA records**

There are no records on the Contaminated Land Record Database for the site or adjacent properties pertaining to Preliminary Investigation Orders, Declaration of Significantly Contaminated Land, Approved Voluntary Management Plans, Management Orders, Ongoing Maintenance Orders, Repeal Revocation or Variation Notice, Site Audit Statement, or Notice of Completion or Withdrawal of Approved VMP. The site or adjacent properties have not been “notified” to the EPA on the list of NSW Contaminated sites as of July 2023.

### **Internet search**

- Evening News (Sydney) 4 June 1903. A Wagga Wagga Farm – A suit respecting the alleged purchase of a farm [...] was commenced before the Chief Judge in Equity. The defendant (William Seymour Eaton) was the owner of a farm of about 165 acres of land, known as ‘Tolland’ and situated around 4 miles from Wagga Wagga.
- The Albury Banner and Wodonga Express (Albury and Wodonga) 11 April 1924. Account Lawrence Cox Esq., his property ‘Tolland’, situated only three miles from Wagga Wagga, containing 165 acres of good land, beautifully improved.
- Wagga Wagga Express (Wagga) 15 October 1932. Trespass and Assault. Case Dismissed – At Wagga Police Court on Monday, the adjourned cases in which William Davey Irons, a farmer of Albury Road proceeded. [...] Irons said that he had been on the property continuously for eight years. The property ‘Tolland’ comprised 165 acres. The house was on the Main Albury Road. [...] Matthew Irons, father of the plaintiff said he owned the property but his two sons managed it for him.
- Daily Advertiser (Wagga) 16 April 1934. Obituary. Mr Matthew Irons – The death occurred at his home ‘Tolland’.
- Government Gazette of the State of NSW (Sydney) 22 January 1993 Issue 7. *Housing Act 1976*. The land shown as Brooks Circler, Raye Street, Flynn Place, Bruce Street, Dennis Crescent and French Place on the plan of land at Tolland, in the City of Wagga Wagga [...] registered in the Land Titles Office as DP 640761. 1053B/2.

- Government Gazette of the State of NSW (Sydney) 4 June 1993 Issue 54. *Housing Act 1976*. The land shown as Rogers Place, Lalor Place, Toy Place, Dennis Crescent, Oliver Place, Brooks Circlet, Raye Street, O'Connor Street and Anne Street and the pathway 4 wide on the plan of land at Tolland, in the City of Wagga Wagga [...] registered in the Land Titles Office as DP 705938. 1053B/2.
- Sherry Morris *Wagga Wagga A History* (1999). In the 1960s, the paddocks west of Mount Austin were subdivided. The new suburb was named 'Tolland' after the agricultural property which became part of the suburban area.
- The Daily Advertiser (Wagga) 31 January 2023. Residents hopeful Tolland Renewal Project will help clean up abandoned, overgrown homes. [...] Member for Wagga. Joe McGirr said the project will be a chance to replace many of the old insufficient social housing units in the suburb. 'There's a lot of properties that aren't currently being used and then there's a lot of properties that just aren't suitable' Dr McGirr said.

### Previous reports

*The NSW Land and Housing Corporation (2022) Tolland renewal community newsletter.*

- The NSW Land and Housing Corporation (LAHC) is working with the Aboriginal Housing Office (AHO), the Argyle Consortium (including Argyle Housing, BlueCHP and Birribee Housing) and Wagga Wagga City Council to transform the existing Tolland housing estate in Wagga Wagga to provide a new mix of modern housing.
- Replacing the estate's aged social housing with a modern mix of different homes is part of a program to renew and improve social housing as well as introduce private housing supply in the Wagga Wagga local government area. The renewal project will provide a mix of new social, affordable, seniors housing and private housing, along with new community facilities, roads and parks. The Tolland Community Centre, which is located inside the estate, will continue to operate and service the local community.
- Approximately 500 new mixed-tenure homes will be delivered across the renewed Tolland Estate area. Around 180 of these are set to be new social housing that fits seamlessly into the local streetscape.
- Most of the existing social housing in Tolland estate was built in the 1970s. These homes are nearing the end of their intended lifespan and are increasingly difficult to maintain and unsuitable for many social housing tenants. Renewing Tolland estate will bring a mix of new housing types that will better meet the needs of current social housing residents as well as providing new housing opportunities for private owners.
- Renewing Tolland Estate will provide better facilities for the whole community. Renewing the Tolland estate will create a vibrant and connected mixed tenure community with modern, accessible housing and improved access to transport and open spaces.
- The Tolland estate renewal is a long-term project that will be delivered in stages over the next 10 years.

## **Aerial photographs and satellite images**

McMahon observed the following from a review of the available aerial photography.

**1966** – The site appears to be vacant agricultural land. A natural drainage channel diverts into two north south trending channels at the northern boundary of the site. One channel runs through the approximate centre of the site and drains to a dam across Red Hill Road, south of the site. The second channel runs to the south east and drains into a dam just outside of the eastern boundary. A dam exists in the north east of the site. Scattered paddock trees can be seen across the site. Some of Tolland has been developed to the east of the development area. Residential suburbs Mount Austin and Koorungal have been developed to the north east and east. The land to the south and west is agricultural.

**1971** – Houses have been built along the eastern boundary of the site, along Martin Street. The dam in the north east of the site appears to have been filled and houses built over it. More of Tolland to the east of the site has also been developed.

**1980** – House have been developed in the northern part of the site, around Maher Street and Awaba Avenue. Some houses to the south of Bruce Street have also been built. Part of the second drainage channel has been filled to create the football oval at Chambers Park. The remainder of the channel appears shallower and is intersected by Bruce Street. The drainage channel through the centre of the site appears to have been filled. The roads have been established and some have been asphalted. Some scattered paddock trees remain. More of Tolland, Mount Austin and Koorungal have been developed and residential development in Glenfield Park has started to the west of the site. The service station to the east of the site has been built.

**1990** – Most of the site has been developed. The Tolland Community Centre has been built. The playground, cricket pitches, undercover area and car park at Chambers Park have been built. The skate park and playground at Emblen Park have been built and the open spaces at both Emblen Park and Kilpatrick Park have been defined. Construction for Glenfield Park continues to the west of the site. Residential development in Tatton has also begun to the south east. Jubilee Park has been established to the south of the site.

**1995** – Development continues in all suburbs. Residential development in Lloyd has begun to the south west of the site.

**1998** – Residential development continues in Tatton, Lloyd and Glenfield Park.

**2007** – The basketball court at Chambers Park has been built. The road for Tarra Place south of Bruce Street has been built but no houses have been developed along it.

**2010** – OneSchool Global has been built.

**2012** – Residential development continues in Tolland. Small raised garden beds in Kilpatrick Park can be seen.

**2014** – The skate park has been built at Chambers Park and the car park extended.

**2017** – The playground at Chambers Park has been expanded and updated. Construction has begun for the pump track at Emblen Park.

**2020** – The pump track has been completed.

**2023** – No major changes to the site from 2020.

The aerial photographs and satellite images can be seen in **Attachment B**.

## 6.0 Site condition and surrounding environment

McMahon notes the following observations of the site condition as part of this PSI.

- The site is located approximately 3.5km south west of the centre of Wagga Wagga. The development area is to the west of Bourke Street and is bound by Red Hill Road to the south and Glenfield Road to the west. The residual suburb of Tolland lies to the east, outside the development area.
- The houses are a mix of brick veneer and fibrous sheeting, mostly built between the 1960s and 1990s. Many houses are vacant or damaged. Some houses have been damaged or destroyed by fire and the lots vacant. Thick grass hampered a thorough visual inspection of the vacant lots. One vacant corner block appears to have been used as rudimentary bike jumps, made from soil covered Council recycling bins.
- The suburb is largely made up of small culs-de-sac within circuits and crescents. As observed in the aerial photographs and satellite images, the majority of the roads were asphalted between the 1970s and 1990s, but road upgrades may have occurred since then.
- The Tolland Community Centre exists in the approximate centre of the site, along Bruce Street. The centre offers community programs such as playgroups, craft groups, social groups, education and training opportunities. OneSchool Global, a kindergarten to Year 12 school established by the Plymouth Brethren Christian Church in 2009 is located west of the Tolland Community Centre.
- The site also includes three public open spaces. Chambers Park is located adjacent to the community centre and includes a playground, undercover area, the Tolland skate park, basketball court, cricket pitches, and football oval. Emblen Park is located in the east of the site and includes a playground, the Tolland pump track, a small concrete skate park and grassed open space. Kilpatrick Park is a small park in west of the site. A sign at the corner of the park reads Tolland Gardens and small raised garden beds have been built. The garden beds are currently overgrown with weeds. The rest of the park is grassed open space. Pesticide use for weed management is likely across the three parks.
- A north south trending open drainage channel runs from the bottom of Chambers Park, alongside OneSchool Global, under Bruce Street and through Emblen Park. The channel follows the historical natural drainage channel identified in aerial photographs.
- Dumped rubbish was observed in front of multiple houses, in gutters and on vacant lots throughout the site.
- Surrounding land uses include residential in all directions with Jubilee Park, a multisport athletic park to the south.

A map of the site features can be seen in **Attachment C**.

Site photographs can be seen in **Attachment D**.

A summary of the site environmental setting is as follows.

### **Topography**

The site lies on a north trending broad long waning piedmont slope below the Lloyd Hills to the south at an elevation range of approximately 210m to 225m AHD.

### **Vegetation**

The houses and yards across the site are typical of a residential suburb with concrete driveways, lawns and small maintained gardens. Grassed vacant lots are dotted around the site. The three parks consist of grassed open areas with a football oval/cricket pitch at the rear of Chambers Park.

### **Natural Resources Sensitivity**

A search of the Wagga Local Environment Plan (2013) found the whole site is mapped as being in a natural resource sensitivity area for groundwater vulnerability. The south west corner of the site is mapped as being in a natural resource sensitivity area for vulnerable lands and small pockets of land across the site are mapped as being in a natural resource sensitivity area for terrestrial biodiversity. The site is not mapped as being in a natural resource sensitivity area for riparian lands and waterways.

### **Weather**

The average rainfall for Tolland is around 525mm per annum, with the wettest months being June, July and October. Tolland is characterised by cold wet winters and hot dry summers.

### **Hydrology**

A north south trending open drainage channel runs from the bottom of Chambers Park, under Bruce Street and through Emblen Park. It follows the historical natural drainage channel identified in aerial photographs. The drainage channel is part of the urban stormwater drainage network under Council management and control. The Murrumbidgee River is located approximately 3.9km north west of the site. Lake Albert is located approximately 3.0km to the south east. The site is not mapped as being in a flood planning area.

### **Soil**

Soils are typically deep Quaternary colluvial and alluvial sands, silts, and clays characterised as red Chromosols and brown Sodosols. These soils are possibly up to 10m thick.

### **Geology**

The local geology is Ordovician metasedimentary bedrock of the Abercrombie Formation which is highly variable over a short distance. Colluvial and residual soils on slopes are derived from upslope and underlying Ordovician metasedimentary bedrock.

### **Hydrogeology**

There is one groundwater monitoring bore at the rear of 5-6 Kenny Place which is part of the Council's urban salinity piezometer network. There are three nearby bores that are also within the network, located at the corner of Red Hill Road and Glenfield Road (south west of the site) and at Red Hill Public School and Mt Austin Public School (to the east of the site). Depth to groundwater is typically 4-10m below ground level discharging into the unconsolidated alluvial sediments of the Murrumbidgee River floodplain to the north of

Tolland. An intermediate to localised groundwater system associated with the Ordovician metasediments exists in the underlying geology that is loosely defined by the topographic catchment. Interflow and throughflow in the colluvial and alluvial soils overlying the geology can also occur after periods of extended wet weather. Hydraulic conductivity is low and hydraulic gradient is a muted reflection of the surface topography. Water quality is marginal to poor.

## 7.0 Conceptual site model

A conceptual site model is a representation of site-related information regarding contamination sources, receptors and exposure pathways between those sources and receptors and is presented and follows.

### Summary

The site has a history of broadacre agricultural use until the 1960s when the suburb of Tolland was developed. Chemicals associated with historical agricultural pesticide use and current weed management may have accumulated in the soil. Pesticides from termite management may have been applied to the ground, under house slabs and around the perimeter of buildings. Hazardous building materials are likely to exist in the houses and services across the site. Fill material from an unknown source may also be present. Other potential contamination sources include dumped rubbish and asphalt from roads across the site. Coal tar and asbestos were commonly used in asphalt up until the 1980s. Off-site contamination sources include fuel storage at the service station located 816m east of the approximate centre of the site. Receptors include future construction workers, future residential site users, and the environment. Pathways are mainly from soil disturbance during development and occupation. Short to medium-term soil contact is likely for future construction workers, and long-term soil contact is possible for future occupants.

### Potential and known sources of contamination

- Persistent agricultural chemicals.
- Persistent pesticides used for termite management.
- Hazardous building materials.
- Fill material from an unknown source.
- Dumped rubbish.
- Asphalt containing coal tar and asbestos.
- Off-site fuel storage at nearby service station.

### List of contaminants of potential concern

From the potential contamination sources, the Contaminants of Potential Concern (COPCs) are as follows:

- Pesticides.
- Heavy metals.
- Lead paint
- Asbestos from buildings, underground services, fill material and asphalt.
- Coal tar.
- Hydrocarbons.
- Polycyclic aromatic hydrocarbons.
- Solvents.
- Phenols.



### **Mechanism of contamination**

The mechanism of contamination is predominantly top-down vertical and lateral migration into soil. The mechanism of asbestos contamination is from the release of fibres from asbestos containing material during disturbance.

### **Potentially affected environmental media**

- Soil.
- Vapour.
- Air.
- Surface water.
- Groundwater.

### **Consideration of spatial and temporal variations**

Spatial variation in potential contamination is possible. Temporal variation of persistent pesticides and heavy metals in the soil is likely. Temporal variation of asbestos is unlikely unless the asbestos is disturbed, and fibres are released.

### **Actual or potential exposure pathways**

- Direct skin contact with soil for future construction workers, and future on-site users.
- Inhalation and/or ingestion of fibres, soil, vapour, and dust.
- Direct surface water contact.
- Groundwater ingestion.

### **Human and ecological receptors**

- Construction workers.
- Future on-site users.
- Future landscaping and associated ecological receptors at the occupation stage.
- Domestic groundwater users but unlikely as the site is connected to town water.
- Down gradient ecological receptors but unlikely owing to the distance to the river.

### **Frequency of exposure**

- Construction workers are assessed to be a short-term exposure risk.
- Future on-site users are assessed to have a long-term exposure risk.
- Future groundwater users are a medium to long-term exposure risk.
- Ecological receptors are assessed to be a medium to long-term exposure risk.

### **Source pathway receptor linkage assessment**

Based on the past uses, it is assessed that contamination from the identified potential contamination sources may be present at the site. If elevated concentrations of contaminants were identified then they could present potential health risks to construction workers or future site occupants (through dermal contact, ingestion, or inhalation of contaminated fibres, soils and/or vapours), if not adequately investigated, assessed, and

managed during development. Off-site contamination from the nearby service station site is unlikely owing to its location however groundwater contamination is possible.

**Discussion of multiple lines of evidence**

A multiple lines of evidence approach is the process for evaluating and integrating information from different sources of data and uses best professional judgement to assess the consistency and plausibility of the conclusions which can be drawn, NEPM (2013). Definitive information concerning the sources of potential contamination on site is satisfactory therefore the risk assessment relies heavily on the information provided by this PSI and will be supplemented by further investigation.

## 8.0 Conclusions and recommendations

This investigation met the objective of investigating and assessing potential contamination and providing a statement of site suitability for the proposed land use and recommendations for further investigation, assessment, and site management.

Based on the findings of the PSI, it is concluded that contamination is potentially present and the information available is insufficient to enable an appropriate level of site-specific risk assessment for future development. As such further investigation and assessment is required.

The lack of quantitative contamination data in this PSI is considered to not preclude the development of the site but the PSI provides the basis for more detailed investigations.

This PSI also provides the framework for developing an Environmental Management Plan by identifying the potential contamination sources, potentially impacted media, contamination transport mechanisms, and contaminants of potential concern.

A protocol for unexpected finds as outlined in **Section 10.0** has also been developed as part of this risk assessment framework if additional potential contamination sources are identified prior to or during the development.

This executive summary and the findings of this PSI are subject to the limitations as stated in **Section 9.0**.

## 9.0 Limitations and disclaimer

DM McMahon Pty Ltd has prepared this report in accordance with the usual care and thoroughness of the consulting profession for the use of the NSW Land and Housing Corporation, the Aboriginal Housing Office, Argyle Consortium and only those third parties who have been authorised by DM McMahon Pty Ltd to rely on this report.

The information contained in this report has been extracted from field and laboratory sources believed to be reliable and accurate. DM McMahon Pty Ltd does not assume any responsibility for the misinterpretation of information supplied in this report. The accuracy and reliability of recommendations identified in this report need to be evaluated with due care according to individual circumstances. It should be noted that the recommendations and findings in this report are based solely upon the said site location and conditions at the time of assessment. The results of the said investigations undertaken are an overall representation of the conditions encountered. The properties of the soil, vapour and groundwater within the location may change due to variations in ground conditions outside of the assessed area. The author has no control or liability over site variability that may warrant further investigation that may lead to significant design and land use changes.

## 10.0 Unexpected findings

If any unconsolidated, odorous, stained, or deleterious soils, or suspect bonded/friable/fibrous asbestos containing material, fuel tanks, or septic systems are encountered during any further excavation, suspected historical contaminating activities are encountered, or conditions that are not alike the above descriptions, the site supervisor should be informed, the work stopped, and this office be contacted immediately for further evaluation by an appropriately qualified environmental consultant. The unexpected findings may trigger the need for more investigation and assessment dependant on the scope and context of the unexpected finding.

## 11.0 Notice of Copyright

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## 12.0 Attachments

A. Site location and Tolland Estate Renewal Project staging masterplan	3 pages
B. Aerial photographs	13 pages
C. Site features	1 page
D. Site photographs	7 pages

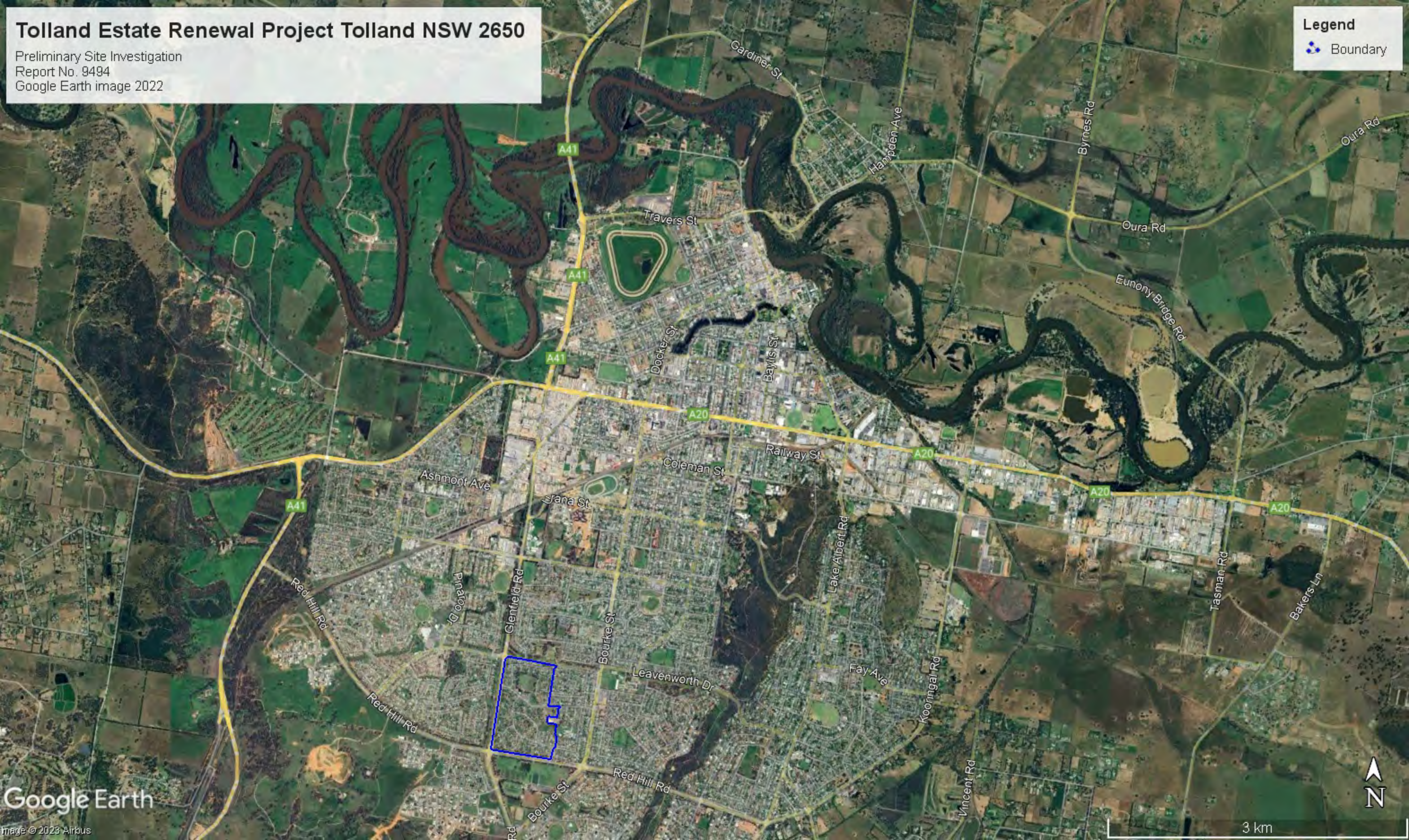


**Attachment A : *Site location and Tolland Estate Renewal Project staging masterplan***

# Tolland Estate Renewal Project Tolland NSW 2650

Preliminary Site Investigation  
Report No. 9494  
Google Earth image 2022

**Legend**  
Boundary

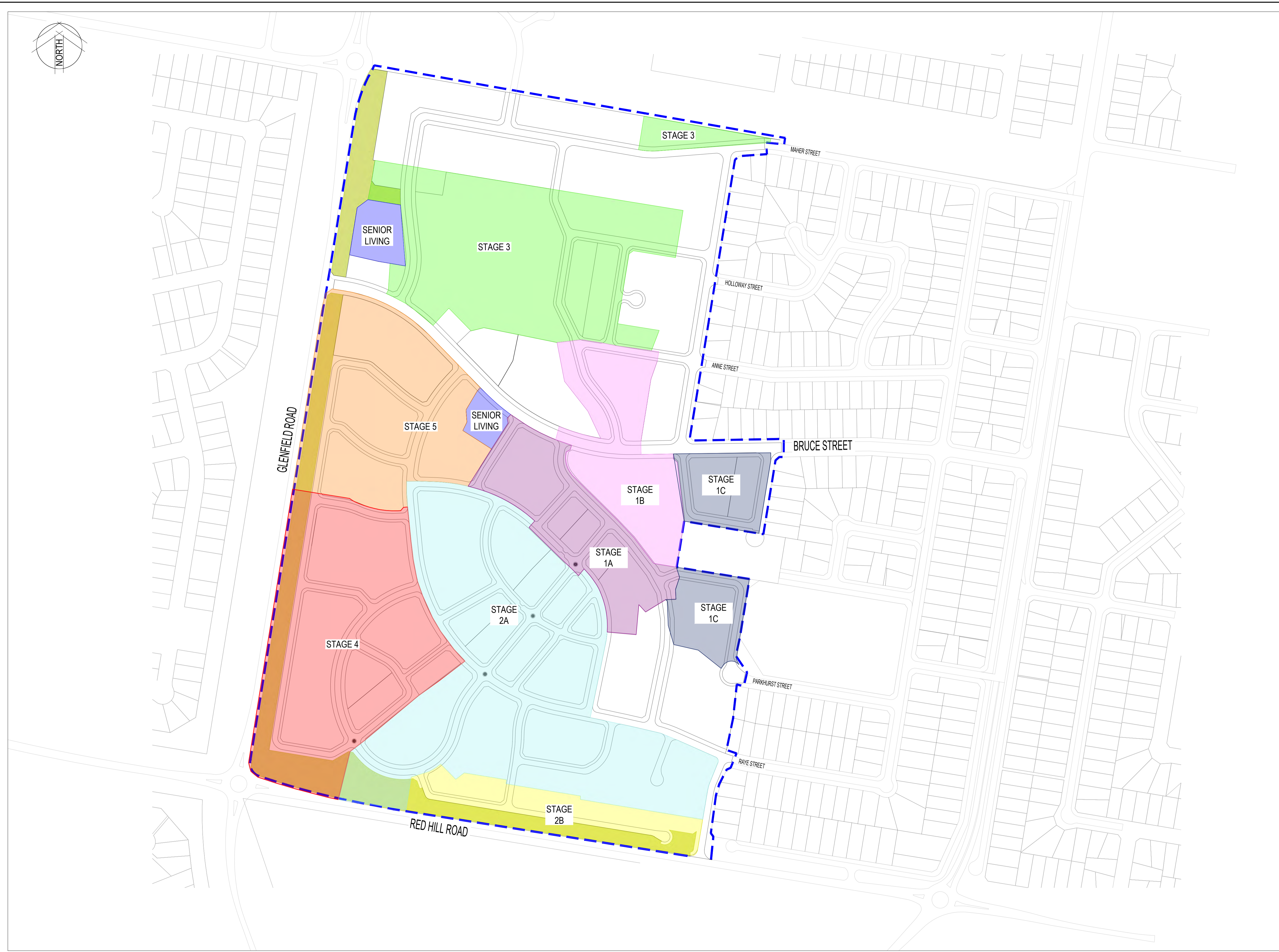
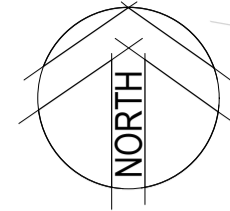


# Tolland Estate Renewal Project Tolland NSW 2650

Preliminary Site Investigation  
Report No. 9494  
Google Earth image 2022

**Legend**  
Boundary



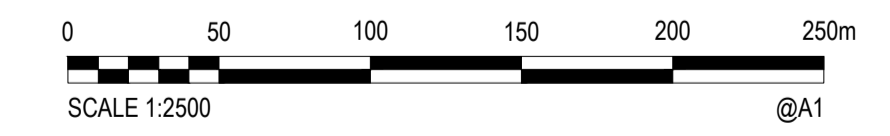


**LEGEND**

- LIMIT OF WORKS
- STAGE 1A
- STAGE 1B
- STAGE 1C
- STAGE 2A
- STAGE 2B
- STAGE 3
- STAGE 4
- STAGE 5
- SENIOR LIVING

INDICATIVE TIMELINE	
STAGE	EXPECTED COMPLETION DATE
1A	2024
1B	2025
1C	2025
2A	2026
2B	2027
3	2028
4	2029
5	2030
SENIOR LIVING	2025

CONFIDENTIAL



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Rev.	Date	Description	ML/AS	JS	GZ
			Des.	Verif.	Appd.
A	16/03/2023	PRELIMINARY			



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Drawn	Date
DP	16/03/2023
Checked	Date
AS	16/03/2023
Designed	Date
TMJS	16/03/2023
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JS	16/03/2023
Approved	
GZ	

Client	NSW DEPARTMENT OF PLANNING, INDUSTRY AND ENVIRONMENT		
Project	TOLLAND RENEWAL PROJECT TOLLAND, WAGGA WAGGA		
Status	FOR CONCEPT APPROVAL NOT TO BE USED FOR CONSTRUCTION PURPOSES		
	Mar-23	AHD	Scale 1:2500
			Size A1
Drawing Number	50521067-C1015		Revision A
Title	STAGING MASTER PLAN		
	SHEET 1 OF 1		





**Attachment B** : *Aerial photographs and satellite images*

# Tolland Estate Renewal Project Tolland NSW 2650

Preliminary Site Investigation  
Report No. 9494  
NSW LPI image 1966

**Legend**  
Boundary



# Tolland Estate Renewal Project Tolland NSW 2650

Preliminary Site Investigation  
Report No. 9494  
NSW LPI image 1971

**Legend**  
Boundary



# Tolland Estate Renewal Project Tolland NSW 2650

Preliminary Site Investigation  
Report No. 9494  
NSW LPI image 1980

**Legend**

- Boundary



# Tolland Estate Renewal Project Tolland NSW 2650

Preliminary Site Investigation  
Report No. 9494  
NSW LPI image 1990

**Legend**  
Boundary

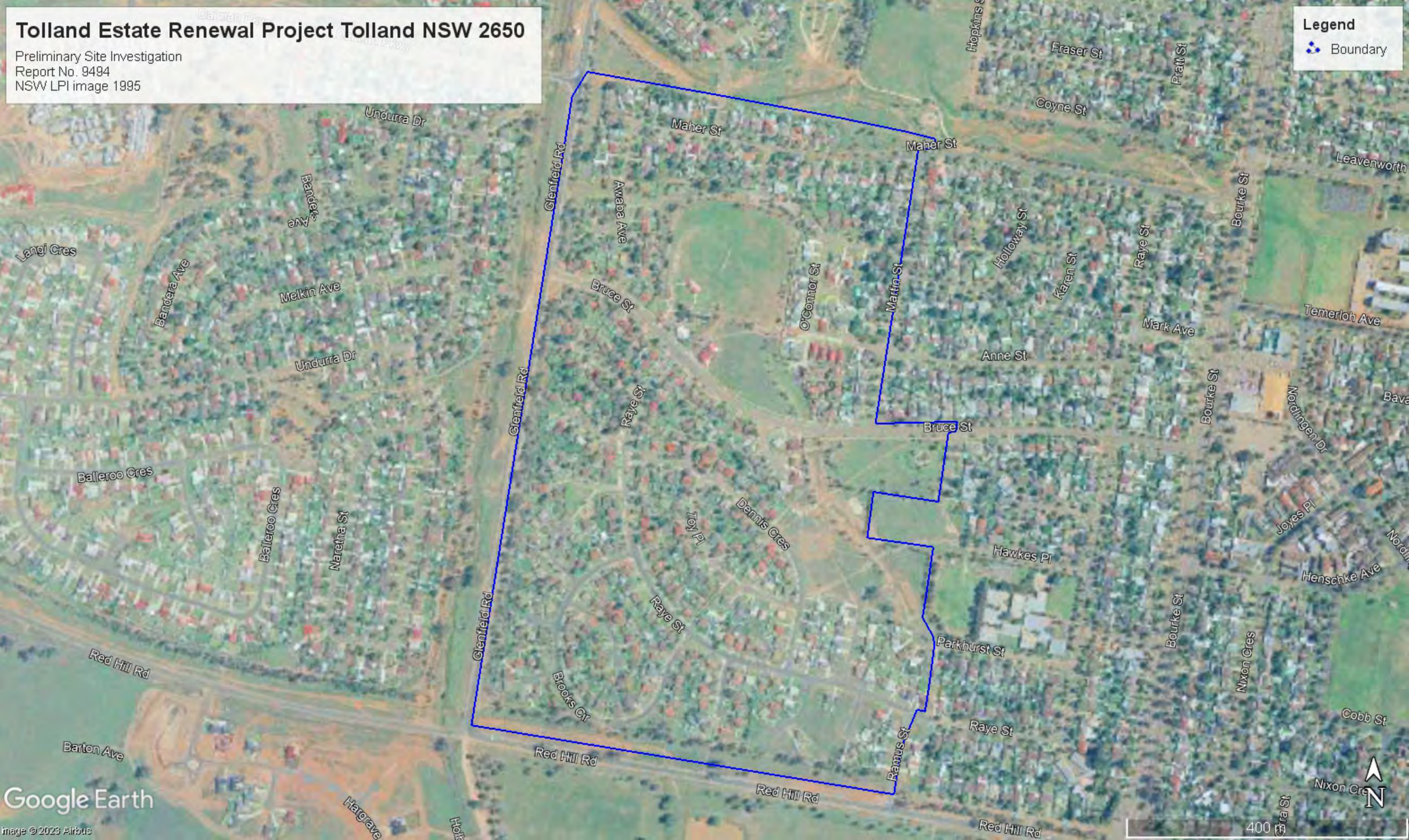


# Tolland Estate Renewal Project Tolland NSW 2650

Preliminary Site Investigation  
Report No. 9494  
NSW LPI image 1995

**Legend**

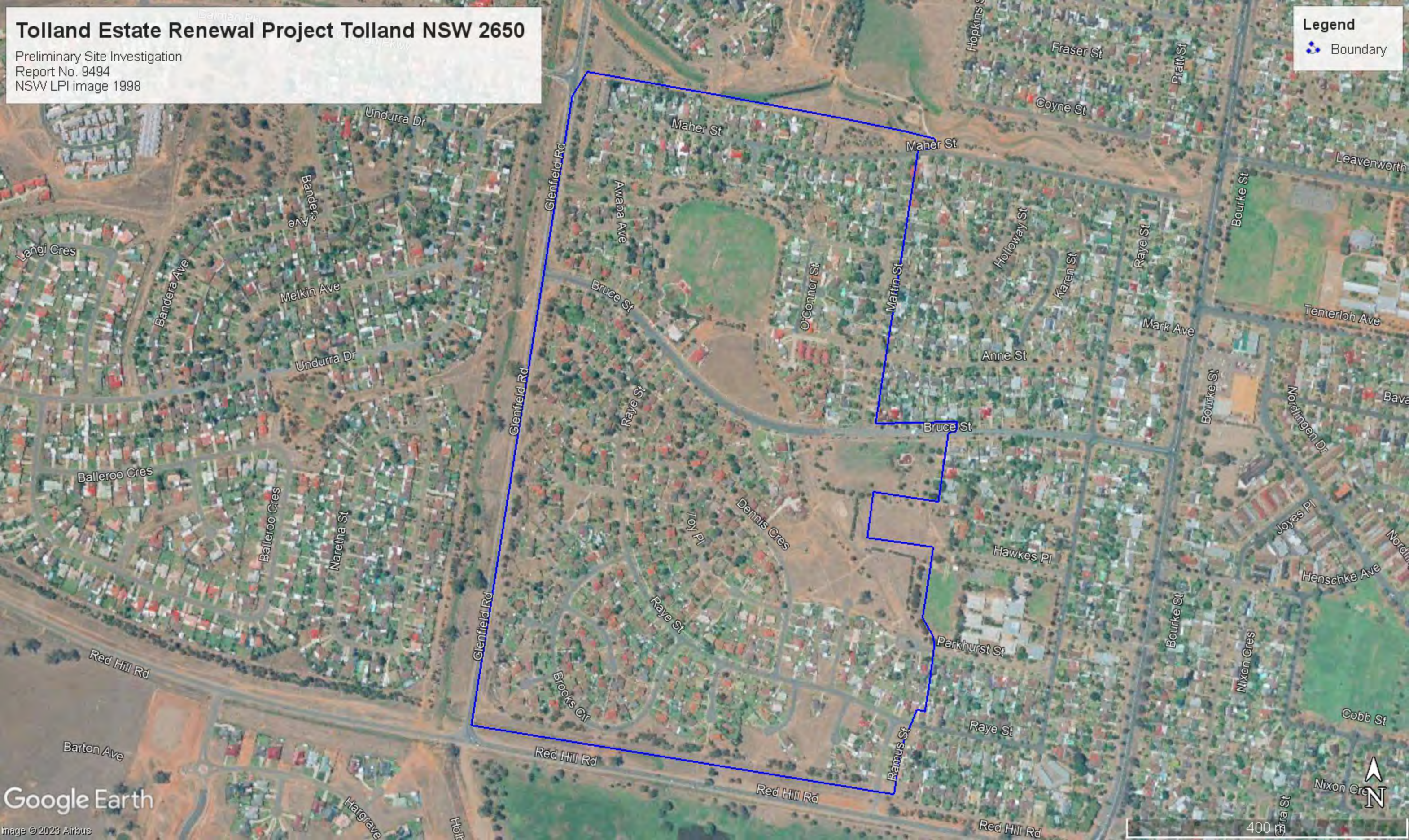
- Boundary



# Tolland Estate Renewal Project Tolland NSW 2650

Preliminary Site Investigation  
Report No. 9494  
NSW LPI image 1998

**Legend**  
Boundary



# Tolland Estate Renewal Project Tolland NSW 2650

Preliminary Site Investigation  
Report No. 9494  
Google Earth image 2007

**Legend**  
Boundary





# Tolland Estate Renewal Project Tolland NSW 2650

Preliminary Site Investigation  
Report No. 9494  
Nearmap image 2010

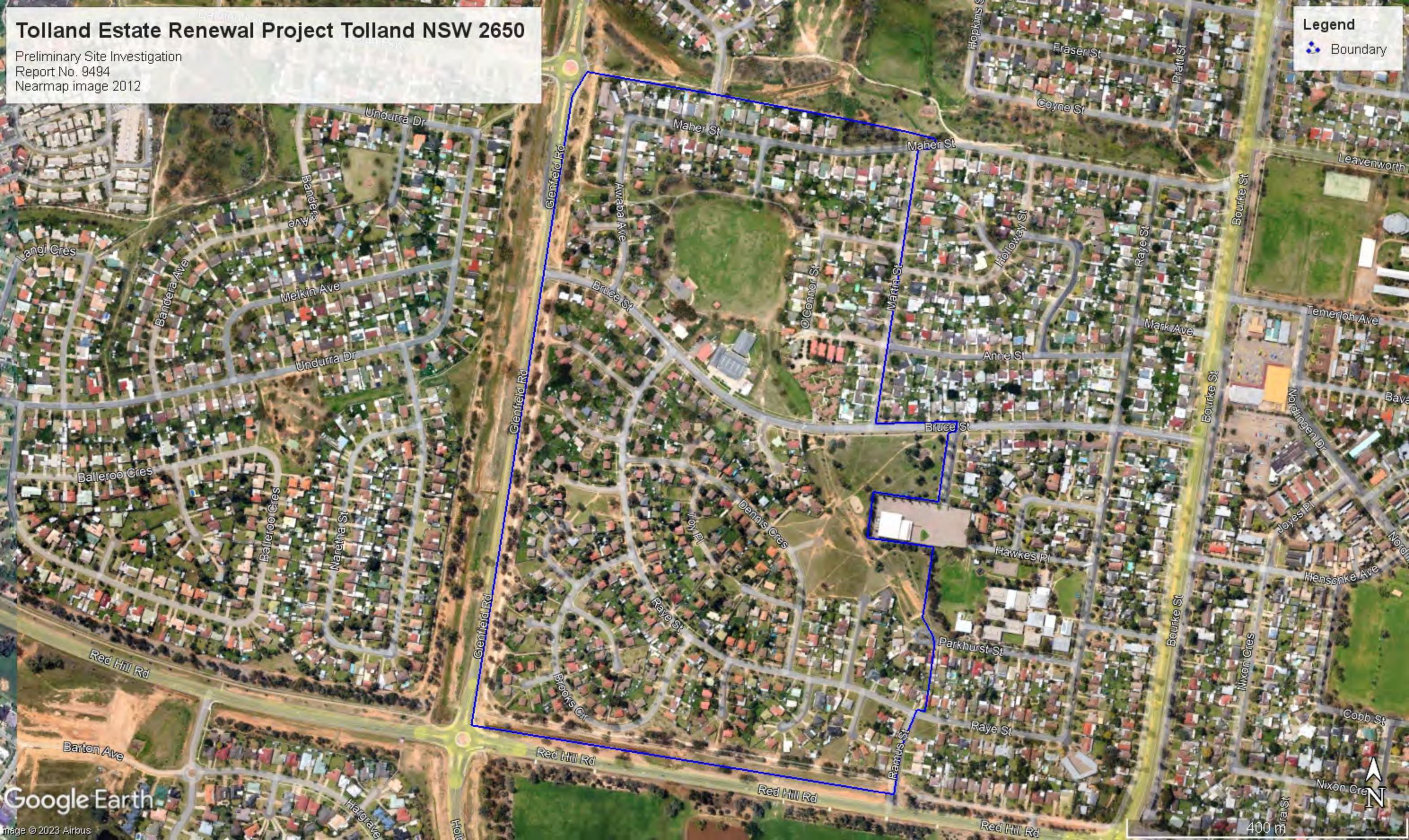
**Legend**  
Boundary



# Tolland Estate Renewal Project Tolland NSW 2650

Preliminary Site Investigation  
Report No. 9494  
Nearmap image 2012

**Legend**  
Boundary



# Tolland Estate Renewal Project Tolland NSW 2650

Preliminary Site Investigation  
Report No. 9494  
Nearmap image 2014

**Legend**  
Boundary



# Tolland Estate Renewal Project Tolland NSW 2650

Preliminary Site Investigation  
Report No. 9494  
Nearmap image 2017

**Legend**  
Boundary



# Tolland Estate Renewal Project Tolland NSW 2650

Preliminary Site Investigation  
Report No. 9494  
Nearmap image 2020

**Legend**  
Boundary



# Tolland Estate Renewal Project Tolland NSW 2650

Preliminary Site Investigation  
Report No. 9494  
Nearmap image 2023

**Legend**  
Boundary





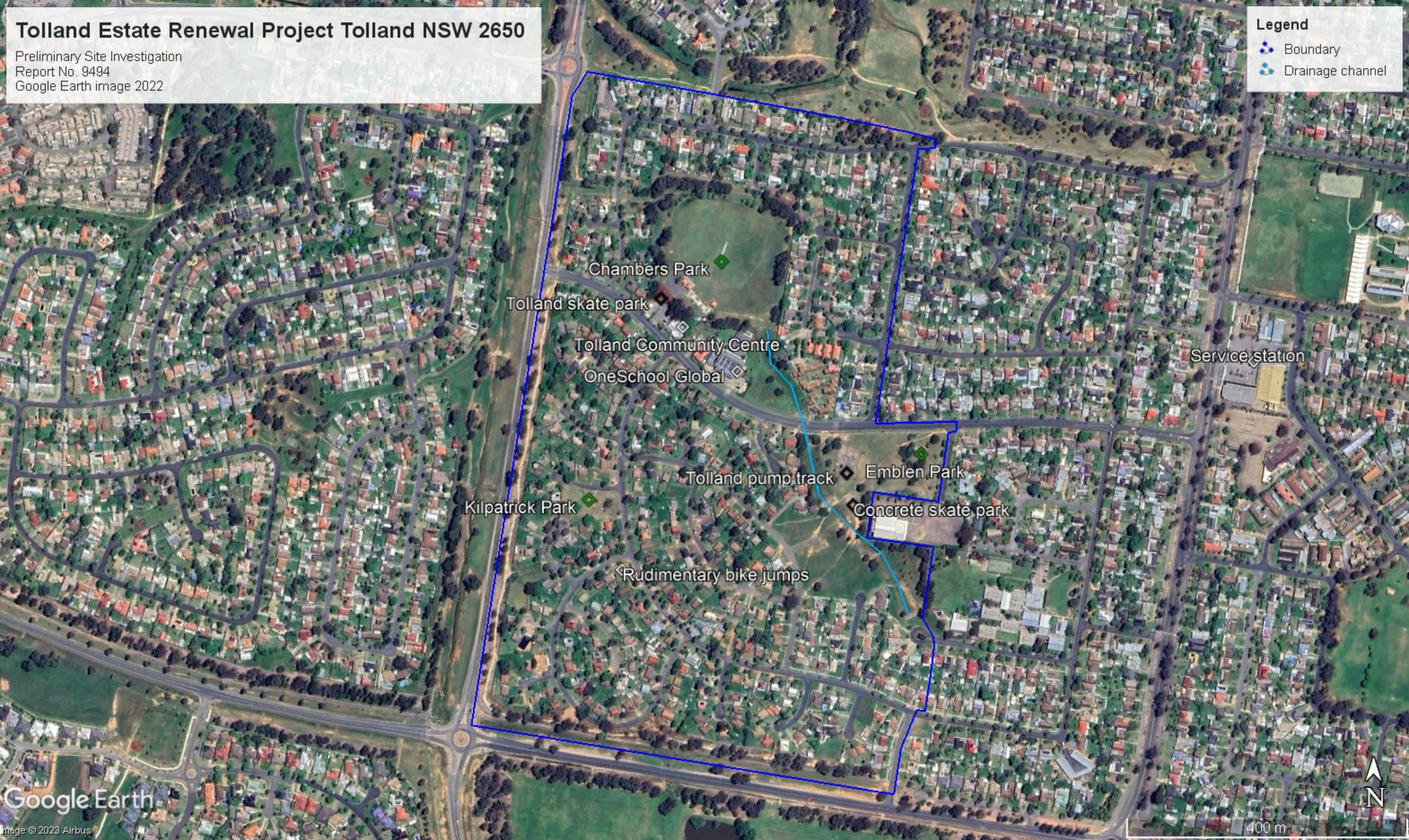
**Attachment C : *Site features***

# Tolland Estate Renewal Project Tolland NSW 2650

Preliminary Site Investigation  
Report No. 9494  
Google Earth image 2022

**Legend**

- Boundary
- Drainage channel



- Chambers Park
- Tolland skate park
- Tolland Community Centre
- OneSchool Global
- Kilpatrick Park
- Tolland pump track
- Emblen Park
- Concrete skate park
- Rudimentary bike jumps

Service station







**Attachment D : *Site photographs***

Site photographs  
Tolland Estate Renewal Project Tolland NSW 2650  
Report No. 9494



Photograph 1: Typical house in Tolland



Photograph 2: Typical house in Tolland

Site photographs  
Tolland Estate Renewal Project Tolland NSW 2650  
Report No. 9494



Photograph 3: Typical house in Tolland



Photograph 4: Typical house in Tolland



Photograph 5: Typical unit block in Tolland



Photograph 6: Typical cul-de-sac in Tolland



Photograph 7: Tolland Community Centre in Bruce Street



Photograph 8: OneSchool Global along Bruce Street



Photograph 9: Chambers Park facing east. The basketball court can be seen behind the playground. The oval/cricket pitch is in the background.



Photograph 10: Emblen Park facing west. The playground is to the south and the pump track can be seen in the background.



Photograph 11: Kilpatrick Park facing west. The small raised garden beds can be seen to the south.



Photograph 12: Open drainage channel, adjacent to OneSchool Global



Photograph 13: Dumped rubbish on a vacant site.



Photograph 14: Dumped rubbish on a vacant site. The rudimentary bike jumps can be seen on the right.