GOVERNMENT OF
WESTERN AUSTRALIA

CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

Purpose Permit number:	CPS 10096/1
Permit Holder:	City of Kalamunda
Duration of Permit:	From 24 September 2023 to 24 September 2033

The permit holder is authorised to clear *native vegetation* subject to the following conditions of this permit.

PART I – CLEARING AUTHORISED

1. Clearing authorised (purpose)

The permit holder is authorised to clear *native vegetation* for the purpose of managing and controlling the spread of *Typha* species.

2. Land on which clearing is to be done

Refer to Table 1 in Schedule 1

3. Clearing authorised

The permit holder must not clear more than five (5) hectares of *native vegetation* within the area cross-hatched yellow in Figure 1 of Schedule 1.

4. Period during which clearing is authorised

The permit holder must not clear any *native vegetation* after 24 September 2028.

PART II – MANAGEMENT CONDITIONS

5. Avoid, minimise, and reduce impacts and extent of clearing

In determining the *native vegetation* authorised to be cleared under this permit, the permit holder must apply the following principles, set out in descending order of preference:

(a) avoid the clearing of *native vegetation*;

(b) minimise the amount of *native vegetation* to be cleared; and

(c) reduce the impact of clearing on any environmental value.

6. Weed and dieback management

When undertaking any clearing authorised under this permit, the permit holder must take the following measures to minimise the risk of introduction and spread of *weeds* and *dieback*:

(a) clean earth-moving machinery of soil and vegetation prior to entering and leaving the area to be cleared;

(b) ensure that no known *dieback* or *weed*-affected soil, *mulch, fill*, or other material is brought into the area to be cleared; and

(c) restrict the movement of machines and other vehicles to the limits of the areas to be cleared.

7. Directional clearing

The permit holder must:

(a) conduct clearing authorised under this permit in one direction towards adjacent *native vegetation*; and

(b) allow a reasonable time for fauna present within the area being cleared to move into adjacent *native vegetation* ahead of the clearing activity.

8. Fauna Management

(a) Prior to undertaking any clearing authorised under this permit, the permit holder must inspect the area authorised to be cleared under this permit prior to works commencing and for the duration of clearing for any native fauna that may be present.

(b) Where fauna have been identified under condition 8(a), works must cease until the fauna have escaped into adjacent habitat ahead of the clearing activity or translocated into *native vegetation*.

9. Weed Management – Chemical

Undertake spraying of chemical solution during the driest period of the year when the water level is at its lowest and during calm conditions.

PART III - RECORD KEEPING AND REPORTING

10. Records that must be kept

The permit holder must maintain records relating to the listed relevant matters in accordance with the specifications detailed in Table 1.

Table 1: Records that must be kept

No.	Relevant matter	Specifications
1.	In relation to the authorised clearing activities generally	(a) the species composition, structure, and density of the cleared area; (b) the location where the clearing occurred, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 2020 (GDA2020), expressing the geographical coordinates in Eastings and Northings; (c) the date that the area was cleared; (d) direction of clearing;

No.	Relevant matter	Specifications
		(e) the size of the area cleared (in hectares); (f) actions taken to avoid, minimise, and reduce the impacts and extent of clearing in accordance with condition 5; (g) actions taken to minimise the risk of the introduction and spread of *weeds* and *dieback* in accordance with condition 6; (h) fauna management actions undertaken in accordance with condition 8; and (i) the date that chemical *weed* control occurred and associated wind conditions in accordance with condition 9

11. Reporting

The permit holder must provide to the *CEO* the records required under condition 10 of this permit when requested by the *CEO*.

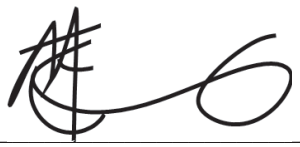
DEFINITIONS

In this permit, the terms in Table have the meanings defined.

Table 2: Definitions

Term	Definition
CEO	Chief Executive Officer of the department responsible for the administration of the clearing provisions under the *Environmental Protection Act 1986*.
clearing	has the meaning given under section 3(1) of the EP Act.
condition	a condition to which this clearing permit is subject under section 51H of the EP Act.
dieback	means the effect of *Phytophthora* species on native vegetation.
department	means the department established under section 35 of the *Public Sector Management Act 1994* (WA) and designated as responsible for the administration of the EP Act, which includes Part V Division 3.
EP Act	*Environmental Protection Act 1986* (WA)
fill	means material used to increase the ground level, or to fill a depression.
mulch	means the use of organic matter, wood chips or rocks to slow the movement of water across the soil surface and to reduce evaporation.
native vegetation	has the meaning given under section 3(1) and section 51A of the EP Act.
weeds	means any plant – (a) that is a declared pest under section 22 of the *Biosecurity and Agriculture Management Act 2007*; or (b) published in a Department of Biodiversity, Conservation and Attractions species-led ecological impact and invasiveness ranking summary, regardless of ranking; or (c) not indigenous to the area concerned.

END OF CONDITIONS



Mathew Gannaway
MANAGER
NATIVE VEGETATION REGULATION

Officer delegated under Section 20
of the Environmental Protection Act 1986

31 August 2023

Schedule 1

Table 1: Land on which clearing is to be done

Property	Locality
Lot 1 on Deposited Plan 120090	Kalamunda
Lot 1 on Diagram 48268	Forrestfield
Lot 1 on Diagram 50295	Forrestfield
Lot 1 on Diagram 66612	Lesmurdie
Lot 1 on Plan 11612	Forrestfield
Lot 10 on Diagram 62117	Kalamunda
Lot 100 on Deposited Plan 184406	Walliston
Lot 100 on Deposited Plan 415018	High Wycombe
Lot 100 on Deposited Plan 71902	Kalamunda
Lot 10022 on Diagram 56337	High Wycombe
Lot 10028 on Deposited Plan 91326	Gooseberry Hill
Lot 10032 on Diagram 56251	Forrestfield
Lot 10040 on Plan 11810	High Wycombe
Lot 10047 on Diagram 57350	High Wycombe
Lot 10051 on Diagram 57067	High Wycombe
Lot 101 on Deposited Plan 189427	Bickley
Lot 101 on Deposited Plan 248350	Kalamunda
Lot 101 on Deposited Plan 59834	High Wycombe
Lot 101 on Diagram 54848	Forrestfield
Lot 10103 on Diagram 57928	Forrestfield
Lot 10176 on Plan 13343	Maida Vale
Lot 10177 on Diagram 58802	Gooseberry Hill
Lot 10177 on Diagram 58802	Gooseberry Hill
Lot 10205 on Plan 13420	High Wycombe
Lot 10208 on Plan 13419	High Wycombe
Lot 10208 on Plan 13419	High Wycombe
Lot 10208 on Plan 13419	High Wycombe
Lot 10209 on Plan 13417	High Wycombe
Lot 10209 on Plan 13417	High Wycombe
Lot 10220 on Diagram 59765	Maida Vale
Lot 10222 on Diagram 54277	Forrestfield
Lot 10271 on Plan 13588	Maida Vale
Lot 10273 on Plan 13418	High Wycombe
Lot 10274 on Plan 13418	High Wycombe
Lot 10299 on Plan 13566	Gooseberry Hill
Lot 10368 on Diagram 52130	High Wycombe
Lot 104 on Plan 17920	Forrestfield
Lot 104 on Plan 17920	Forrestfield
Lot 10427 on Diagram 10427	Maida Vale

Property	Locality
Lot 10430 on Plan 11573	Forrestfield
Lot 10448 on Plan 10957	Forrestfield
Lot 10485 on Plan 9593	Maida Vale
Lot 10512 on Plan 14269	Forrestfield
Lot 10549 on Plan 13678	Maida Vale
Lot 10549 on Plan 13678	Maida Vale
Lot 10571 on Plan 8671	Gooseberry Hill
Lot 10572 on Diagram 52799	Maida Vale
Lot 106 on Plan 17920	Forrestfield
Lot 10687 on Diagram 52458	Forrestfield
Lot 10720 on Diagram 55286	Forrestfield
Lot 10721 on Diagram 55286	Forrestfield
Lot 10726 on Diagram 67742	Gooseberry Hill
Lot 10745 on Plan 15060	Maida Vale
Lot 10845 on Diagram 68874	Maida Vale
Lot 10858 on Deposited Plan 30819	Gooseberry Hill
Lot 109 on Deposited Plan 166808	Carmel
Lot 109 on Diagram 40297	Forrestfield
Lot 10999 on Plan 15648	High Wycombe
Lot 11034 on Plan 13984	Maida Vale
Lot 11035 on Plan 13984	Maida Vale
Lot 11048 on Deposited Plan 188248	High Wycombe
Lot 11050 on Plan 14762	Maida Vale
Lot 11069 on Plan 16028	High Wycombe
Lot 11072 on Deposited Plan 188672	High Wycombe
Lot 11084 on Diagram 72842	High Wycombe
Lot 11104 on Plan 16087	High Wycombe
Lot 11202 on Plan 10830	Maida Vale
Lot 11294 on Plan 16922	Maida Vale
Lot 11296 on Plan 16812	Forrestfield
Lot 11349 on Plan 12053	Forrestfield
Lot 115 on Deposited Plan 109525	Carmel
Lot 11548 on Plan 15159	High Wycombe
Lot 11569 on Deposited Plan 217894	Maida Vale
Lot 11569 on Deposited Plan 217894	Maida Vale
Lot 11583 on Deposited Plan 217852	Maida Vale
Lot 11600 on Plan 15286	High Wycombe
Lot 11634 on Diagram 79635	Maida Vale
Lot 11775 on Plan 18295	Forrestfield
Lot 11779 on Plan 14310	High Wycombe
Lot 11848 on Diagram 82725	Forrestfield

Property	Locality
Lot 11856 on Plan 14310	High Wycombe
Lot 11887 on Plan 18576	High Wycombe
Lot 11930 on Plan 13984	Maida Vale
Lot 11953 on Deposited Plan 192129	Maida Vale
Lot 11956 on Diagram 82220	High Wycombe
Lot 11991 on Diagram 72921	Gooseberry Hill
Lot 12 on Deposited Plan 49663	High Wycombe
Lot 120 on Diagram 55578	Forrestfield
Lot 120 on Diagram 55578	Forrestfield
Lot 12026 on Diagram 85438	Maida Vale
Lot 12030 on Diagram 84253	Kalamunda
Lot 12034 on Diagram 84927	Gooseberry Hill
Lot 12062 on Plan 18924	Forrestfield
Lot 123 on Deposited Plan 169472	Walliston
Lot 12366 on Diagram 77413	Forrestfield
Lot 12372 on Diagram 75676	High Wycombe
Lot 12379 on Plan 14916	High Wycombe
Lot 1240 on Deposited Plan 404439	Piesse Brook
Lot 12447 on Diagram 78336	Gooseberry Hill
Lot 12481 on Plan 20251	Forrestfield
Lot 12569 on Plan 21016	High Wycombe
Lot 12579 on Diagram 54118	High Wycombe
Lot 12589 on Deposited Plan 192761	Maida Vale
Lot 12706 on Plan 21252	Gooseberry Hill
Lot 12747 on Plan 16087	High Wycombe
Lot 12747 on Plan 16128	High Wycombe
Lot 128 on Deposited Plan 52202	Wattle Grove
Lot 1285 on Diagram 18747	Kalamunda
Lot 13 on Diagram 24292	High Wycombe
Lot 131 on Diagram 43004	Lesmurdie
Lot 13211 on Plan 22311	Maida Vale
Lot 13213 on Diagram 90495	Gooseberry Hill
Lot 13225 on Plan 22897	High Wycombe
Lot 133 on Plan 3609	Forrestfield
Lot 134 on Plan 3609	Forrestfield
Lot 13413 on Diagram 97403	Gooseberry Hill
Lot 135 on Plan 3609	Forrestfield
Lot 135 on Plan 3609	Forrestfield
Lot 136 on Plan 3609	Forrestfield
Lot 13601 on Plan 23588	Forrestfield
Lot 13602 on Plan 23588	Forrestfield

Property	Locality
Lot 13603 on Plan 23589	Forrestfield
Lot 13641 on Plan 10861	Forrestfield
Lot 138 on Plan 3609	Forrestfield
Lot 13896 on Plan 7680	Gooseberry Hill
Lot 13897 on Diagram 22992	Gooseberry Hill
Lot 139 on Plan 3609	Forrestfield
Lot 13987 on Plan 24131	Forrestfield
Lot 14 on Diagram 24292	High Wycombe
Lot 140 on Deposited Plan 222583	Lesmurdie
Lot 140 on Plan 3609	Forrestfield
Lot 141 on Plan 3609	Forrestfield
Lot 14161 on Plan 24078	High Wycombe
Lot 142 on Deposited Plan 176290	Walliston
Lot 142 on Plan 3609	Forrestfield
Lot 143 on Deposited Plan 181478	Walliston
Lot 14419 on Deposited Plan 30622	High Wycombe
Lot 14420 on Deposited Plan 30622	High Wycombe
Lot 14509 on Deposited Plan 31502	Forrestfield
Lot 14547 on Deposited Plan 32394	High Wycombe
Lot 146 on Deposited Plan 213798	Walliston
Lot 14650 on Deposited Plan 33710	High Wycombe
Lot 14651 on Deposited Plan 33710	High Wycombe
Lot 14846 on Deposited Plan 35009	High Wycombe
Lot 15199 on Deposited Plan 37990	High Wycombe
Lot 15212 on Deposited Plan 38506	Forrestfield
Lot 15213 on Deposited Plan 39283	Forrestfield
Lot 153 on Deposited Plan 213798	Walliston
Lot 15401 on Deposited Plan 39533	High Wycombe
Lot 15405 on Deposited Plan 38797	Forrestfield
Lot 15406 on Deposited Plan 38797	Forrestfield
Lot 15426 on Deposited Plan 38202	High Wycombe
Lot 15430 on Deposited Plan 40810	Forrestfield
Lot 15511 on Deposited Plan 41214	Maida Vale
Lot 16 on Deposited Plan 202204	Kalamunda
Lot 1656 on Deposited Plan 208777	Pickering Brook
Lot 1658 on Plan 6814	Lesmurdie
Lot 1659 on Plan 6813	Lesmurdie
Lot 1674 on Deposited Plan 216289	Carmel
Lot 1690 on Plan 7220	Lesmurdie
Lot 17 on Deposited Plan 202204	Kalamunda
Lot 17 on Deposited Plan 222580	Kalamunda

Property	Locality
Lot 1722 on Plan 7228	Walliston
Lot 173 on Diagram 84096	Walliston
Lot 174 on Deposited Plan 193225	Walliston
Lot 1743 on Deposited Plan 208777	Pickering Brook
Lot 1743 on Deposited Plan 208777	Pickering Brook
Lot 175 on Deposited Plan 193148	Walliston
Lot 179 on Deposited Plan 193225	Walliston
Lot 18 on Diagram 24292	High Wycombe
Lot 180 on Deposited Plan 27571	Lesmurdie
Lot 1875 on Deposited Plan 249836	Maida Vale
Lot 1879 on Deposited Plan 168945	Piesse Brook
Lot 1890 on Plan 7758	Lesmurdie
Lot 1949 on Deposited Plan 241759	Walliston
Lot 1978 on Diagram 30809	Lesmurdie
Lot 2 on Deposited Plan 120090	Kalamunda
Lot 2 on Diagram 23278	Wattle Grove
Lot 2 on Diagram 49398	Forrestfield
Lot 2 on Diagram 60837	Maida Vale
Lot 20 on Deposited Plan 68952	High Wycombe
Lot 200 on Deposited Plan 54450	Forrestfield
Lot 200 on Deposited Plan 77781	High Wycombe
Lot 2001 on Deposited Plan 26827	Forrestfield
Lot 2002 on Deposited Plan 26827	Forrestfield
Lot 2003 on Deposited Plan 26827	High Wycombe
Lot 2010 on Deposited Plan 47329	High Wycombe
Lot 2011 on Deposited Plan 47329	High Wycombe
Lot 2012 on Plan 8506	Kalamunda
Lot 202 on Diagram 87143	Maida Vale
Lot 2022 on Diagram 31986	Lesmurdie
Lot 2037 on Plan 8524	Walliston
Lot 2039 on Diagram 32421	Wattle Grove
Lot 205 on Deposited Plan 252229	Kalamunda
Lot 2075 on Diagram 33054	Lesmurdie
Lot 2103 on Diagram 34085	Kalamunda
Lot 2111 on Plan 8699	Walliston
Lot 2112 on Plan 8699	Walliston
Lot 2122 on Diagram 34277	Kalamunda
Lot 2124 on Plan 8814	Kalamunda
Lot 2125 on Plan 8814	Kalamunda
Lot 2143 on Plan 8784	Kalamunda
Lot 2154 on Diagram 34546	Lesmurdie

Property	Locality
Lot 216 on Deposited Plan 130094	Gooseberry Hill
Lot 217 on Deposited Plan 130094	Gooseberry Hill
Lot 2187 on Plan 9076	Lesmurdie
Lot 2187 on Plan 9076	Lesmurdie
Lot 2190 on Plan 8600	Lesmurdie
Lot 22 on Deposited Plan 202204	Kalamunda
Lot 224 on Deposited Plan 130094	Gooseberry Hill
Lot 2252 on Diagram 37560	Lesmurdie
Lot 2261 on Deposited Plan 211285	Kalamunda
Lot 2261 on Deposited Plan 211285	Kalamunda
Lot 2261 on Deposited Plan 211285	Kalamunda
Lot 227 on Deposited Plan 409141	Wattle Grove
Lot 227 on Deposited Plan 409141	Wattle Grove
Lot 23 on Deposited Plan 202241	Carmel
Lot 2346 on Deposited Plan 175280	Forrestfield
Lot 2359 on Diagram 36865	Lesmurdie
Lot 2360 on Diagram 39773	Kalamunda
Lot 2378 on Plan 9875	Lesmurdie
Lot 2379 on Plan 9875	Lesmurdie
Lot 2400 on Diagram 39277	Walliston
Lot 2409 on Diagram 41166	Lesmurdie
Lot 2439 on Diagram 41384	Forrestfield
Lot 2455 on Plan 9456	Kalamunda
Lot 2458 on Plan 9704	Walliston
Lot 2487 on Diagram 37682	Lesmurdie
Lot 2512 on Diagram 40135	Kalamunda
Lot 2514 on Plan 8966	Kalamunda
Lot 2516 on Diagram 28645	Kalamunda
Lot 2560 on Plan 9734	Forrestfield
Lot 2570 on Plan 10649	Lesmurdie
Lot 2584 on Diagram 41854	Lesmurdie
Lot 26 on Deposited Plan 205160	Bickley
Lot 2668 on Plan 10796	Kalamunda
Lot 2682 on Plan 10997	Kalamunda
Lot 2682 on Plan 10997	Kalamunda
Lot 27 on Diagram 24284	High Wycombe
Lot 2744 on Diagram 46169	Lesmurdie
Lot 2746 on Diagram 47539	Lesmurdie
Lot 2770 on Plan 11287	Forrestfield
Lot 2771 on Plan 11287	Forrestfield
Lot 28 on Deposited Plan 49522	High Wycombe

Property	Locality
Lot 28 on Plan 14116	Maida Vale
Lot 28 on Plan 4666	High Wycombe
Lot 2807 on Plan 11476	Lesmurdie
Lot 2824 on Diagram 43004	Lesmurdie
Lot 2832 on Diagram 48945	Forrestfield
Lot 2850 on Diagram 49338	Forrestfield
Lot 2879 on Deposited Plan 213930	Forrestfield
Lot 2879 on Deposited Plan 213930	Forrestfield
Lot 2888 on Plan 11806	Lesmurdie
Lot 2919 on Diagram 45310	Lesmurdie
Lot 2920 on Diagram 45740	Lesmurdie
Lot 294 on Deposited Plan 72065	Forrestfield
Lot 2975 on Plan 11030	Wattle Grove
Lot 3 on Diagram 50293	Forrestfield
Lot 30 on Deposited Plan 205160	Bickley
Lot 300 on Plan S054457	High Wycombe
Lot 3000 on Deposited Plan 41299	Wattle Grove
Lot 3000 on Deposited Plan 42360	Maida Vale
Lot 3000 on Deposited Plan 44636	Forrestfield
Lot 3000 on Deposited Plan 47593	Wattle Grove
Lot 3001 on Deposited Plan 44636	Wattle Grove
Lot 3001 on Deposited Plan 53264	Maida Vale
Lot 301 on Deposited Plan 407240	High Wycombe
Lot 301 on Deposited Plan 415021	Maida Vale
Lot 301 on Deposited Plan 415021	Maida Vale
Lot 301 on Deposited Plan 42912	Walliston
Lot 301 on Deposited Plan 47669	High Wycombe
Lot 301 on Deposited Plan 57000	Kalamunda
Lot 301 on Plan S054457	High Wycombe
Lot 3016 on Plan 12049	Forrestfield
Lot 3018 on Plan 12048	Forrestfield
Lot 302 on Deposited Plan 415020	Maida Vale
Lot 302 on Deposited Plan 420526	High Wycombe
Lot 302 on Deposited Plan 47669	High Wycombe
Lot 303 on Deposited Plan 420526	High Wycombe
Lot 3034 on Plan 12152	Kalamunda
Lot 3041 on Plan 12250	Lesmurdie
Lot 3059 on Plan 12494	Forrestfield
Lot 3063 on Diagram 53730	Lesmurdie
Lot 3065 on Plan 9232	Kalamunda
Lot 3093 on Plan 12605	Forrestfield

Property	Locality
Lot 3095 on Plan 12605	Forrestfield
Lot 3097 on Plan 12493	Forrestfield
Lot 31 on Deposited Plan 205160	Bickley
Lot 3111 on Plan 9232	Kalamunda
Lot 3115 on Diagram 48569	Lesmurdie
Lot 312 on Deposited Plan 67412	Wattle Grove
Lot 313 on Deposited Plan 70410	Kalamunda
Lot 3136 on Diagram 54426	Forrestfield
Lot 3146 on Plan 12830	Carmel
Lot 319 on Deposited Plan 64846	Bickley
Lot 32 on Deposited Plan 205160	Carmel
Lot 320 on Deposited Plan 64846	Pickering Brook
Lot 321 on Deposited Plan 64846	Wattle Grove
Lot 322 on Deposited Plan 70410	Kalamunda
Lot 3227 on Diagram 59180	Kalamunda
Lot 3229 on Plan 13109	Lesmurdie
Lot 3275 on Plan 8488	Lesmurdie
Lot 3276 on Diagram 30618	Kalamunda
Lot 33 on Deposited Plan 49415	High Wycombe
Lot 33 on Diagram 12405	Kalamunda
Lot 33 on Diagram 27758	Kalamunda
Lot 33 on Plan 3379	Wattle Grove
Lot 3309 on Plan 10713	Lesmurdie
Lot 3311 on Diagram 43070	Kalamunda
Lot 34 on Diagram 12405	Kalamunda
Lot 3415 on Deposited Plan 216656	Lesmurdie
Lot 3455 on Diagram 49822	Kalamunda
Lot 3486 on Diagram 50253	Wattle Grove
Lot 3487 on Diagram 55585	Forrestfield
Lot 3495 on Plan 12606	Forrestfield
Lot 3501 on Deposited Plan 216656	Lesmurdie
Lot 351 on Deposited Plan 414638	Wattle Grove
Lot 3534 on Diagram 45317	Kalamunda
Lot 36 on Deposited Plan 40101	Walliston
Lot 3614 on Diagram 71634	Lesmurdie
Lot 3669 on Deposited Plan 189227	Kalamunda
Lot 367 on Deposited Plan 45270	Wattle Grove
Lot 3677 on Diagram 42077	Forrestfield
Lot 3691 on Diagram 5822	Kalamunda
Lot 372 on Deposited Plan 214176	Kalamunda
Lot 372 on Deposited Plan 214176	Kalamunda

Property	Locality
Lot 3729 on Plan 10592	Kalamunda
Lot 3803 on Plan 18283	Forrestfield
Lot 3811 on Diagram 41283	Lesmurdie
Lot 3811 on Plan 9902	Lesmurdie
Lot 3828 on Diagram 82426	Lesmurdie
Lot 3883 on Diagram 85412	Forrestfield
Lot 3888 on Diagram 85152	Forrestfield
Lot 3889 on Diagram 85645	Forrestfield
Lot 3974 on Plan 14272	Lesmurdie
Lot 4 on Diagram 12473	Forrestfield
Lot 400 on Deposited Plan 41619	Forrestfield
Lot 400 on Deposited Plan 42877	Wattle Grove
Lot 400 on Deposited Plan 51025	Wattle Grove
Lot 4000 on Deposited Plan 411342	Wattle Grove
Lot 4000 on Deposited Plan 61515	Lesmurdie
Lot 4000 on Deposited Plan 74128	Wattle Grove
Lot 4000 on Deposited Plan 74996	Wattle Grove
Lot 4001 on Deposited Plan 61515	Lesmurdie
Lot 4102 on Diagram 89806	Kewdale
Lot 4112 on Deposited Plan 219472	Forrestfield
Lot 4122 on Plan 9232	Kalamunda
Lot 4140 on Plan 21936	Walliston
Lot 4153 on Deposited Plan 193770	Lesmurdie
Lot 418 on Deposited Plan 42859	Wattle Grove
Lot 42 on Diagram 57369	Kalamunda
Lot 422 on Deposited Plan 207441	Kalamunda
Lot 422 on Deposited Plan 207441	Kalamunda
Lot 423 on Diagram 22006	Lesmurdie
Lot 424 on Deposited Plan 167196	Kalamunda
Lot 428 on Diagram 25051	Lesmurdie
Lot 428 on Diagram 25051	Lesmurdie
Lot 431 on Deposited Plan 168475	Kalamunda
Lot 435 on Deposited Plan 171164	Kalamunda
Lot 436 on Plan 6748	Lesmurdie
Lot 437 on Plan 6748	Lesmurdie
Lot 438 on Deposited Plan 173647	Lesmurdie
Lot 4426 on Plan 23736	Wattle Grove
Lot 443 on Deposited Plan 214176	Kalamunda
Lot 444 on Deposited Plan 214176	Kalamunda
Lot 46 on Plan 16028	High Wycombe
Lot 468 on Diagram 25935	Lesmurdie

Property	Locality
Lot 469 on Deposited Plan 171335	Lesmurdie
Lot 472 on Diagram 30944	Lesmurdie
Lot 473 on Plan 8339	Lesmurdie
Lot 4752 on Deposited Plan 255679	Kalamunda
Lot 477 on Deposited Plan 172608	Kalamunda
Lot 486 on Deposited Plan 402499	Wattle Grove
Lot 4860 on Deposited Plan 35035	Wattle Grove
Lot 49 on Diagram 40814	High Wycombe
Lot 4923 on Deposited Plan 35115	Wattle Grove
Lot 4983 on Deposited Plan 39495	Wattle Grove
Lot 5 on Diagram 14851	Walliston
Lot 5 on Diagram 42251	Kalamunda
Lot 5 on Diagram 71066	Maida Vale
Lot 5 on Plan 2625	Kalamunda
Lot 50 on Diagram 25138	Wattle Grove
Lot 50 on Diagram 2787	Kalamunda
Lot 50 on Diagram 33847	High Wycombe
Lot 500 on Deposited Plan 407010	Kalamunda
Lot 500 on Deposited Plan 412755	Carmel
Lot 500 on Deposited Plan 414639	Wattle Grove
Lot 500 on Deposited Plan 59358	Lesmurdie
Lot 500 on Deposited Plan 71902	Kalamunda
Lot 500 on Deposited Plan 72820	Kalamunda
Lot 500 on Deposited Plan 74459	Lesmurdie
Lot 5000 on Deposited Plan 413818	Wattle Grove
Lot 5001 on Deposited Plan 413819	Wattle Grove
Lot 5002 on Deposited Plan 413820	Wattle Grove
Lot 5003 on Deposited Plan 413821	Wattle Grove
Lot 501 on Deposited Plan 414639	Wattle Grove
Lot 501 on Deposited Plan 414990	Carmel
Lot 501 on Deposited Plan 59259	Forrestfield
Lot 501 on Deposited Plan 65823	Wattle Grove
Lot 502 on Deposited Plan 414639	Wattle Grove
Lot 503 on Deposited Plan 172594	Lesmurdie
Lot 503 on Deposited Plan 62578	Kalamunda
Lot 504 on Deposited Plan 172594	Lesmurdie
Lot 504 on Deposited Plan 413218	Carmel
Lot 505 on Deposited Plan 413218	Carmel
Lot 507 on Deposited Plan 50389	High Wycombe
Lot 5070 on Deposited Plan 40232	Wattle Grove
Lot 51 on Diagram 24961	Wattle Grove

Property	Locality
Lot 510 on Deposited Plan 406193	Wattle Grove
Lot 511 on Deposited Plan 406193	Wattle Grove
Lot 513 on Deposited Plan 172608	Kalamunda
Lot 5131 on Diagram 9265	Maida Vale
Lot 514 on Deposited Plan 172594	Lesmurdie
Lot 515 on Diagram 33801	Kalamunda
Lot 516 on Deposited Plan 54700	High Wycombe
Lot 520 on Deposited Plan 62534	Forrestfield
Lot 538 on Deposited Plan 411999	Walliston
Lot 54 on Diagram 32197	Kalamunda
Lot 543 on Diagram 50679	Forrestfield
Lot 546 on Diagram 31981	Lesmurdie
Lot 549 on Plan 9041	Lesmurdie
Lot 55 on Diagram 31498	Forrestfield
Lot 550 on Deposited Plan 62110	Lesmurdie
Lot 550 on Plan 9041	Lesmurdie
Lot 551 on Plan 9041	Lesmurdie
Lot 552 on Plan 7230	Lesmurdie
Lot 554 on Deposited Plan 421748	Forrestfield
Lot 555 on Deposited Plan 421748	Forrestfield
Lot 555 on Deposited Plan 61573	Kalamunda
Lot 555 on Deposited Plan 77777	High Wycombe
Lot 564 on Deposited Plan 402810	Lesmurdie
Lot 574 on Plan 9450	Lesmurdie
Lot 575 on Plan 9450	Lesmurdie
Lot 577 on Deposited Plan 172608	Kalamunda
Lot 58 on Deposited Plan 240268	Kalamunda
Lot 58 on Deposited Plan 240268	Kalamunda
Lot 581 on Deposited Plan 71883	Lesmurdie
Lot 583 on Diagram 46735	Lesmurdie
Lot 585 on Diagram 48890	Lesmurdie
Lot 586 on Plan 4684	Forrestfield
Lot 587 on Diagram 22366	Kalamunda
Lot 589 on Plan 8339	Lesmurdie
Lot 591 on Deposited Plan 182723	Kalamunda
Lot 591 on Deposited Plan 69437	Pickering Brook
Lot 595 on Plan 8729	Lesmurdie
Lot 596 on Plan 13485	Gooseberry Hill
Lot 597 on Deposited Plan 185384	Lesmurdie
Lot 597 on Deposited Plan 185384	Lesmurdie
Lot 6 on Deposited Plan 202203	Carmel

Property	Locality
Lot 6 on Deposited Plan 202204	Kalamunda
Lot 6 on Plan 2625	Kalamunda
Lot 600 on Deposited Plan 411946	Lesmurdie
Lot 601 on Deposited Plan 24621	High Wycombe
Lot 602 on Deposited Plan 29827	High Wycombe
Lot 61 on Deposited Plan 208872	Pickering Brook
Lot 610 on Deposited Plan 192596	Kalamunda
Lot 611 on Deposited Plan 193255	Kalamunda
Lot 614 on Deposited Plan 195349	Lesmurdie
Lot 618 on Deposited Plan 28229	Kalamunda
Lot 619 on Deposited Plan 28229	Kalamunda
Lot 620 on Deposited Plan 29636	Kalamunda
Lot 622 on Deposited Plan 35723	Gooseberry Hill
Lot 650 on Deposited Plan 413813	Wattle Grove
Lot 66 on Diagram 44729	Maida Vale
Lot 66 on Diagram 49833	High Wycombe
Lot 7 on Plan 2625	Kalamunda
Lot 7 on Plan 9232	Kalamunda
Lot 70 on Plan 3380	Wattle Grove
Lot 71 on Plan 3380	Wattle Grove
Lot 7271 on Plan 7487	High Wycombe
Lot 7271 on Plan 7487	High Wycombe
Lot 746 on Deposited Plan 67362	Wattle Grove
Lot 749 on Deposited Plan 68302	Wattle Grove
Lot 7582 on Diagram 26229	Kalamunda
Lot 7678 on Diagram 27722	Gooseberry Hill
Lot 77 on Plan 14422	Maida Vale
Lot 78 on Plan 13418	High Wycombe
Lot 782 on Deposited Plan 72990	High Wycombe
Lot 7876 on Plan 8160	Forrestfield
Lot 7883 on Plan 8080	Gooseberry Hill
Lot 7883 on Plan 8080	Gooseberry Hill
Lot 7885 on Plan 8193	Forrestfield
Lot 79 on Deposited Plan 101074	Kalamunda
Lot 79 on Deposited Plan 49522	High Wycombe
Lot 7929 on Diagram 30799	Gooseberry Hill
Lot 7936 on Diagram 30681	Maida Vale
Lot 7945 on Plan 8325	High Wycombe
Lot 7970 on Diagram 31214	Gooseberry Hill
Lot 8 on Diagram 16498	Kalamunda
Lot 8 on Plan 9232	Kalamunda

Property	Locality
Lot 8000 on Deposited Plan 413748	Forrestfield
Lot 8000 on Deposited Plan 66510	High Wycombe
Lot 8001 on Deposited Plan 45024	Wattle Grove
Lot 8001 on Deposited Plan 45043	Forrestfield
Lot 8001 on Deposited Plan 57973	Wattle Grove
Lot 8001 on Deposited Plan 69083	Forrestfield
Lot 8002 on Deposited Plan 55799	Wattle Grove
Lot 8008 on Deposited Plan 415579	Forrestfield
Lot 801 on Deposited Plan 419725	Carmel
Lot 8013 on Deposited Plan 413765	Forrestfield
Lot 8015 on Deposited Plan 419653	Forrestfield
Lot 802 on Deposited Plan 419725	Carmel
Lot 809 on Deposited Plan 202178	Pickering Brook
Lot 810 on Deposited Plan 202178	Pickering Brook
Lot 8160 on Plan 8494	Forrestfield
Lot 8161 on Plan 8494	Forrestfield
Lot 8174 on Diagram 32960	Gooseberry Hill
Lot 8186 on Plan 8645	High Wycombe
Lot 8227 on Plan 8496	Gooseberry Hill
Lot 8228 on Plan 8496	Gooseberry Hill
Lot 824 on Deposited Plan 71337	High Wycombe
Lot 8250 on Diagram 33831	Maida Vale
Lot 827 on Deposited Plan 51028	Wattle Grove
Lot 8295 on Plan 8771	High Wycombe
Lot 8337 on Diagram 34268	Gooseberry Hill
Lot 8361 on Deposited Plan 217852	Maida Vale
Lot 8369 on Diagram 33545	Maida Vale
Lot 8455 on Plan 9177	Forrestfield
Lot 846 on Deposited Plan 55098	Wattle Grove
Lot 85 on Deposited Plan 222581	Kalamunda
Lot 8536 on Diagram 40042	High Wycombe
Lot 8562 on Diagram 39705	High Wycombe
Lot 86 on Deposited Plan 214724	Pickering Brook
Lot 8667 on Diagram 38828	Gooseberry Hill
Lot 8785 on Diagram 41034	Forrestfield
Lot 88 on Deposited Plan 76893	Maida Vale
Lot 88 on Deposited Plan 76893	Maida Vale
Lot 8826 on Diagram 33828	Maida Vale
Lot 8876 on Deposited Plan 217852	Maida Vale
Lot 888 on Deposited Plan 49229	Wattle Grove
Lot 8882 on Diagram 43692	Maida Vale

Property	Locality
Lot 8882 on Diagram 43692	Maida Vale
Lot 8911 on Plan 8080	Gooseberry Hill
Lot 8912 on Deposited Plan 190012	Gooseberry Hill
Lot 8920 on Deposited Plan 185420	Gooseberry Hill
Lot 8920 on Deposited Plan 185420	Gooseberry Hill
Lot 8921 on Plan 8056	Gooseberry Hill
Lot 8922 on Plan 8056	Gooseberry Hill
Lot 8925 on Diagram 43714	Maida Vale
Lot 8927 on Deposited Plan 180653	High Wycombe
Lot 8928 on Deposited Plan 180653	High Wycombe
Lot 9 on Diagram 22735	Forrestfield
Lot 9 on Plan 13485	Gooseberry Hill
Lot 9090 on Diagram 32102	Gooseberry Hill
Lot 9099 on Plan 8612	Forrestfield
Lot 91 on Deposited Plan 69722	Wattle Grove
Lot 9120 on Diagram 46577	Forrestfield
Lot 9127 on Deposited Plan 43123	Forrestfield
Lot 919 on Deposited Plan 58761	Wattle Grove
Lot 9194 on Diagram 33829	Maida Vale
Lot 9229 on Plan 8616	High Wycombe
Lot 9233 on Plan 8852	Gooseberry Hill
Lot 9237 on Plan 8852	Gooseberry Hill
Lot 9257 on Diagram 33975	Maida Vale
Lot 93 on Deposited Plan 110072	Carmel
Lot 9314 on Diagram 47177	Maida Vale
Lot 9318 on Diagram 46221	Maida Vale
Lot 9324 on Diagram 47181	Maida Vale
Lot 9388 on Plan 11300	Forrestfield
Lot 9392 on Plan 11273	Maida Vale
Lot 9393 on Plan 11273	Maida Vale
Lot 9397 on Diagram 45226	Maida Vale
Lot 9455 on Deposited Plan 181821	Forrestfield
Lot 9456 on Diagram 29542	High Wycombe
Lot 9462 on Deposited Plan 182008	High Wycombe
Lot 9463 on Deposited Plan 182008	High Wycombe
Lot 9464 on Deposited Plan 182009	High Wycombe
Lot 9479 on Plan 10863	Forrestfield
Lot 9524 on Diagram 47217	Forrestfield
Lot 9550 on Diagram 49050	Forrestfield
Lot 9611 on Plan 11729	Forrestfield
Lot 9639 on Plan 11612	Forrestfield

Property	Locality
Lot 9642 on Diagram 52100	Forrestfield
Lot 9673 on Plan 11818	Forrestfield
Lot 9674 on Plan 11818	Forrestfield
Lot 9685 on Deposited Plan 214183	Forrestfield
Lot 9686 on Plan 12014	Forrestfield
Lot 9687 on Plan 12015	Forrestfield
Lot 97 on Diagram 53969	Forrestfield
Lot 97 on Diagram 53969	Forrestfield
Lot 97 on Diagram 59451	Maida Vale
Lot 9747 on Plan 12033	Forrestfield
Lot 9773 on Plan 11896	Maida Vale
Lot 9835 on Diagram 53851	Forrestfield
Lot 9892 on Diagram 53048	Forrestfield
Lot 99 on Deposited Plan 30216	Wattle Grove
Lot 9919 on Diagram 42712	Maida Vale
Lot 9920 on Diagram 45416	Maida Vale
Lot 9972 on Plan 12650	Forrestfield
Lot 9972 on Plan 12651	Forrestfield
Lot 9972 on Plan 12653	Forrestfield
Reserve 17343	Piesse Brook
Reserve 27799	Gooseberry Hill
Reserve 9311	Carmel
Reserve 27799	Gooseberry Hill

Plan 10096/1

The boundary of the areas authorised to be cleared are shown in the maps below (Figure 1-32).

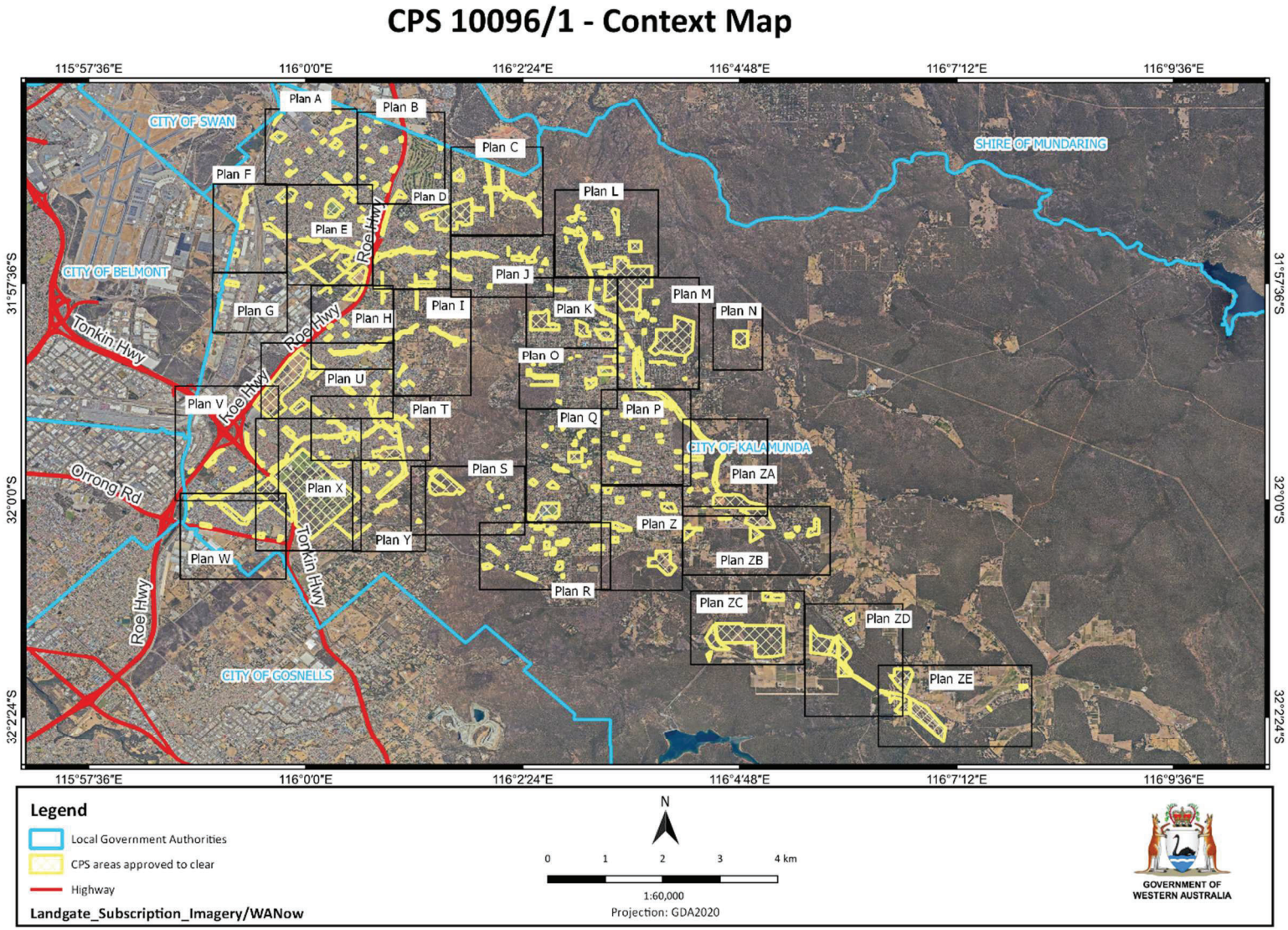


Figure 1 Context Map of the application area



Figure 2 Map of the boundary of the area within which clearing may occur

CPS 10096/1 - Plan B

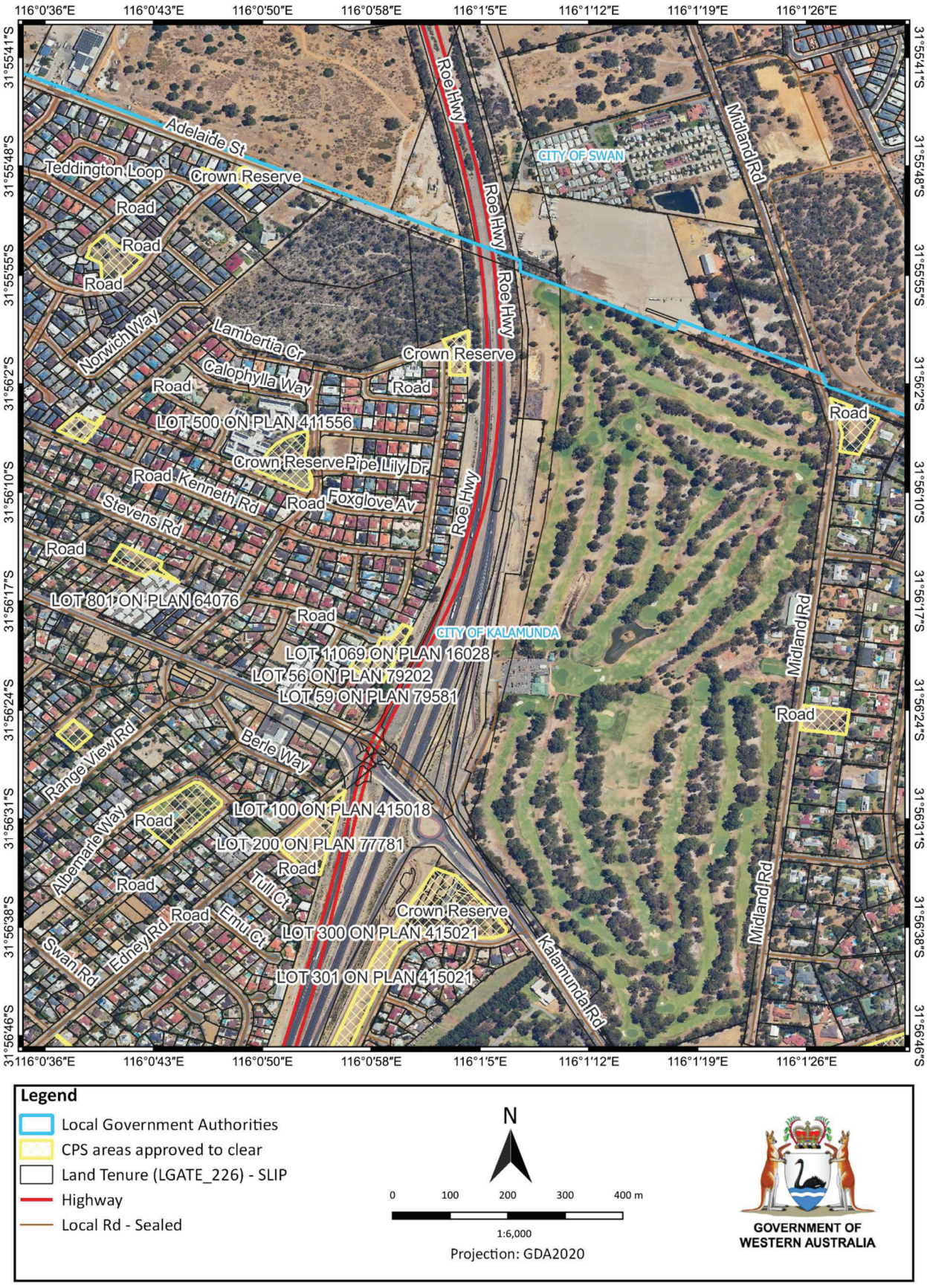


Figure 3 Map of the boundary of the area within which clearing may occur

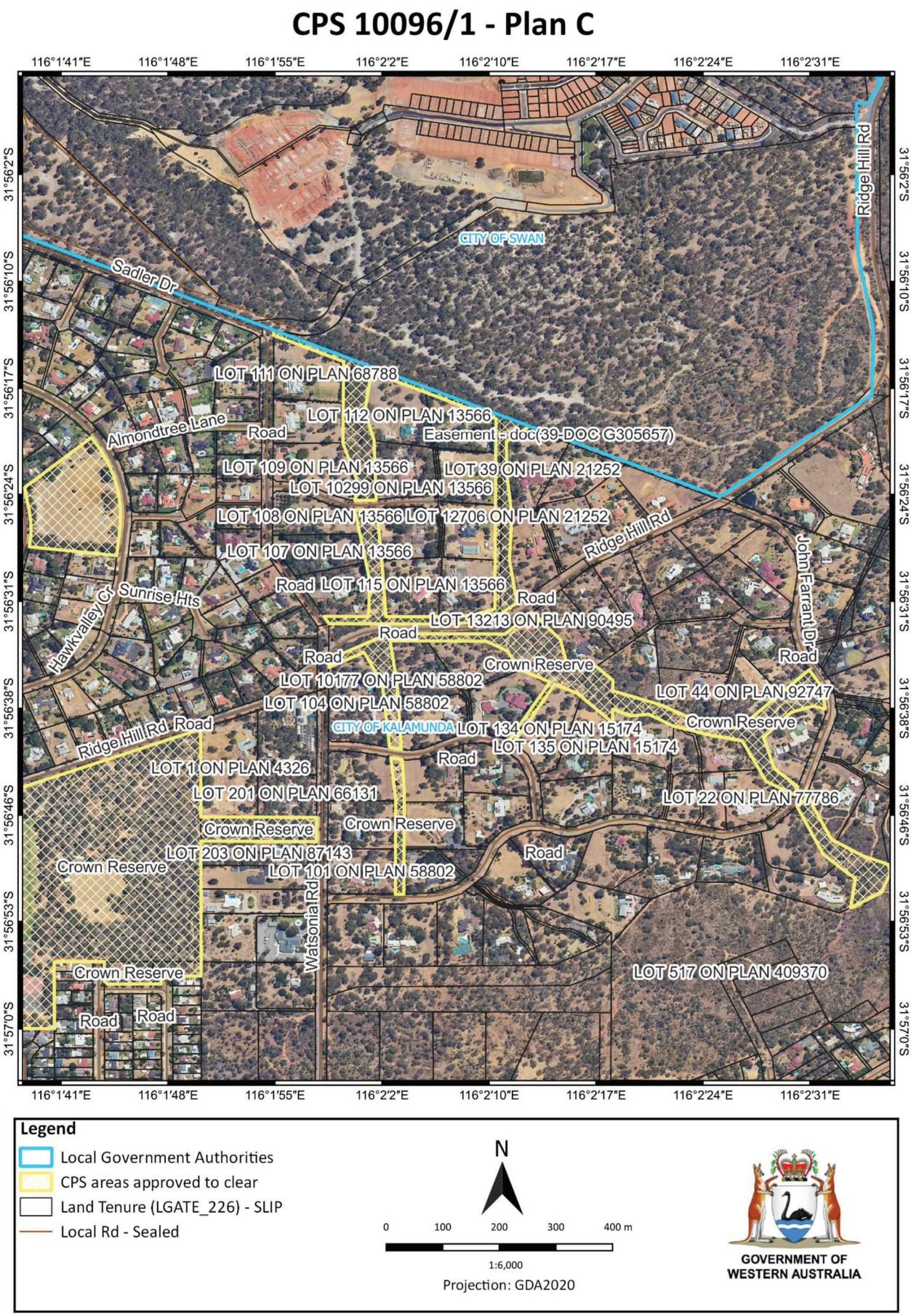


Figure 4 Map of the boundary of the area within which clearing may occur

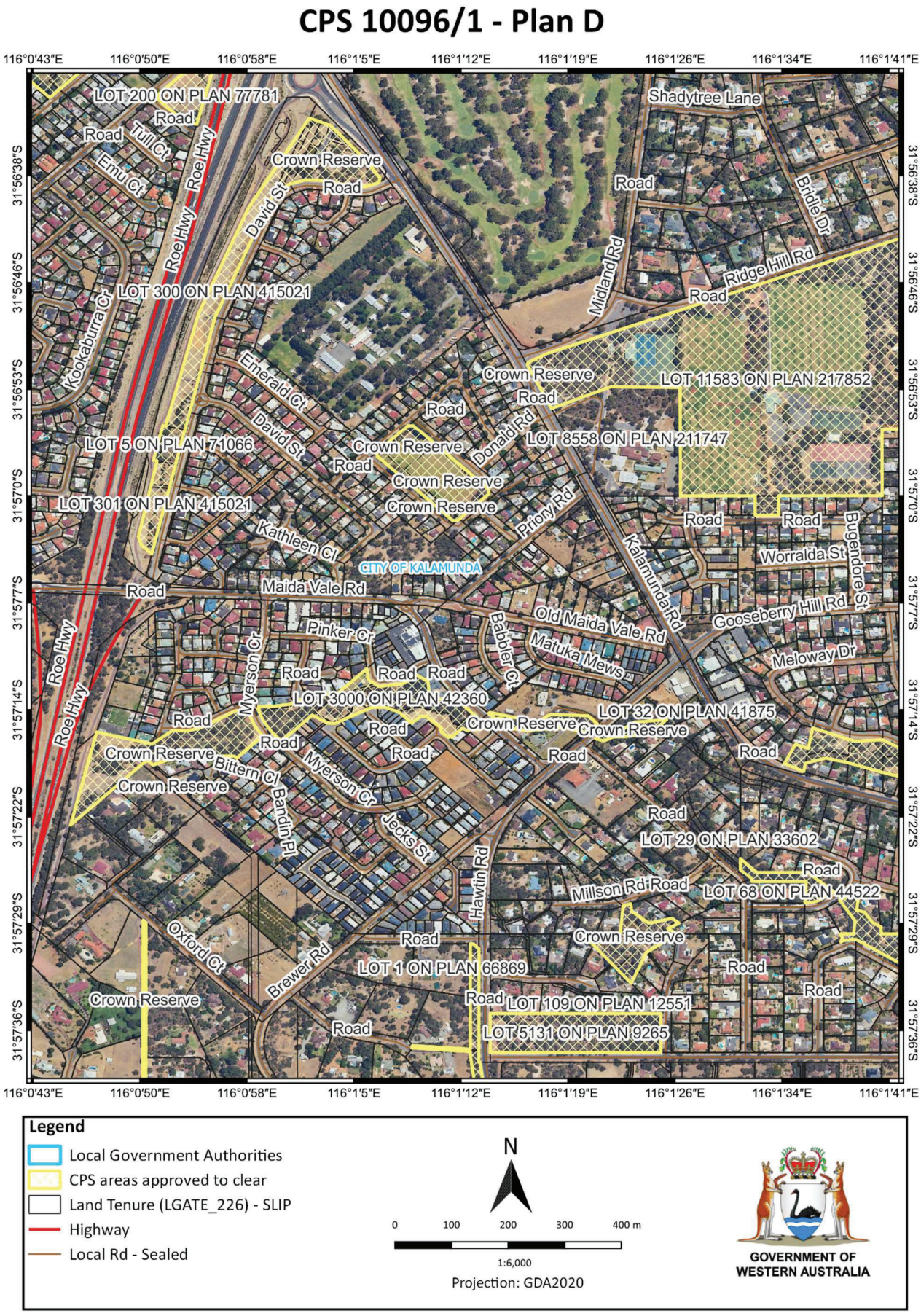


Figure 5 Map of the boundary of the area within which clearing may occur

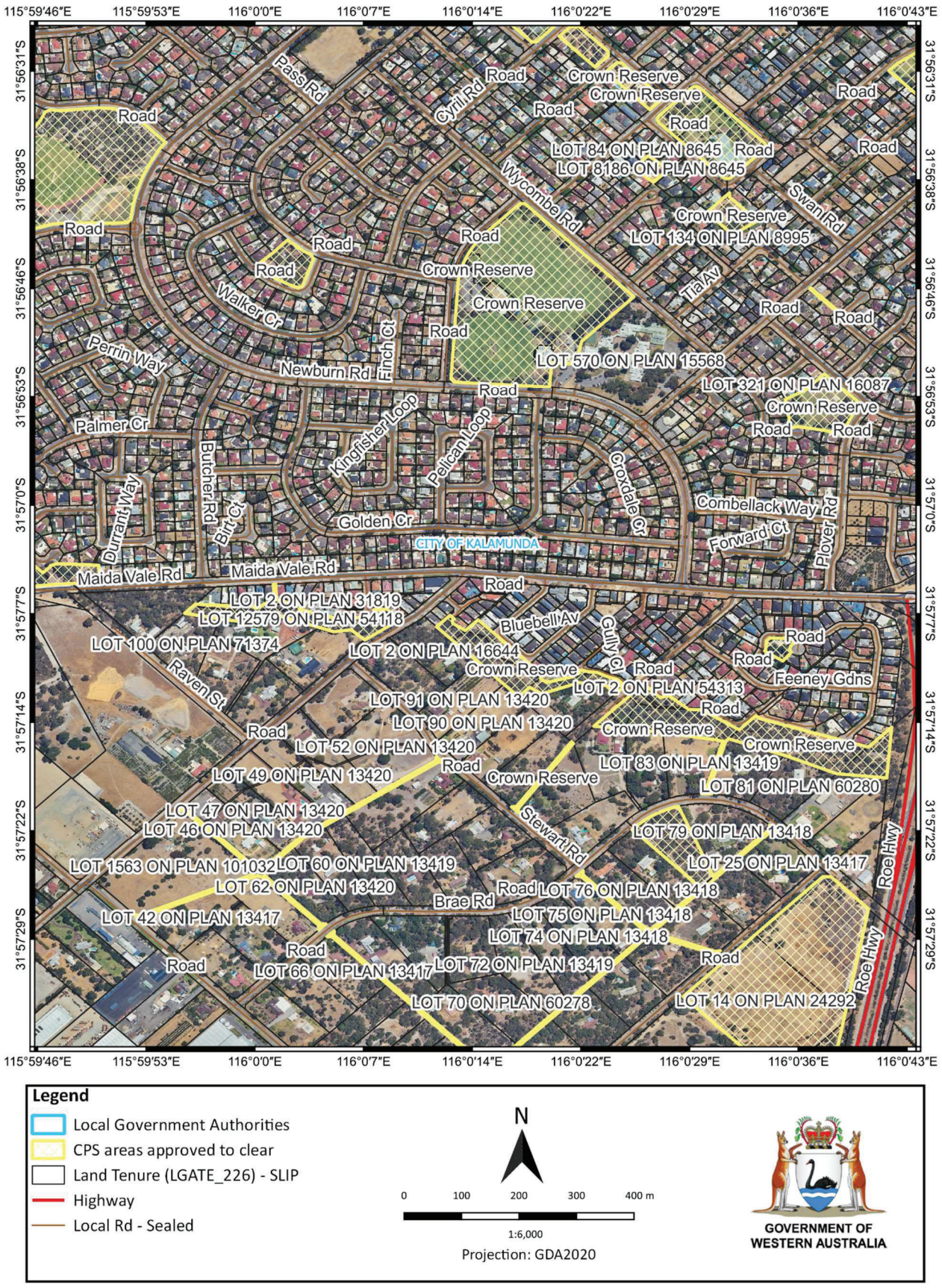


Figure 6 Map of the boundary of the area within which clearing may occur



Figure 7 Map of the boundary of the area within which clearing may occur



Figure 8 Map of the boundary of the area within which clearing may occur



Figure 9 Map of the boundary of the area within which clearing may occur

CPS 10096/1 - Plan I

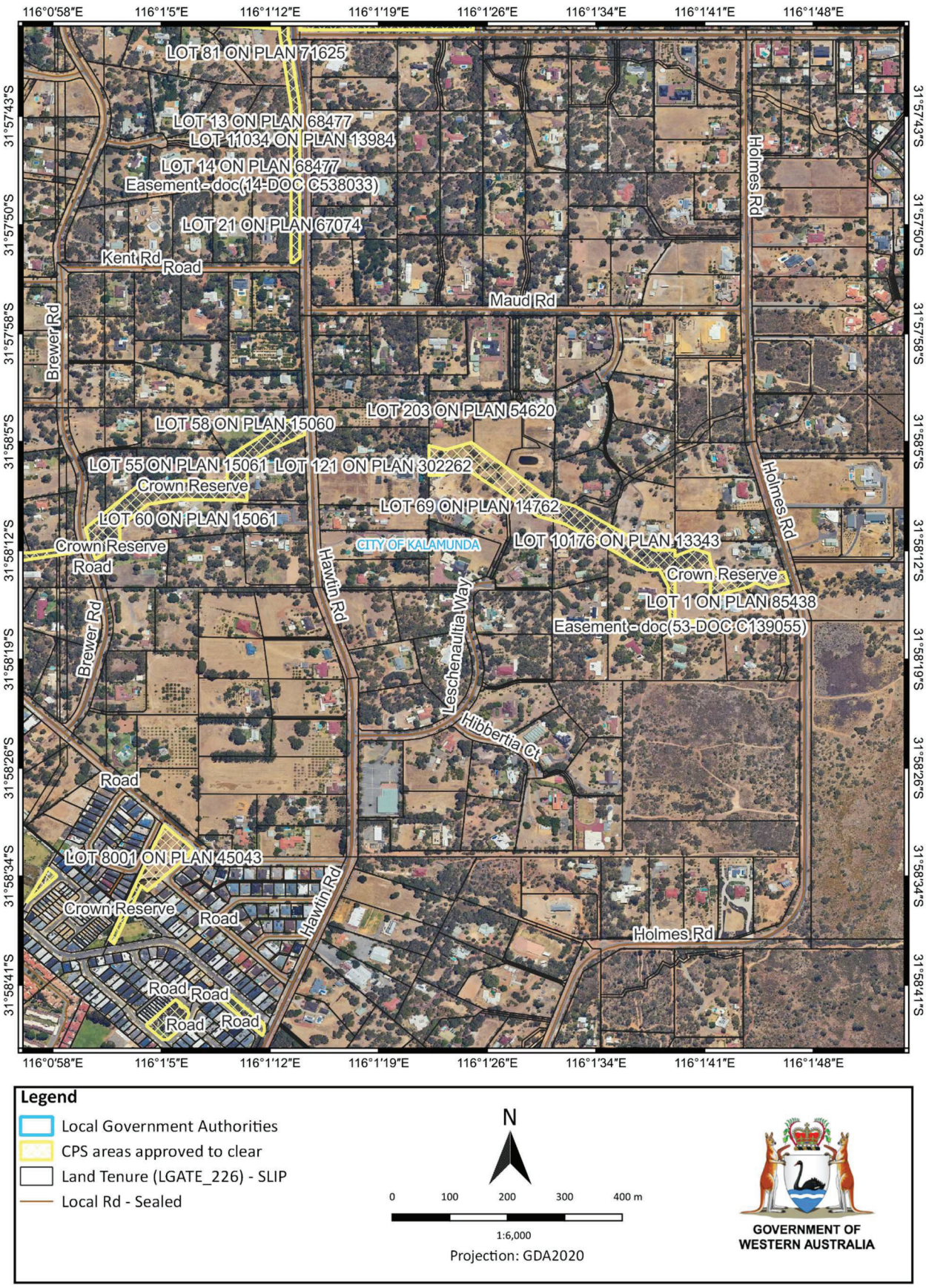


Figure 10 Map of the boundary of the area within which clearing may occur

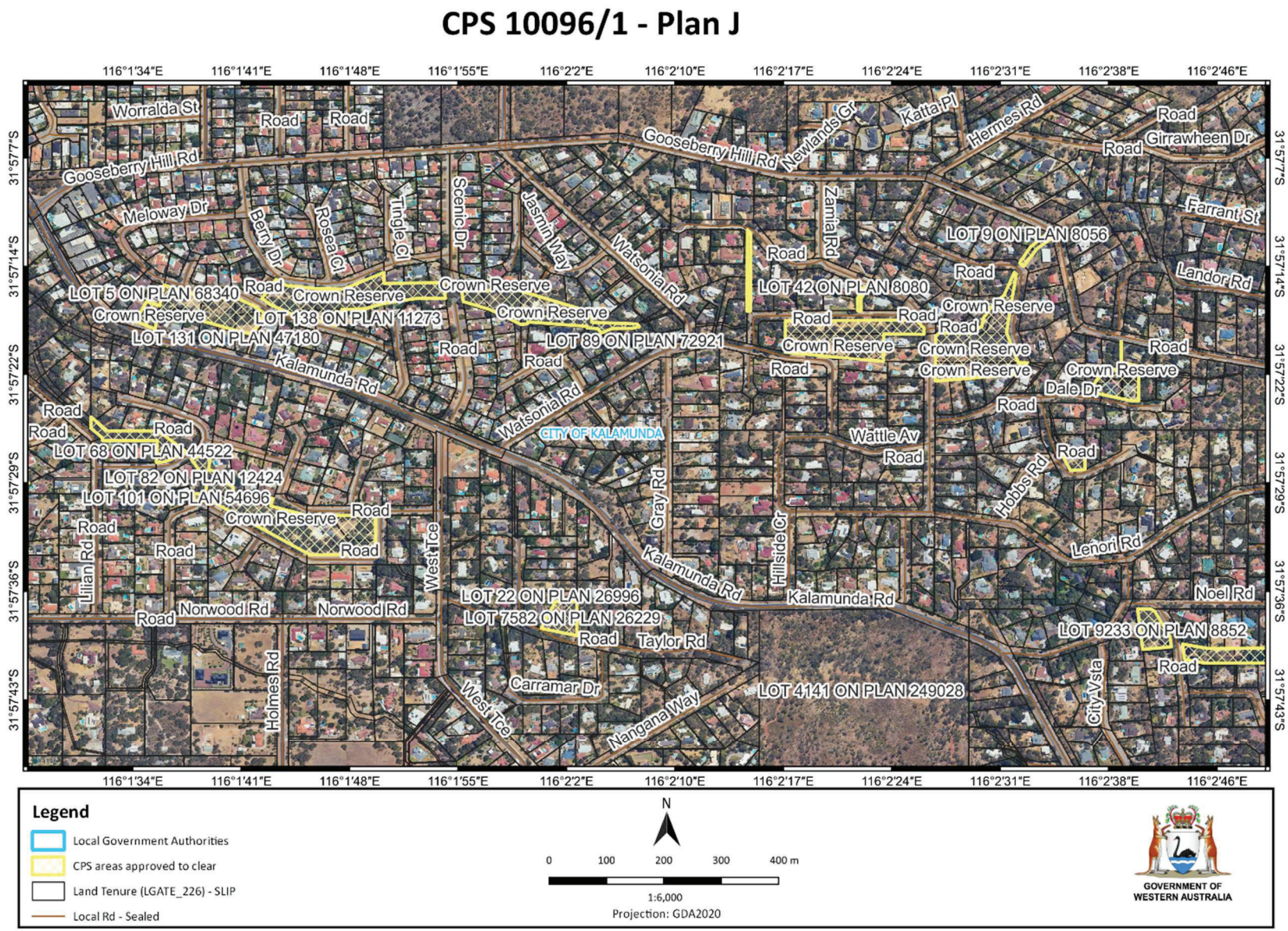


Figure 11 Map of the boundary of the area within which clearing may occur

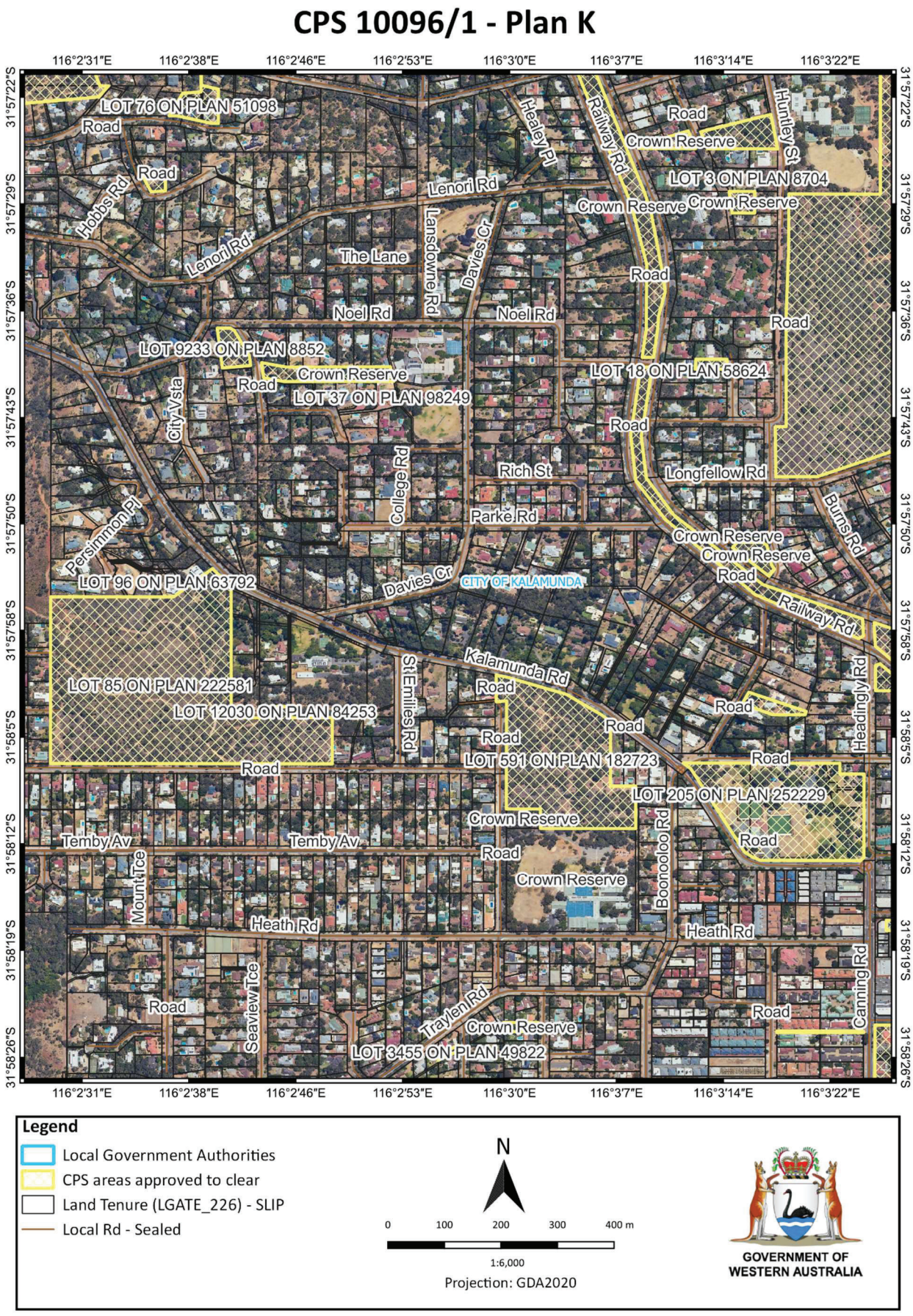


Figure 12 Map of the boundary of the area within which clearing may occur

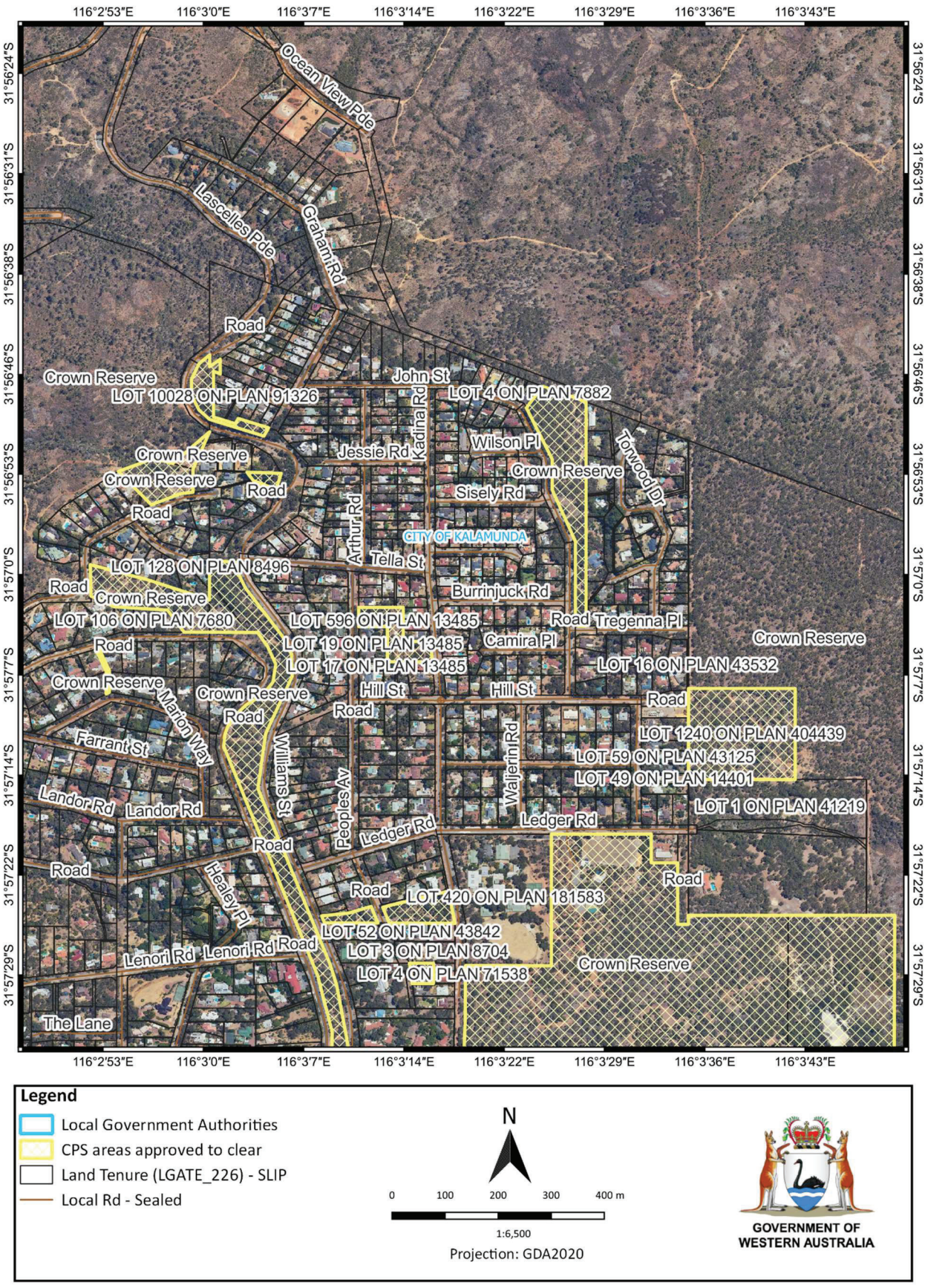


Figure 13 Map of the boundary of the area within which clearing may occur

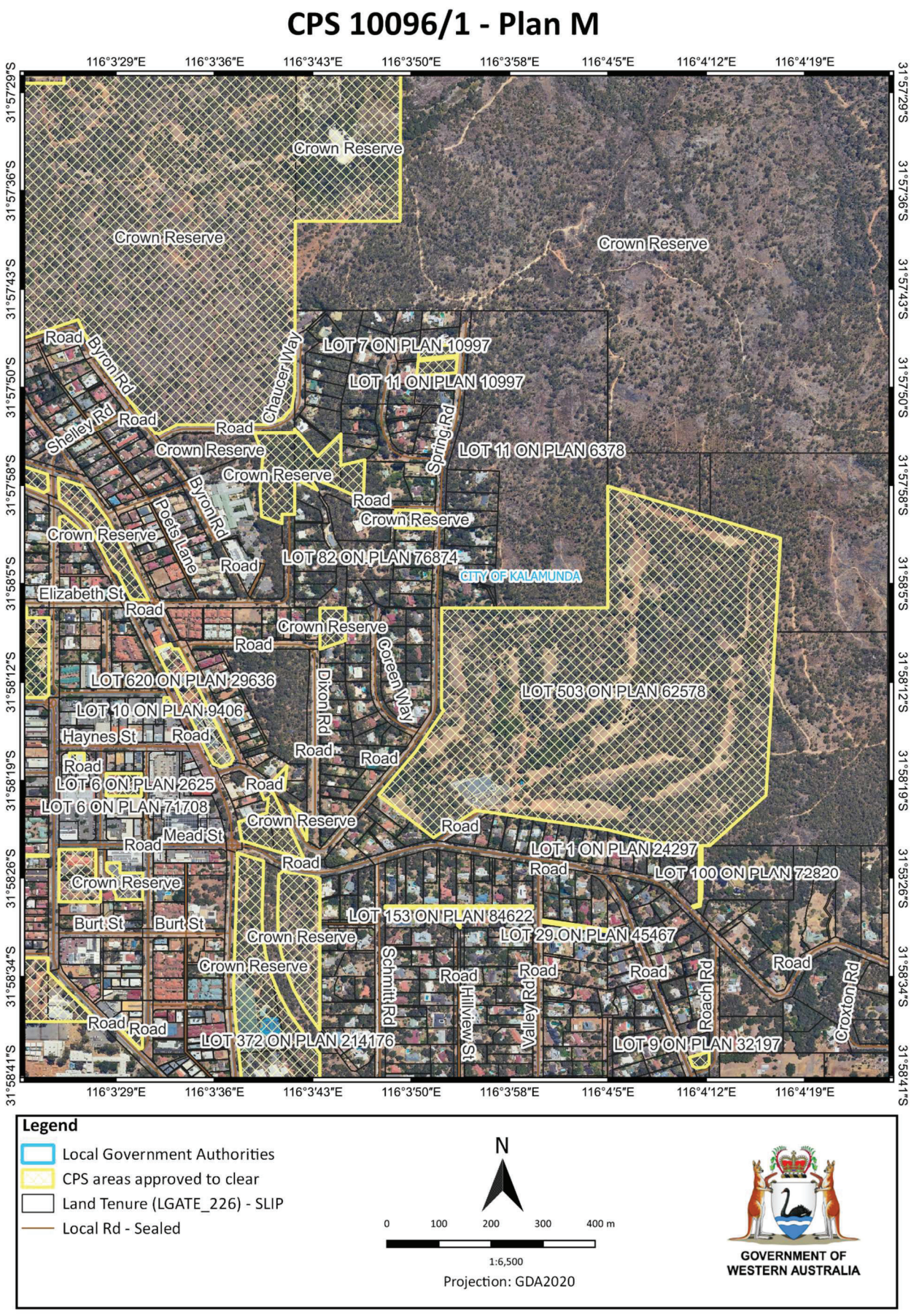


Figure 14 Map of the boundary of the area within which clearing may occur

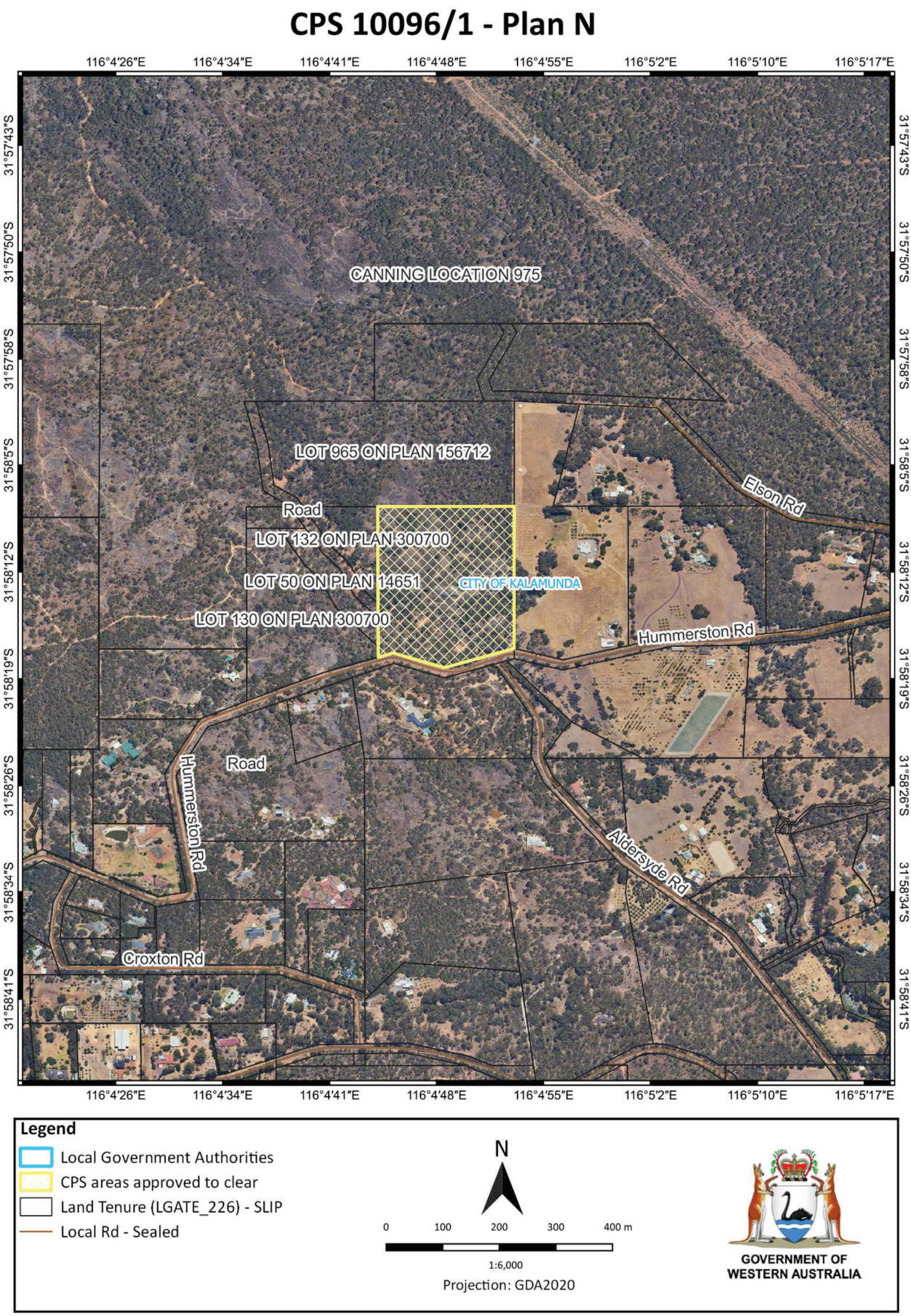


Figure 15 Map of the boundary of the area within which clearing may occur

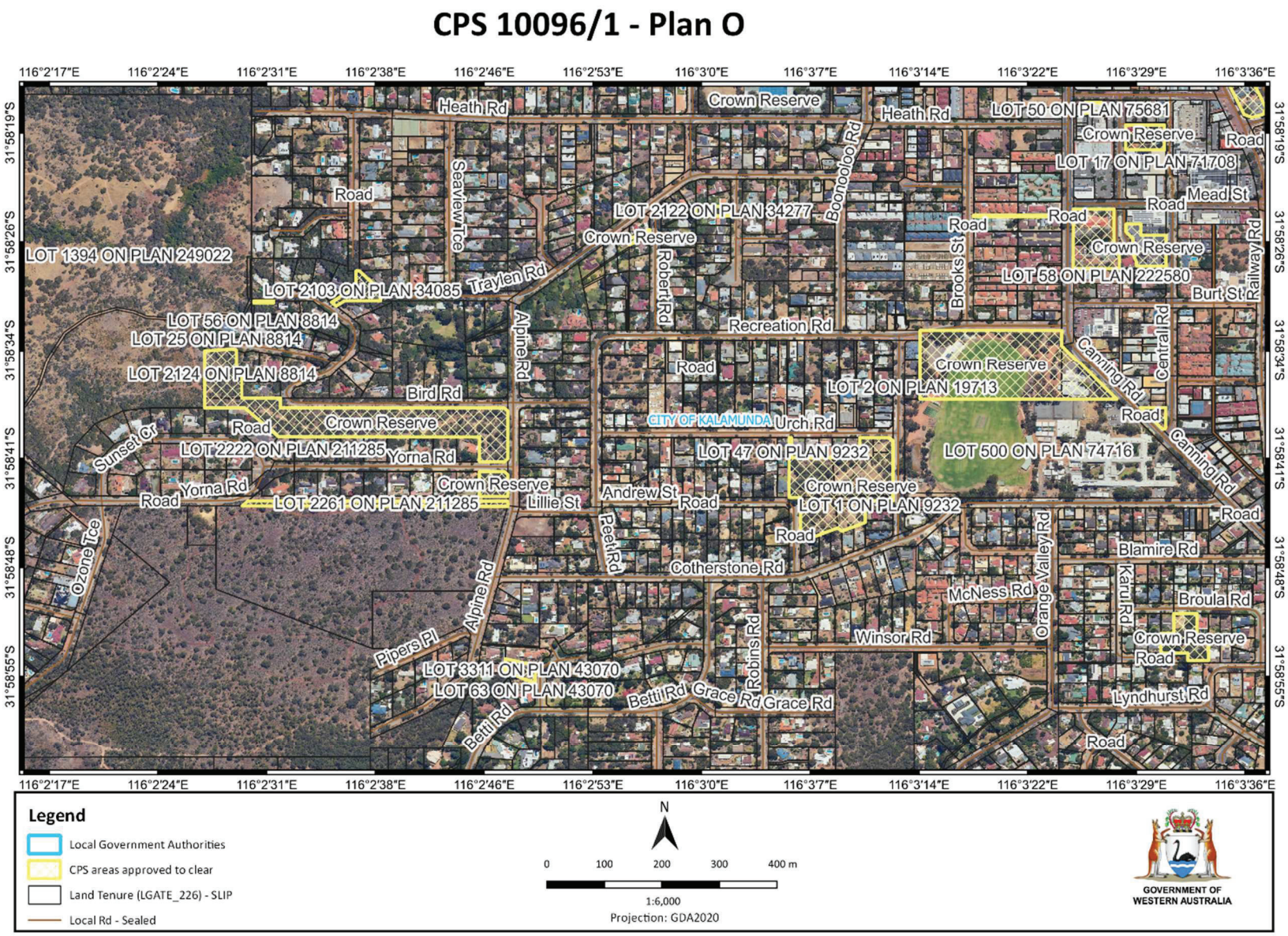


Figure 16 Map of the boundary of the area within which clearing may occur



Figure 17 Map of the boundary of the area within which clearing may occur



Figure 18 Map of the boundary of the area within which clearing may occur

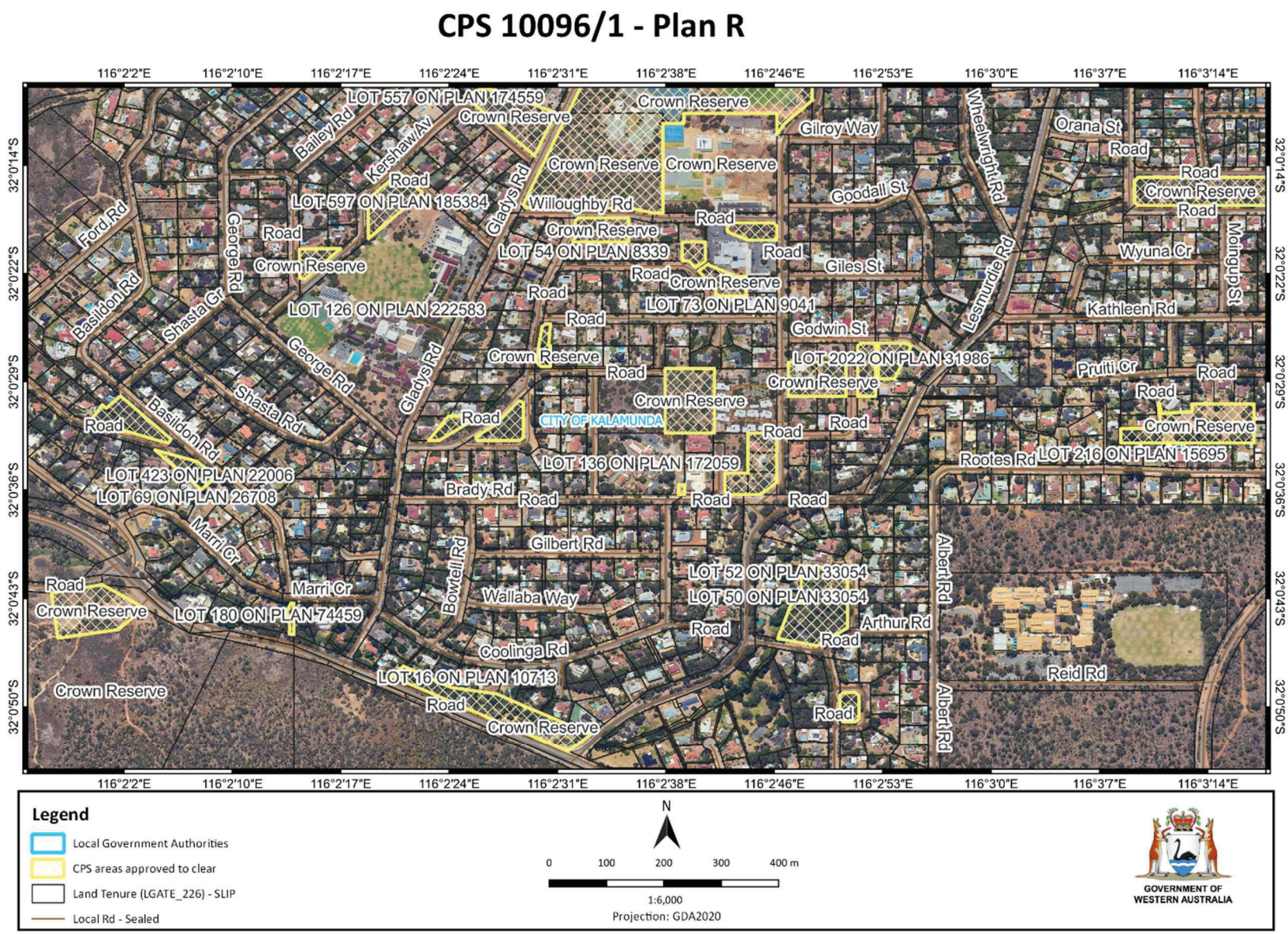


Figure 19 Map of the boundary of the area within which clearing may occur

CPS 10096/1 - Plan S

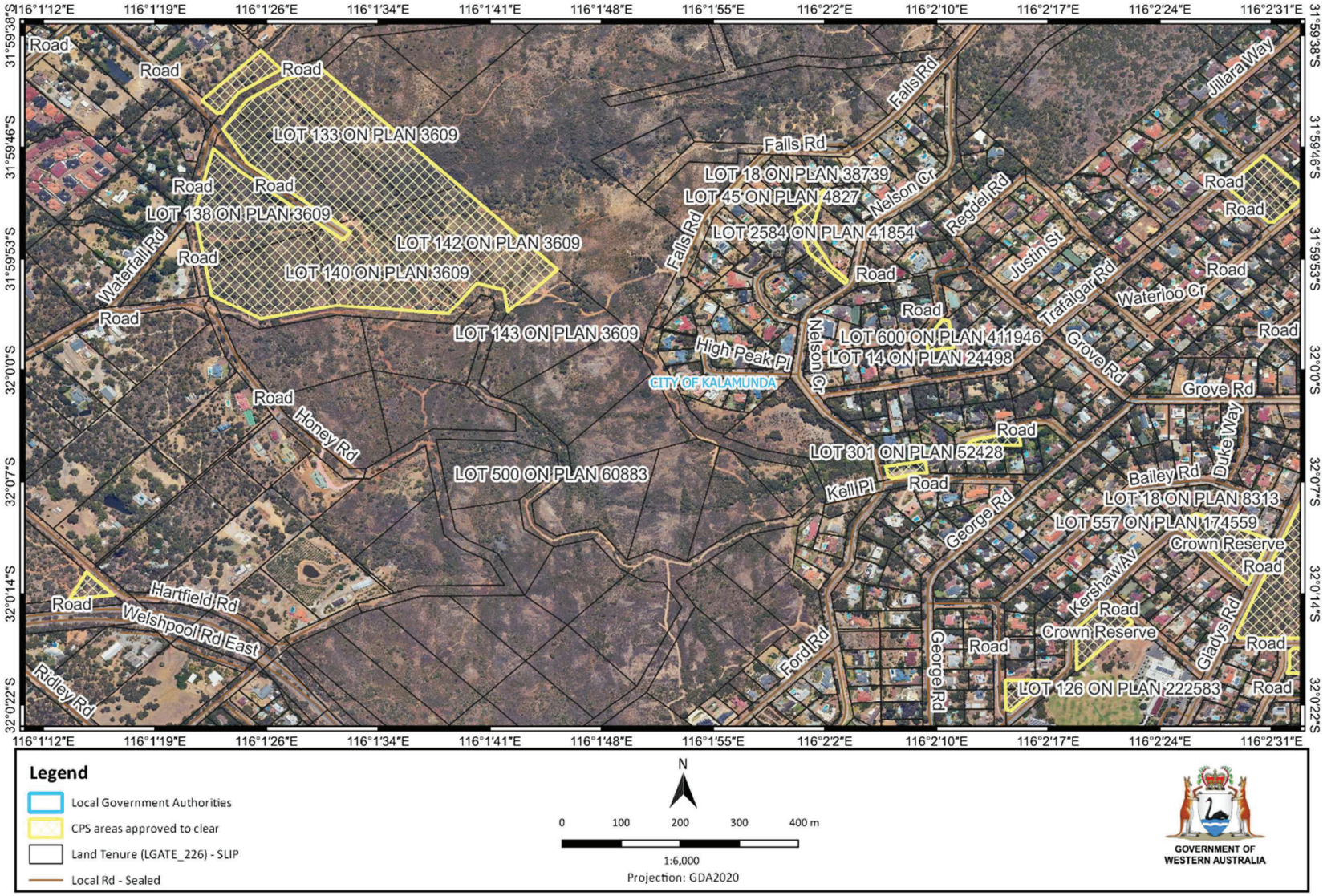


Figure 20 Map of the boundary of the area within which clearing may occur

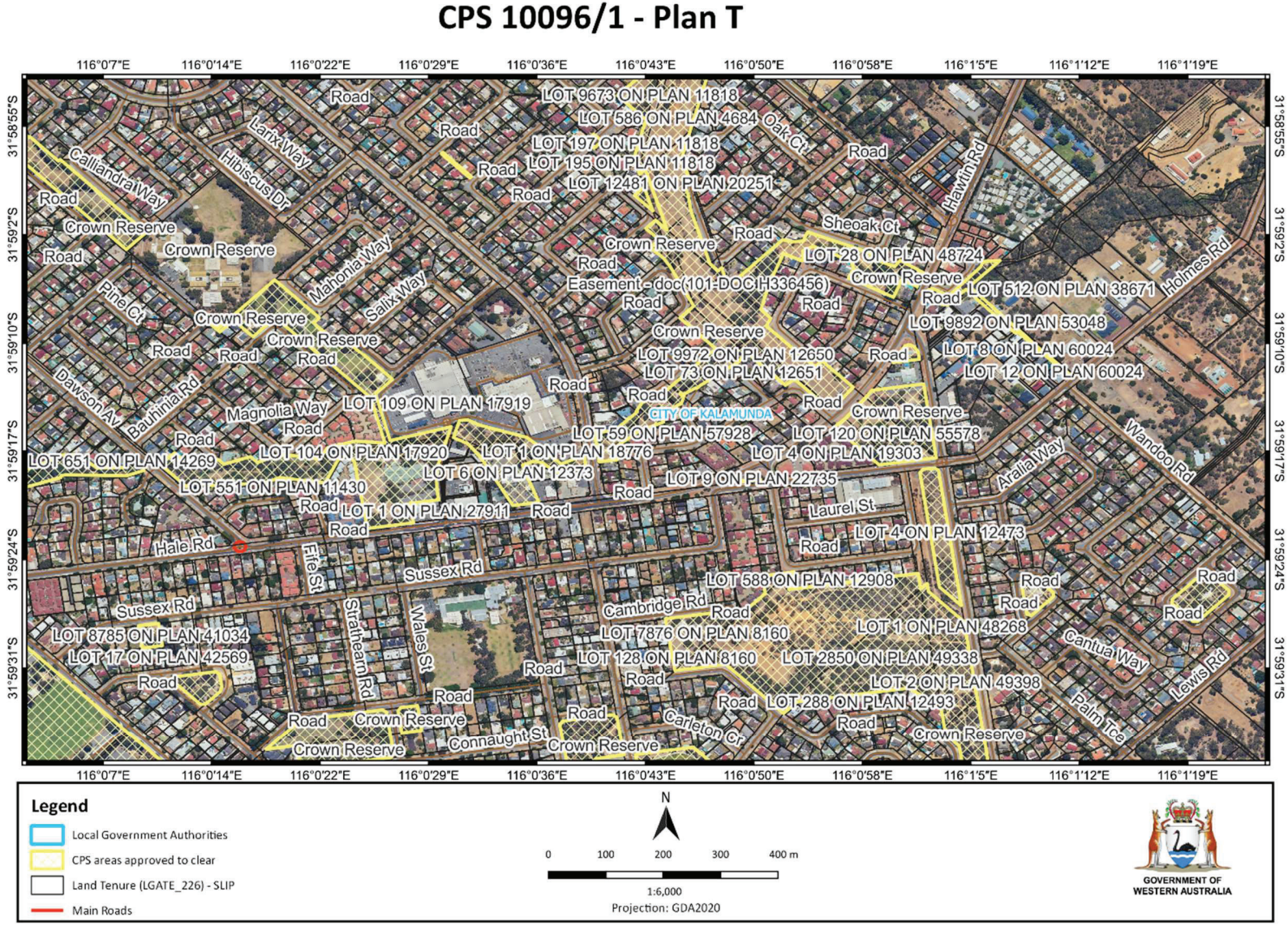


Figure 21 Map of the boundary of the area within which clearing may occur

CPS 10096/1 - Plan U



Figure 22 Map of the boundary of the area within which clearing may occur

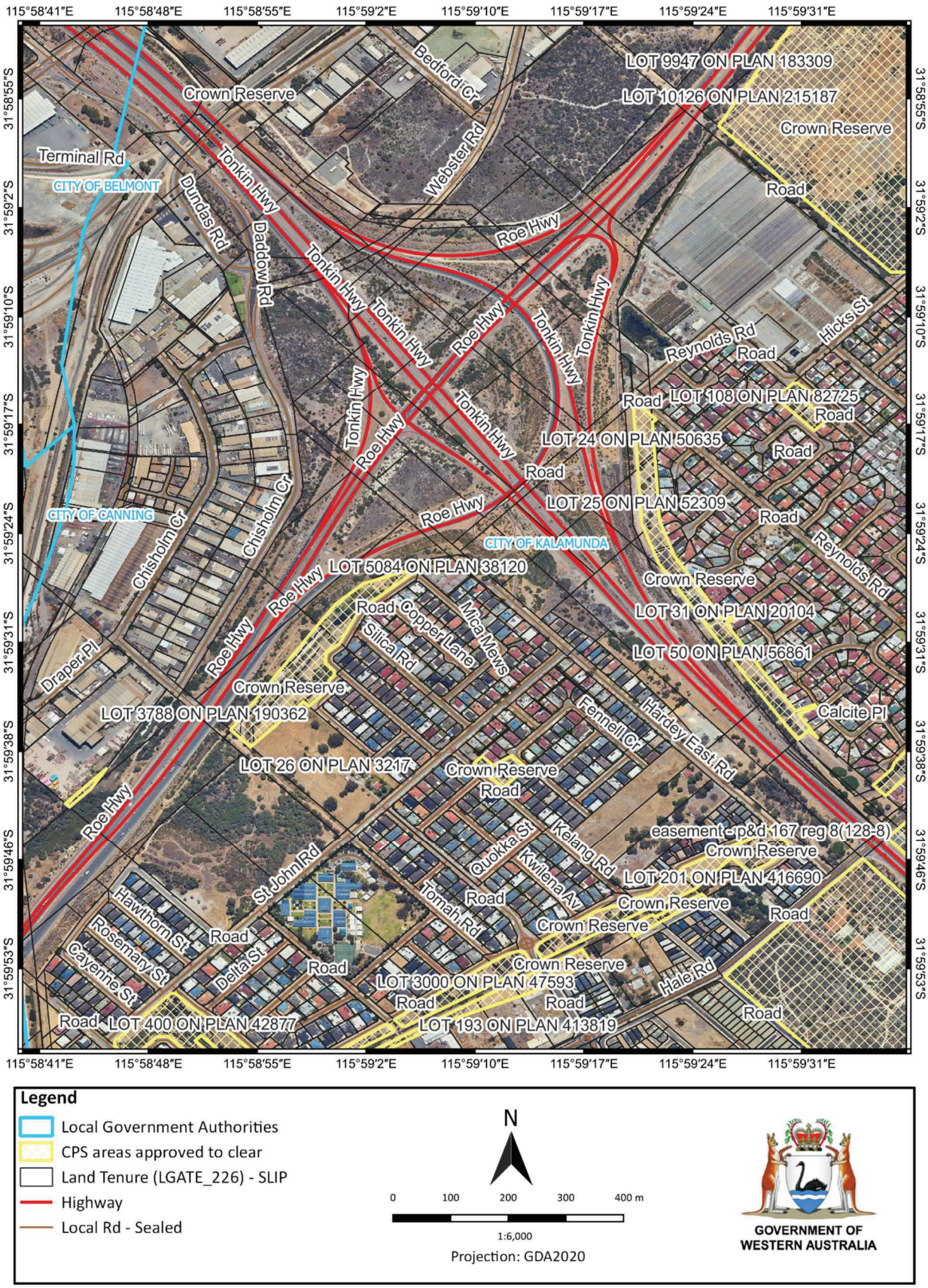


Figure 23 Map of the boundary of the area within which clearing may occur

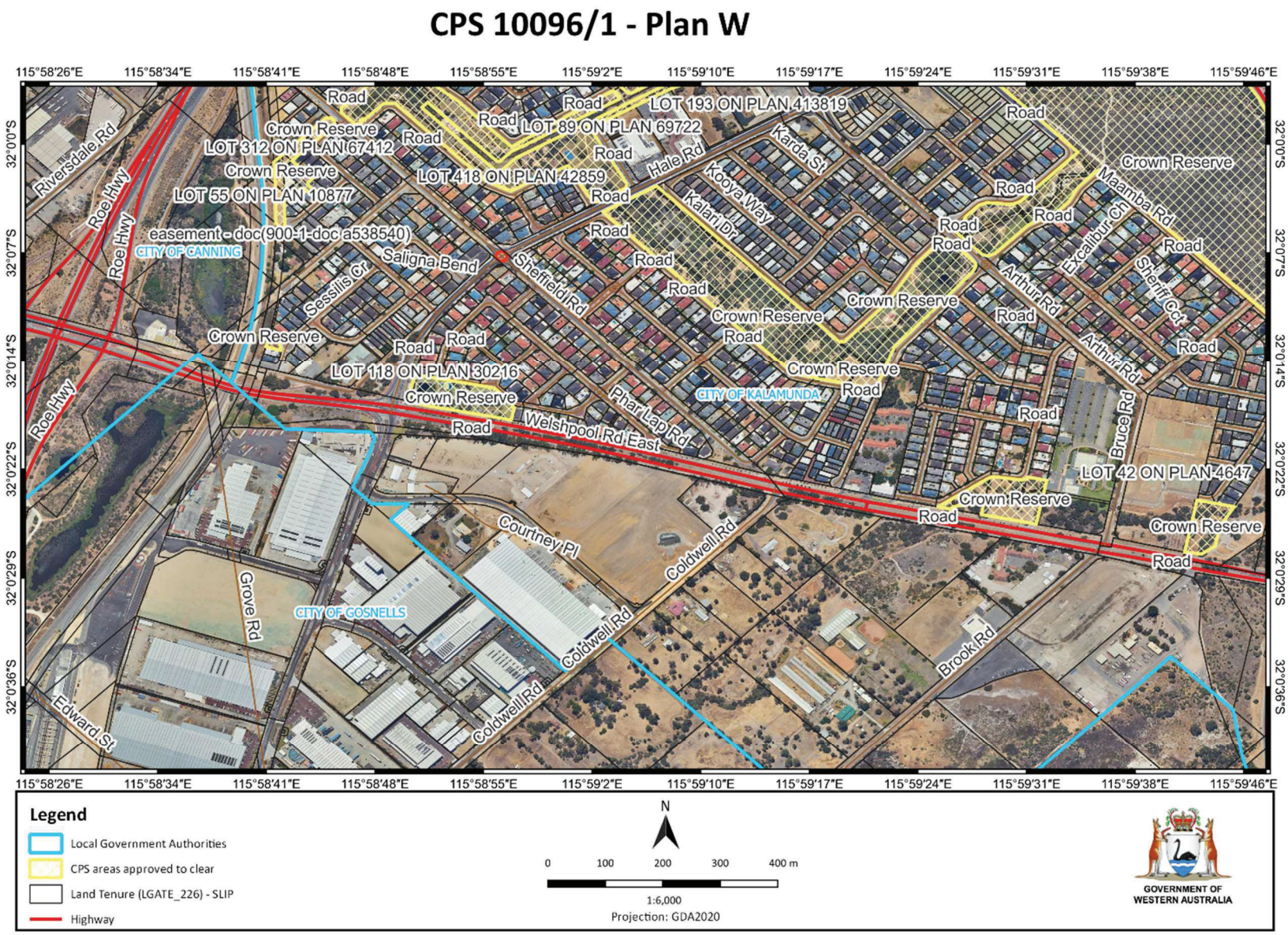


Figure 24 Map of the boundary of the area within which clearing may occur

CPS 10096/1 - Plan X



Figure 25 Map of the boundary of the area within which clearing may occur

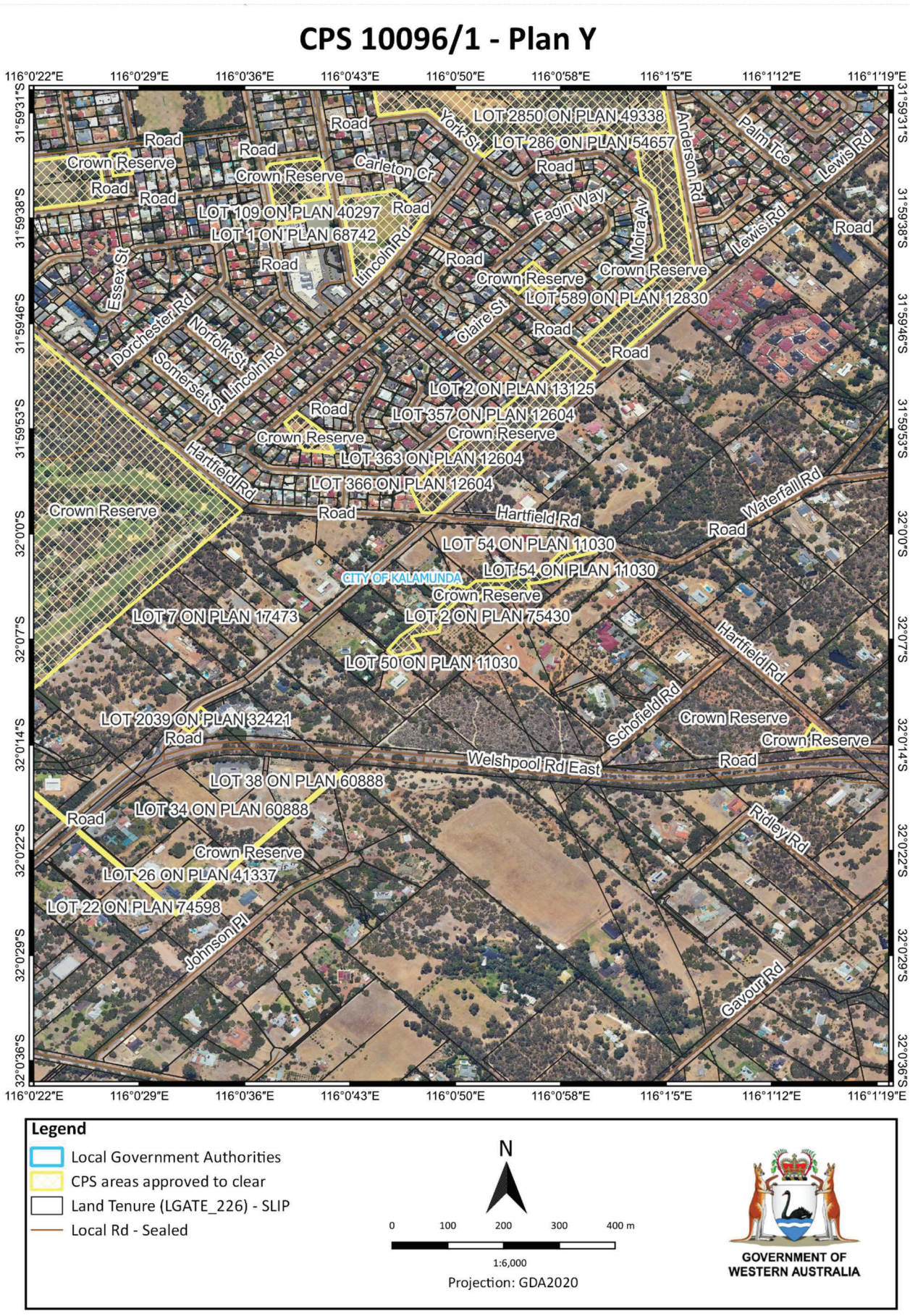


Figure 26 Map of the boundary of the area within which clearing may occur

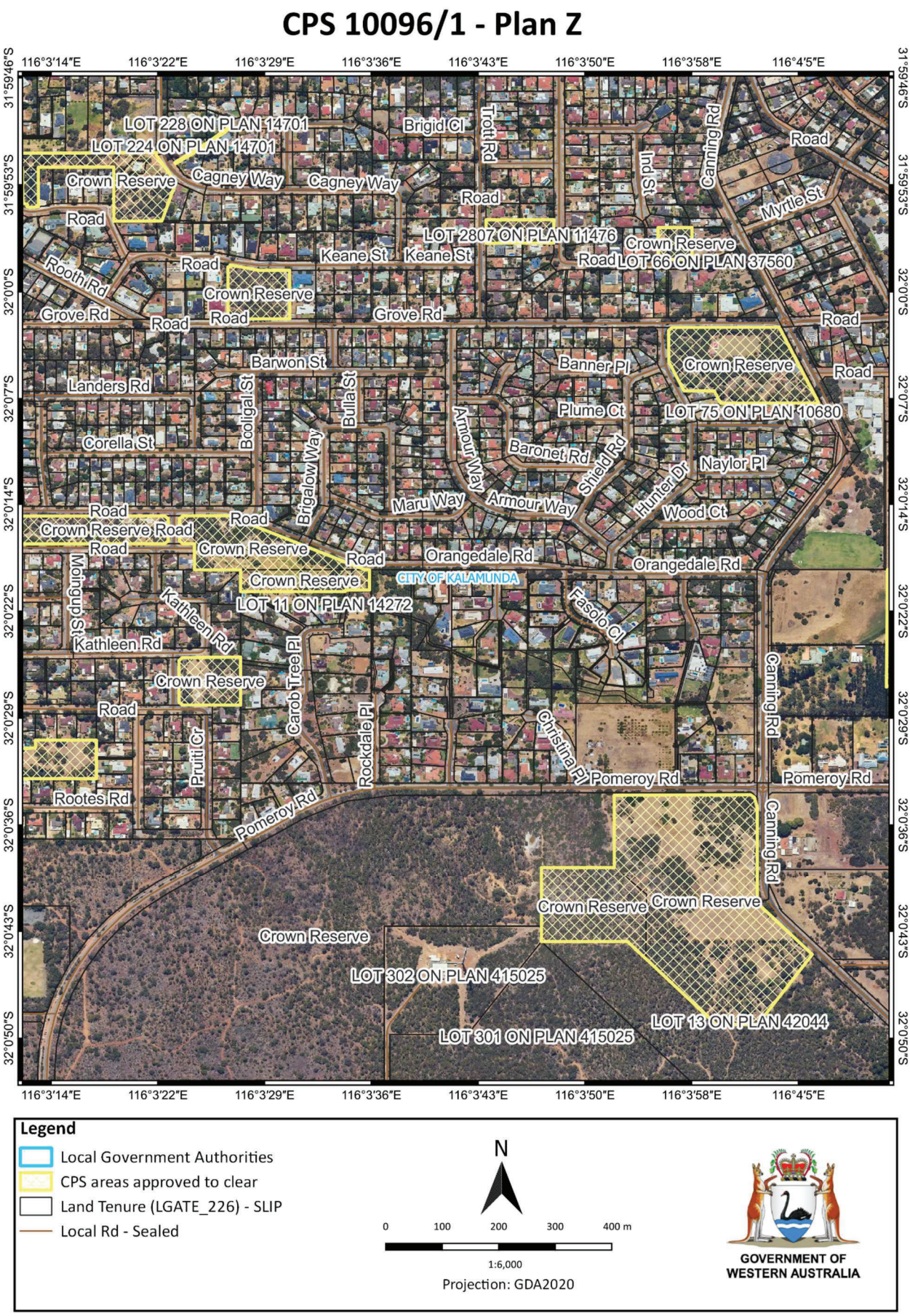


Figure 27 Map of the boundary of the area within which clearing may occur

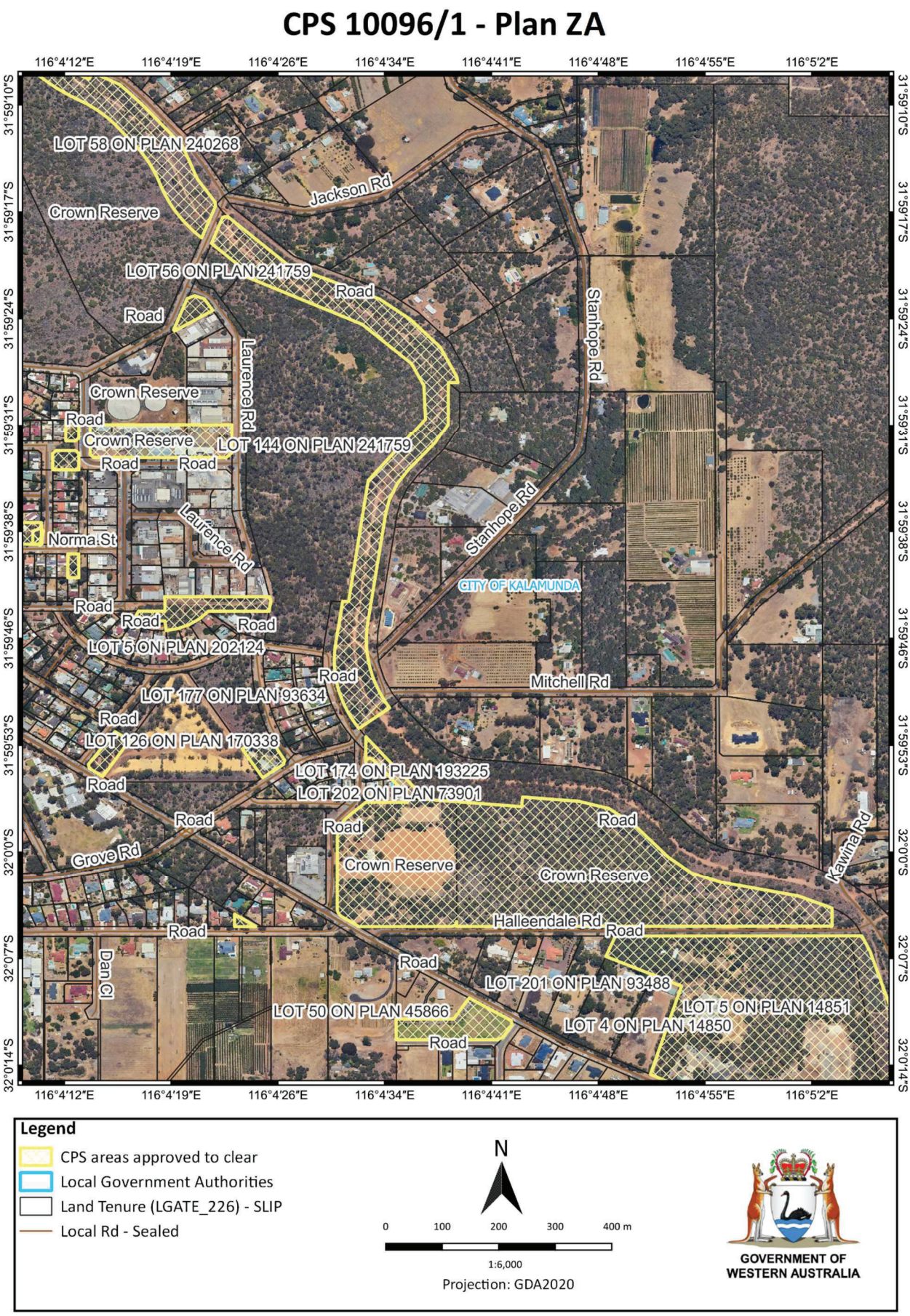


Figure 28 Map of the boundary of the area within which clearing may occur

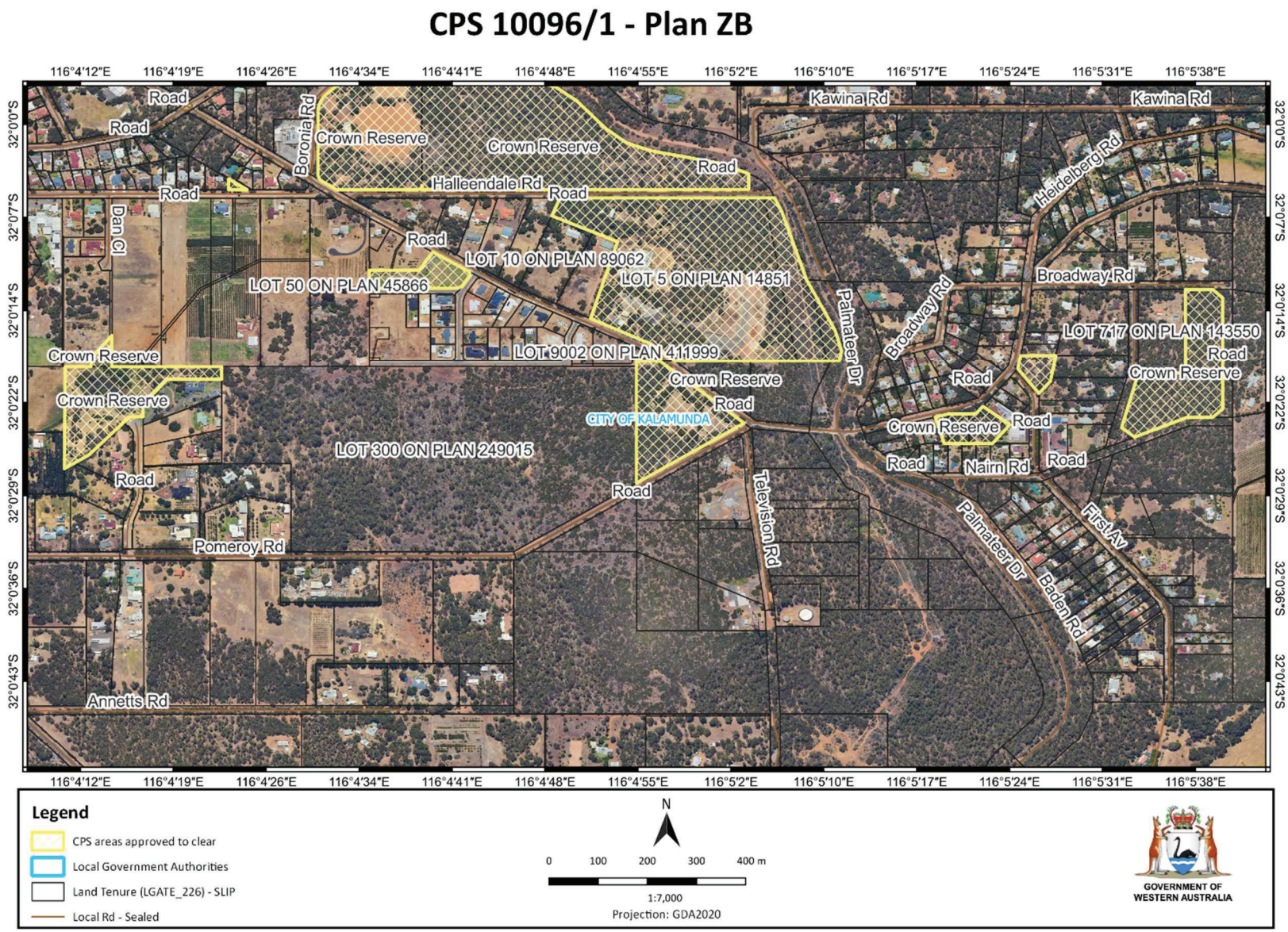


Figure 29 Map of the boundary of the area within which clearing may occur

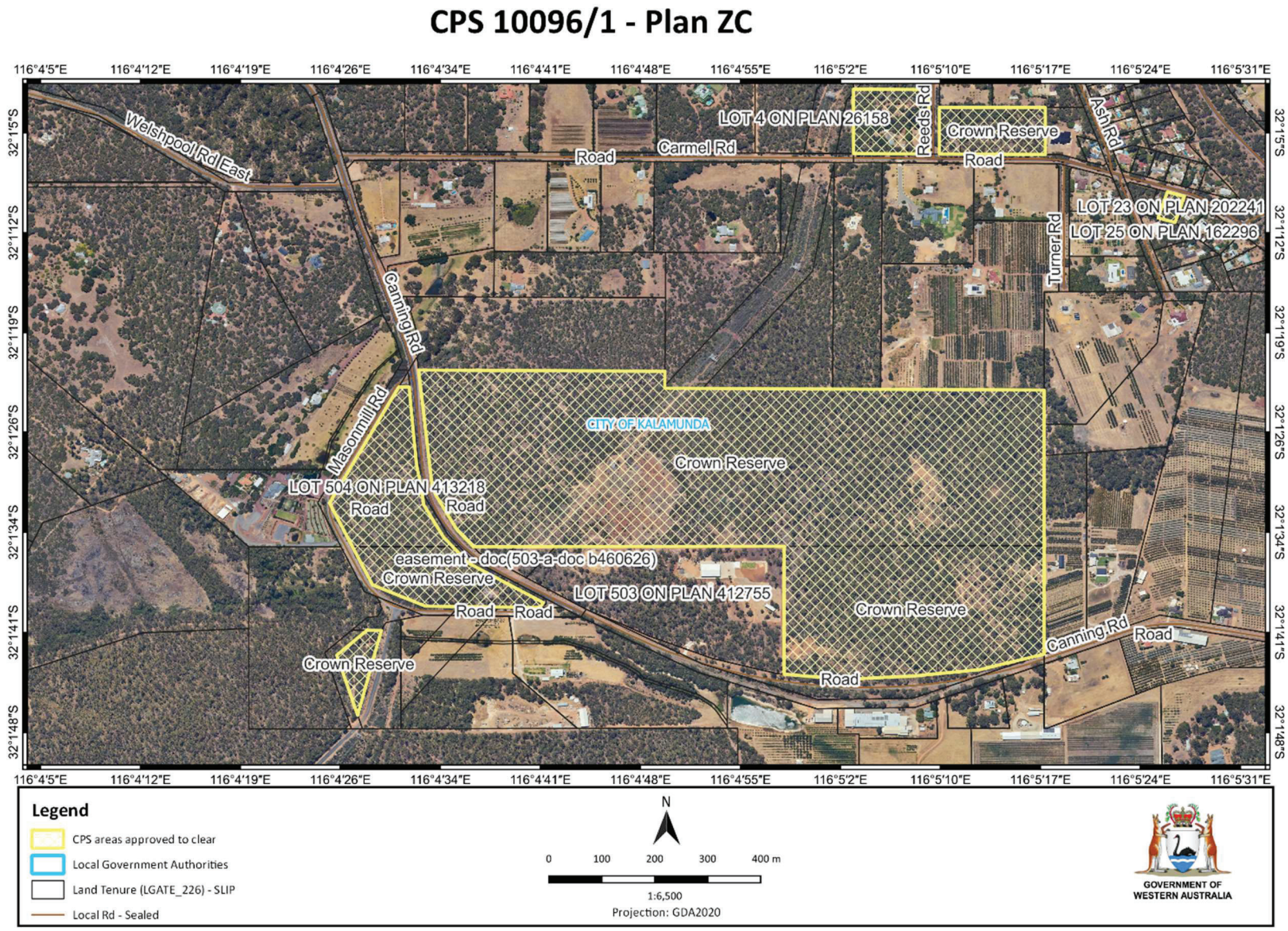


Figure 30 Map of the boundary of the area within which clearing may occur



Figure 31 Map of the boundary of the area within which clearing may occur

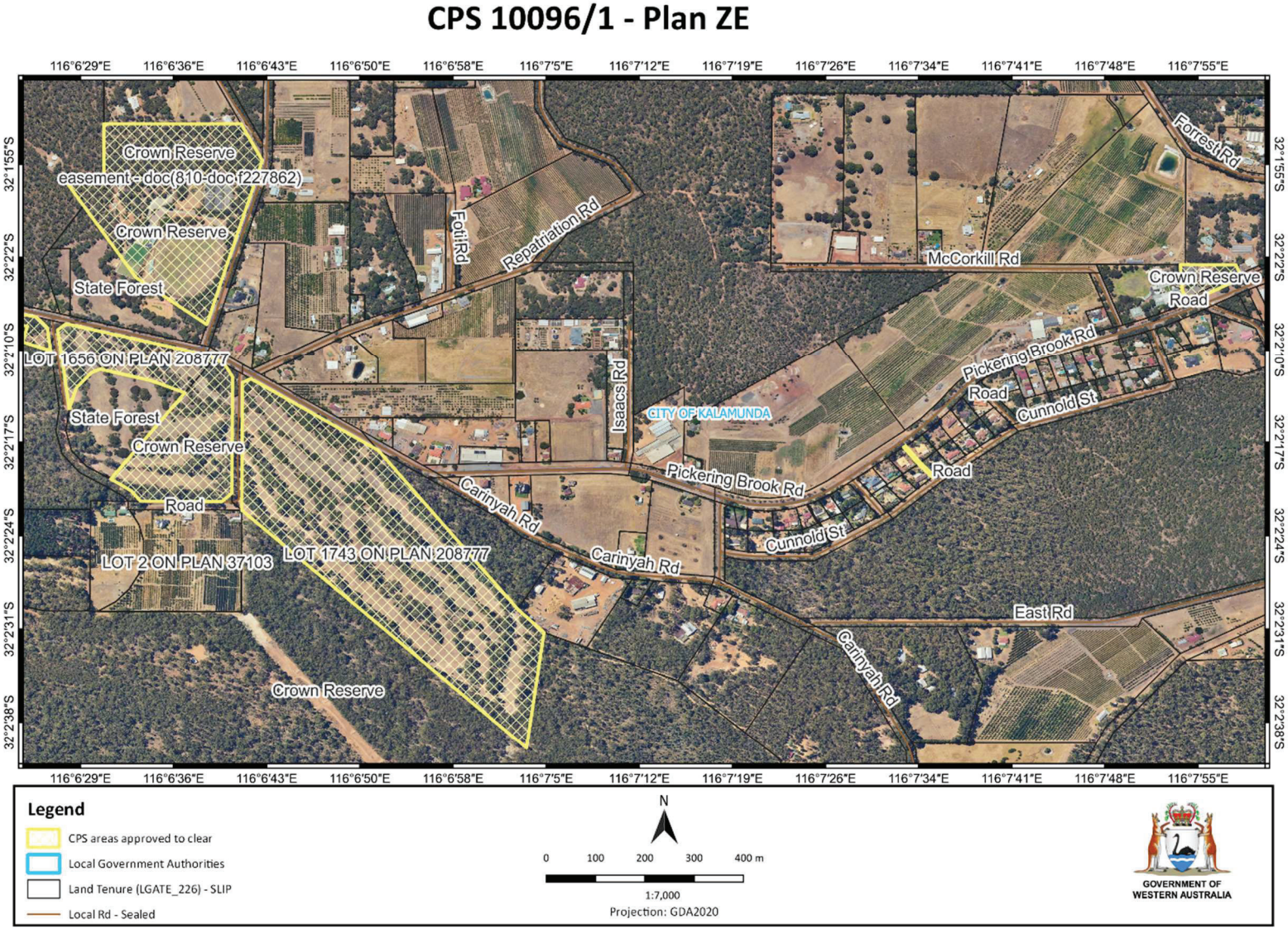


Figure 32 Map of the boundary of the area within which clearing may occur

Government of Western Australia
Department of Water and Environmental Regulation

Clearing Permit Decision Report

1 Application details and outcome

1.1. Permit application details

Permit number:	CPS 10096/1
Permit type:	Purpose permit
Applicant name:	City of Kalamunda
Application received:	1 March 2023
Application area:	5 hectares of native vegetation
Purpose of clearing:	Managing and controlling the spread of *Typha* species
Method of clearing:	Mechanical
Property:	Refer to Appendix A for list of properties
Location (LGA area/s):	City of Kalamunda
Localities (suburb/s):	Bickley, Carmel, Forrestfield, Gooseberry Hill, High Wycombe, Kalamunda, Kewdale, Lesmurdie, Maida Vale, Pickering Brook, Piesse Brook, Walliston and Wattle Grove

1.2. Description of clearing activities

The vegetation proposed to be cleared is spread across multiple watercourses within the City of Kalamunda (see Figure 1-32, Section 1.5). The application is to selectively clear 5 hectares of Typha species in a 1233 hectare footprint to allow for continuous water flow and native rehabilitation where suited. The clearing will involve mechanical removal, including cutting, ripping and slashing with chemical application to be applied if deemed safe (City of Kalamunda, 2023a).

1.3. Decision on application

Decision:	Granted
Decision date:	31 August 2023
Decision area:	5 hectares of native vegetation, as depicted in Section 1.5, below.

1.4. Reasons for decision

This clearing permit application was submitted, accepted, assessed and determined in accordance with sections 51E and 51O of the *Environmental Protection Act 1986* (EP Act). The Department of Water and Environmental Regulation (DWER) advertised the application for 21 days and no submissions were received.

In making this decision, the Delegated Officer had regard for the site characteristics (see Appendix B), relevant datasets (see Appendix F.1), the clearing principles set out in Schedule 5 of the EP Act (see **Error! Reference source not found.**), relevant planning instruments and any other matters considered relevant to the assessment (see Section 3). The Delegated Officer also took into consideration the purpose of clearing is to manage and control the spread of Typha species.

The assessment identified that the proposed clearing may result in:

- the loss of native vegetation that is suitable habitat for the Blue billed duck (*Oxyura australis*); and

- the potential introduction and spread of weeds and dieback into adjacent vegetation, which could impact on the quality of the adjacent vegetation and its habitat values.

After consideration of the available information, as well as the applicant's minimisation and mitigation measures (see Section 3.1), the Delegated Officer determined the proposed clearing can be minimised and managed to unlikely lead to appreciable land degradation or significant impacts to conservation significant fauna and flora.

The Delegated Officer decided to grant a clearing permit subject to conditions to:

- avoid, minimise to reduce the impacts and extent of clearing;
- take hygiene steps to minimise the risk of the introduction and spread of weeds and dieback;
- undertaking chemical weed spray and low water point and during calm conditions;
- undertake slow, progressive one directional clearing to allow fauna to move into adjacent habitat ahead of the clearing activity; and
- pre-clearing site inspections prior to works commencing and ongoing during works for any fauna that may be present. If found and not able to escape to adjacent habitat, the City of Kalamunda is to cease works until the identified fauna has been translocated.

1.5. Site map

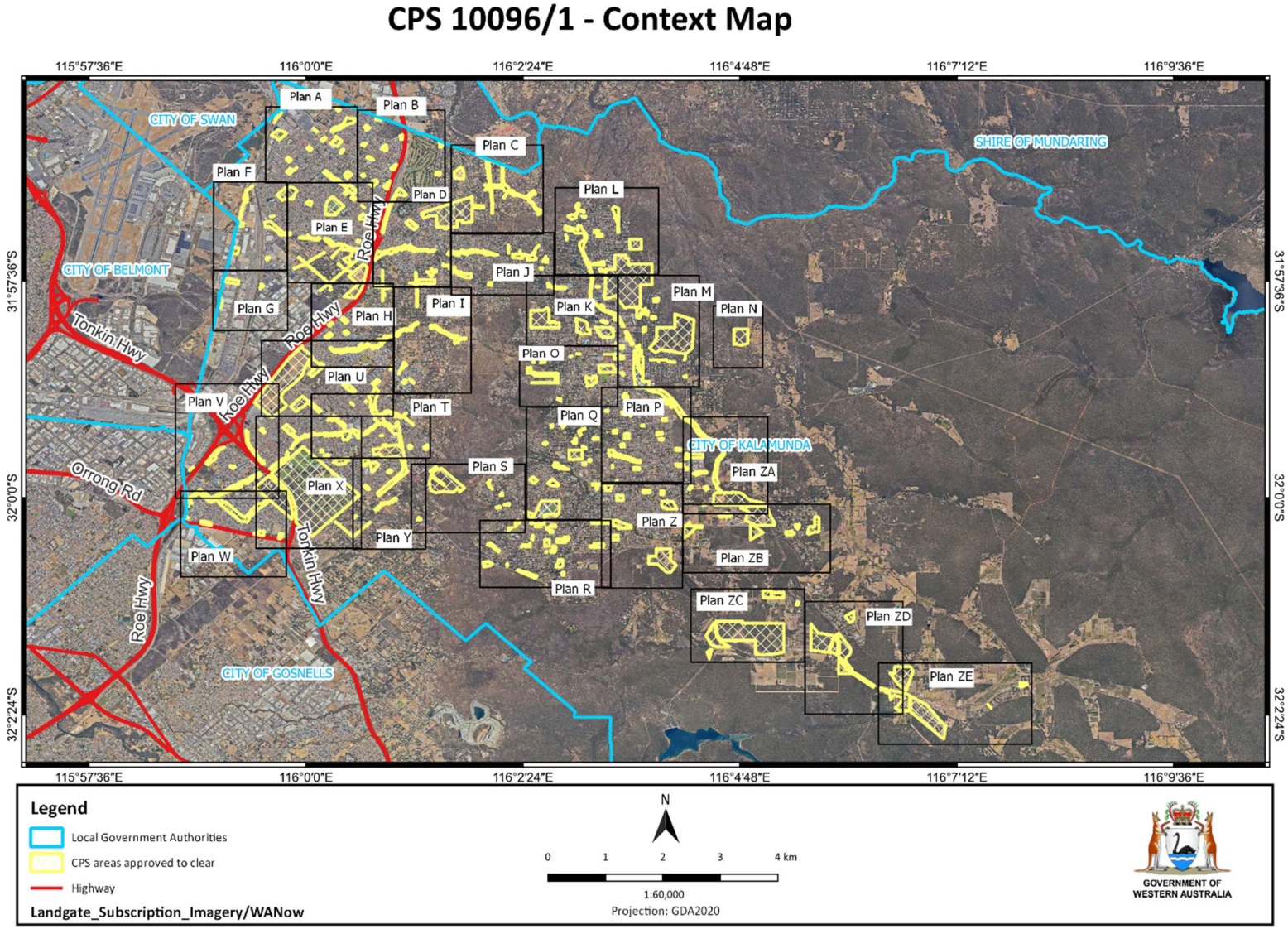


Figure 1 Context Map of the application area

The areas crosshatched yellow indicates the areas authorised to be cleared under the granted clearing permit.

CPS 10096/1 - Plan A

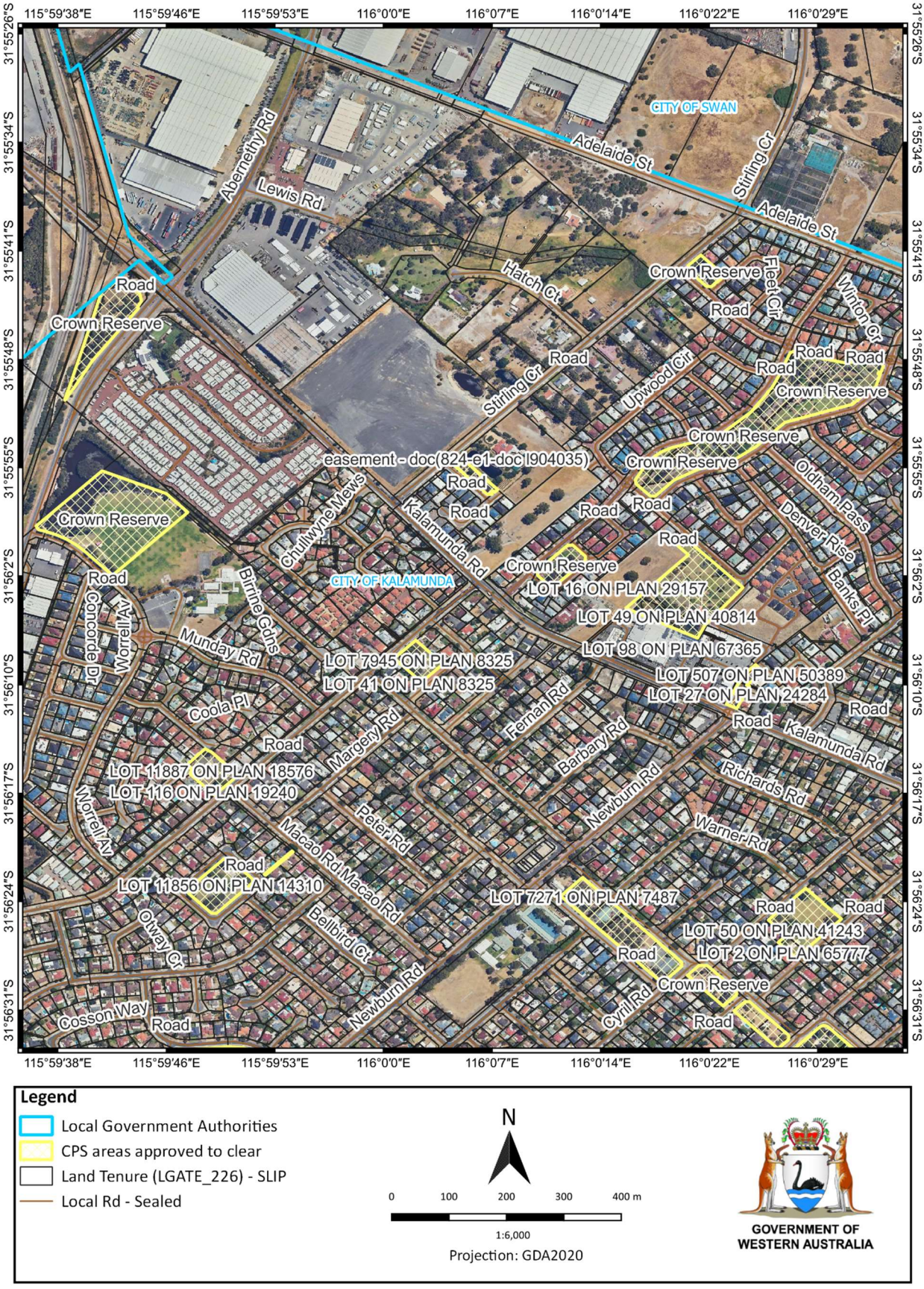
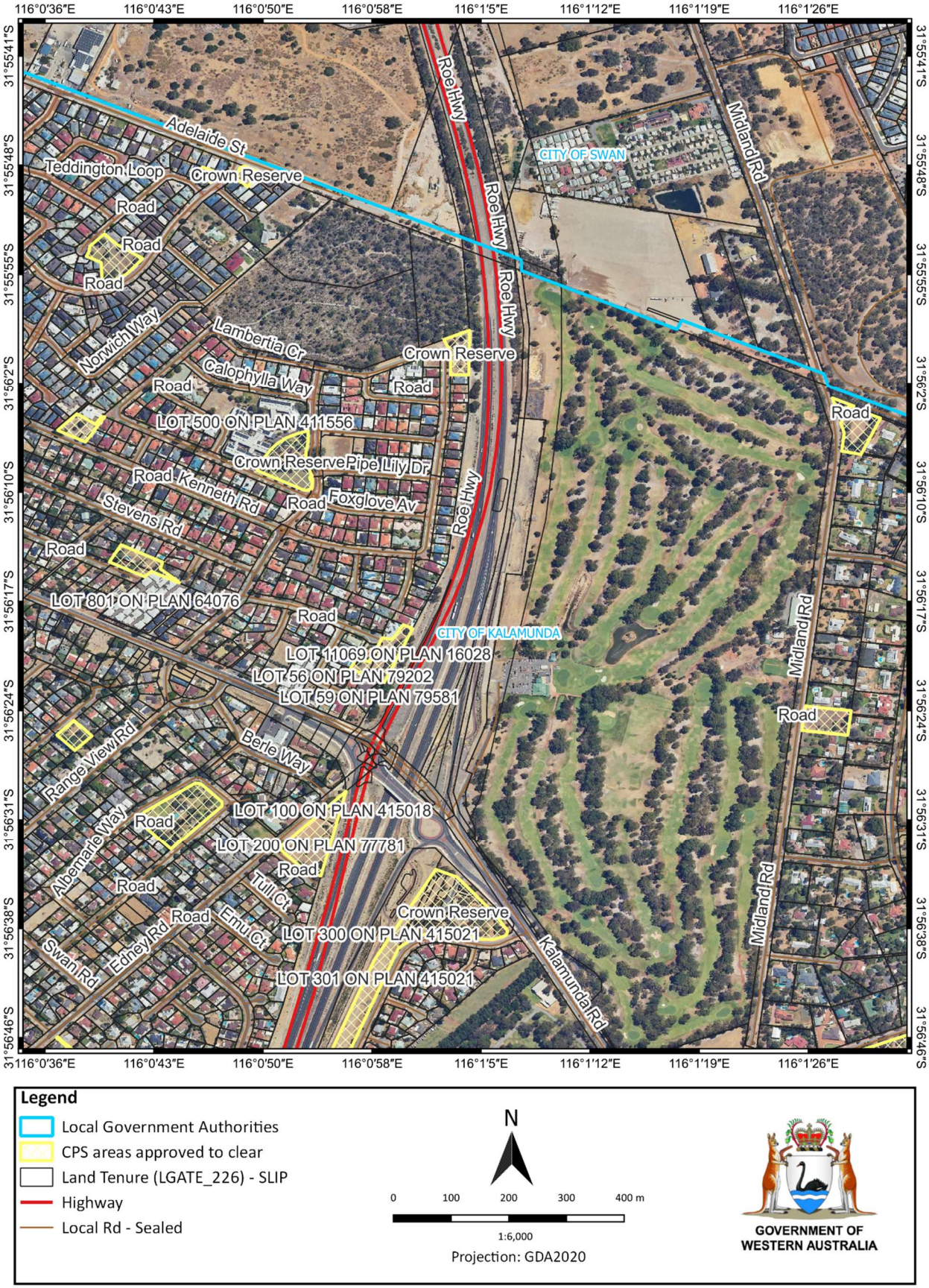


Figure 2 Plan A of the application area

The areas crosshatched yellow indicates the areas authorised to be cleared under the granted clearing permit.

CPS 10096/1 - Plan B



Legend

- Local Government Authorities
- CPS areas approved to clear
- Land Tenure (LGATE_226) - SLIP
- Highway
- Local Rd - Sealed

N

0 100 200 300 400 m

1:6,000

Projection: GDA2020

GOVERNMENT OF WESTERN AUSTRALIA

Figure 3 Plan B of the application area

The areas crosshatched yellow indicates the areas authorised to be cleared under the granted clearing permit.

CPS 10096/1 - Plan C

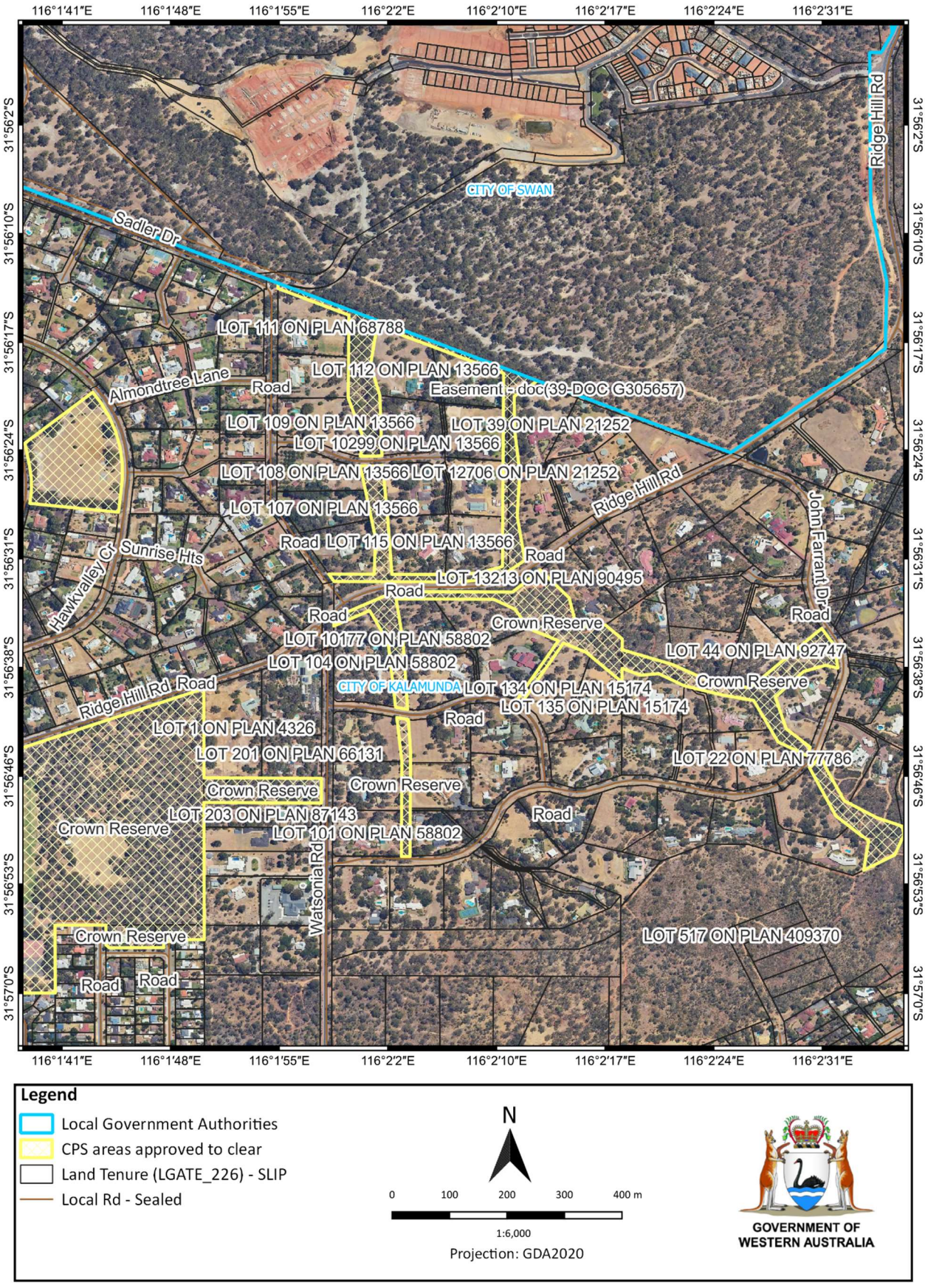


Figure 4 Plan C of the application area

The areas crosshatched yellow indicates the areas authorised to be cleared under the granted clearing permit.

CPS 10096/1 - Plan D

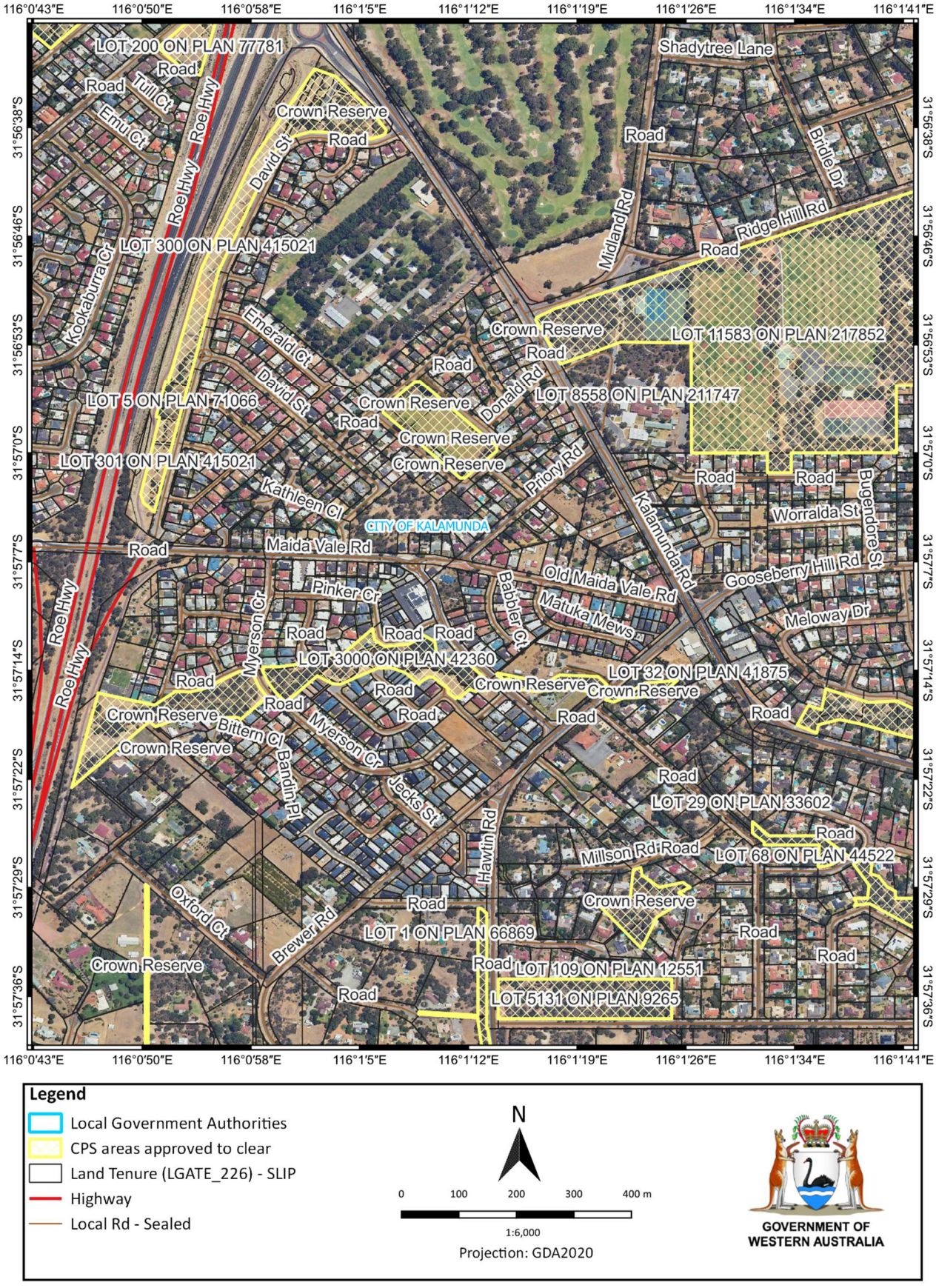


Figure 5 Plan D of the application area

The areas crosshatched yellow indicates the areas authorised to be cleared under the granted clearing permit.

CPS 10096/1 - Plan E

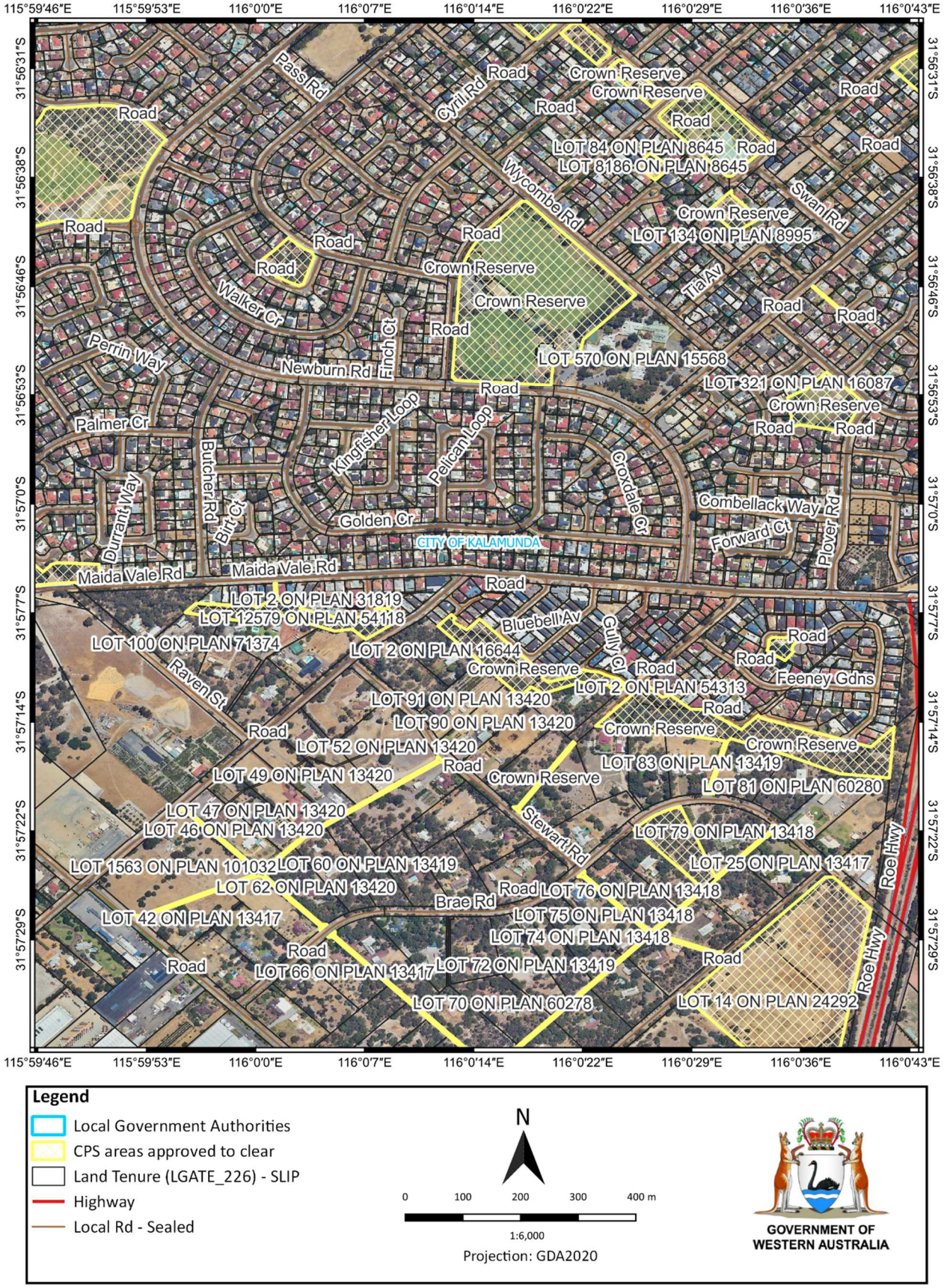


Figure 6 Plan E of the application area

The areas crosshatched yellow indicates the areas authorised to be cleared under the granted clearing permit.



Figure 7 Plan F of the application area

The areas crosshatched yellow indicates the areas authorised to be cleared under the granted clearing permit.

CPS 10096/1 - Plan G

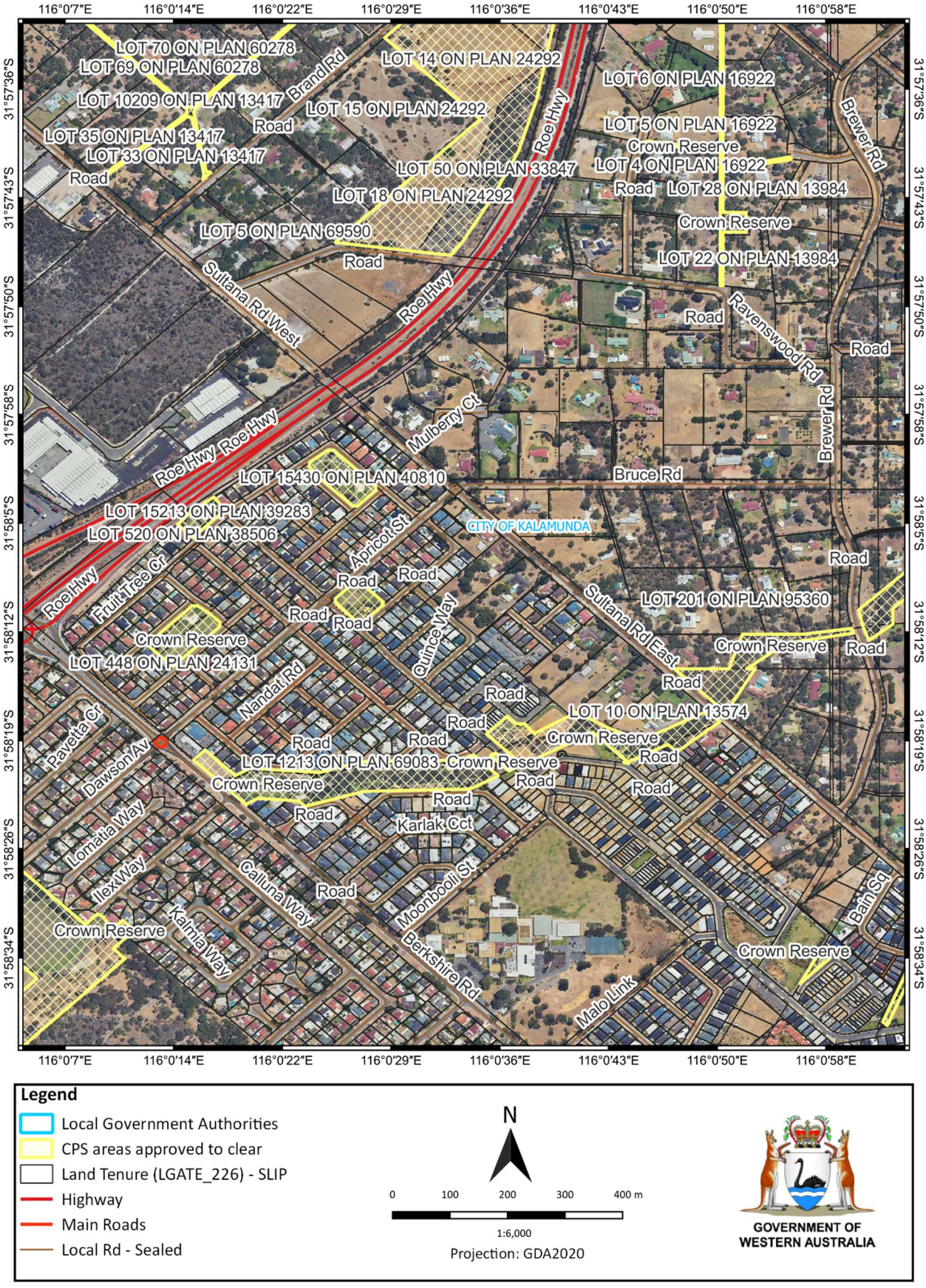


I

Figure 8 Plan G of the application area

The areas crosshatched yellow indicates the areas authorised to be cleared under the granted clearing permit.

CPS 10096/1 - Plan H


116°0'7"E
116°0'14"E
116°0'22"E
116°0'29"E
116°0'36"E
116°0'43"E
116°0'50"E
116°0'58"E
31°57'36"S
31°57'43"S
31°57'50"S
31°57'58"S
31°58'5"S
31°58'12"S
31°58'19"S
31°58'26"S
31°58'34"S
LOT 70 ON PLAN 60278
LOT 69 ON PLAN 60278
LOT 10209 ON PLAN 13417
LOT 35 ON PLAN 13417
LOT 33 ON PLAN 13417
Road
Brand Rd
LOT 14 ON PLAN 24292
LOT 15 ON PLAN 24292
Road
Roe Hwy
LOT 6 ON PLAN 16922
LOT 5 ON PLAN 16922
Crown Reserve
LOT 4 ON PLAN 16922
Road
LOT 28 ON PLAN 13984
Brewer Rd
LOT 50 ON PLAN 33847
LOT 18 ON PLAN 24292
LOT 5 ON PLAN 69590
Road
Crown Reserve
LOT 22 ON PLAN 13984
Sultana Rd West
Roe Hwy
Road
Ravenswood Rd
Road
Brewer Rd
Mulberry Ct
Roe Hwy
Roe Hwy
LOT 15430 ON PLAN 40810
Bruce Rd
LOT 15213 ON PLAN 39283
LOT 520 ON PLAN 38506
CITY OF KALAMUNDA
Apricot St
Roe Hwy
Fruit Tree Cr
Road
Road
Road
Road
Quince Way
Sultana Rd East
LOT 201 ON PLAN 95360
Road
Crown Reserve
Road
Crown Reserve
LOT 448 ON PLAN 24131
Nandat Rd
Road
Road
LOT 10 ON PLAN 13574
Crown Reserve
Road
Road
Road
Road

CPS 10096/1 - Plan I

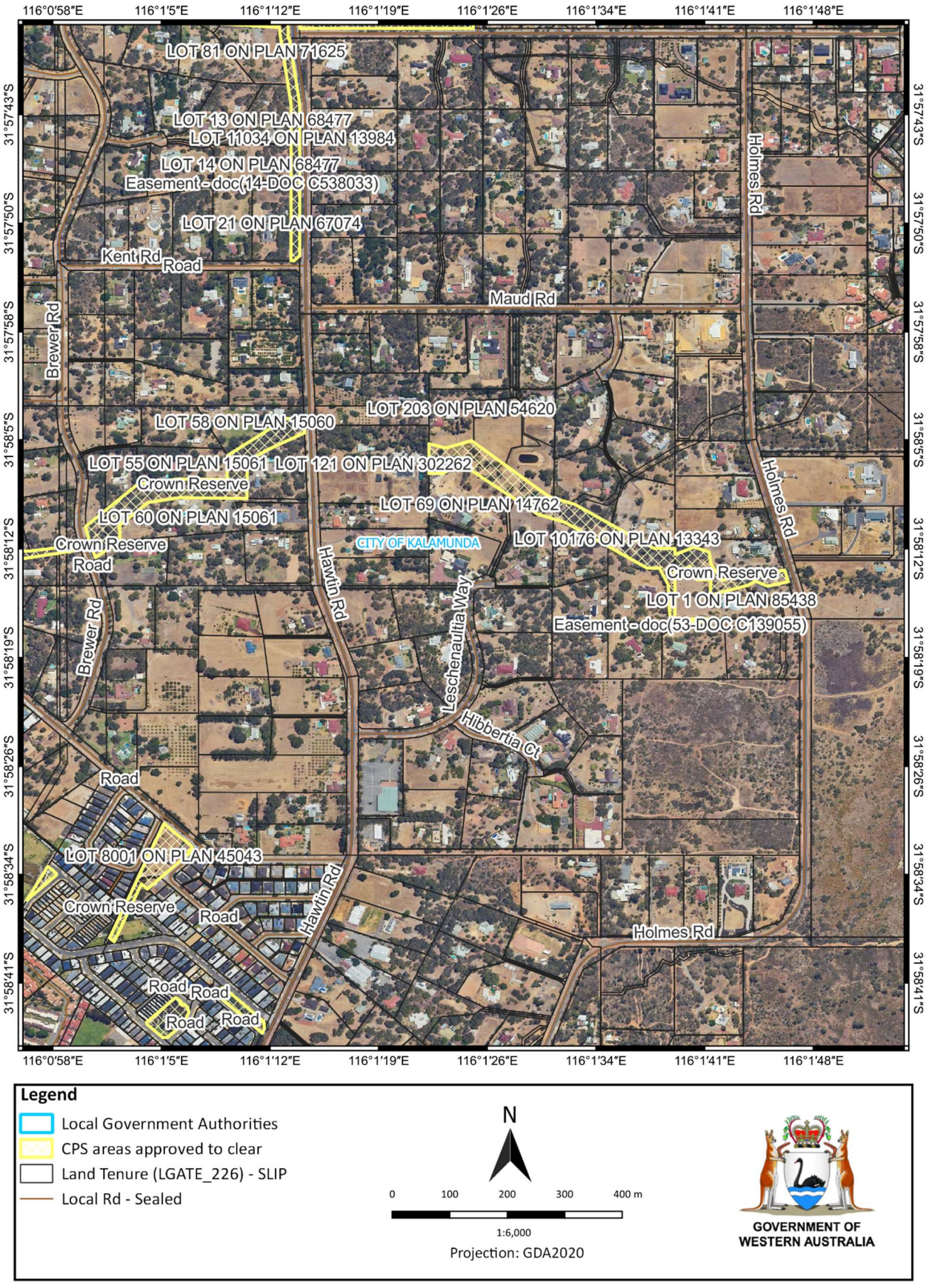


Figure 10 Plan I of the application area

The areas crosshatched yellow indicates the areas authorised to be cleared under the granted clearing permit.

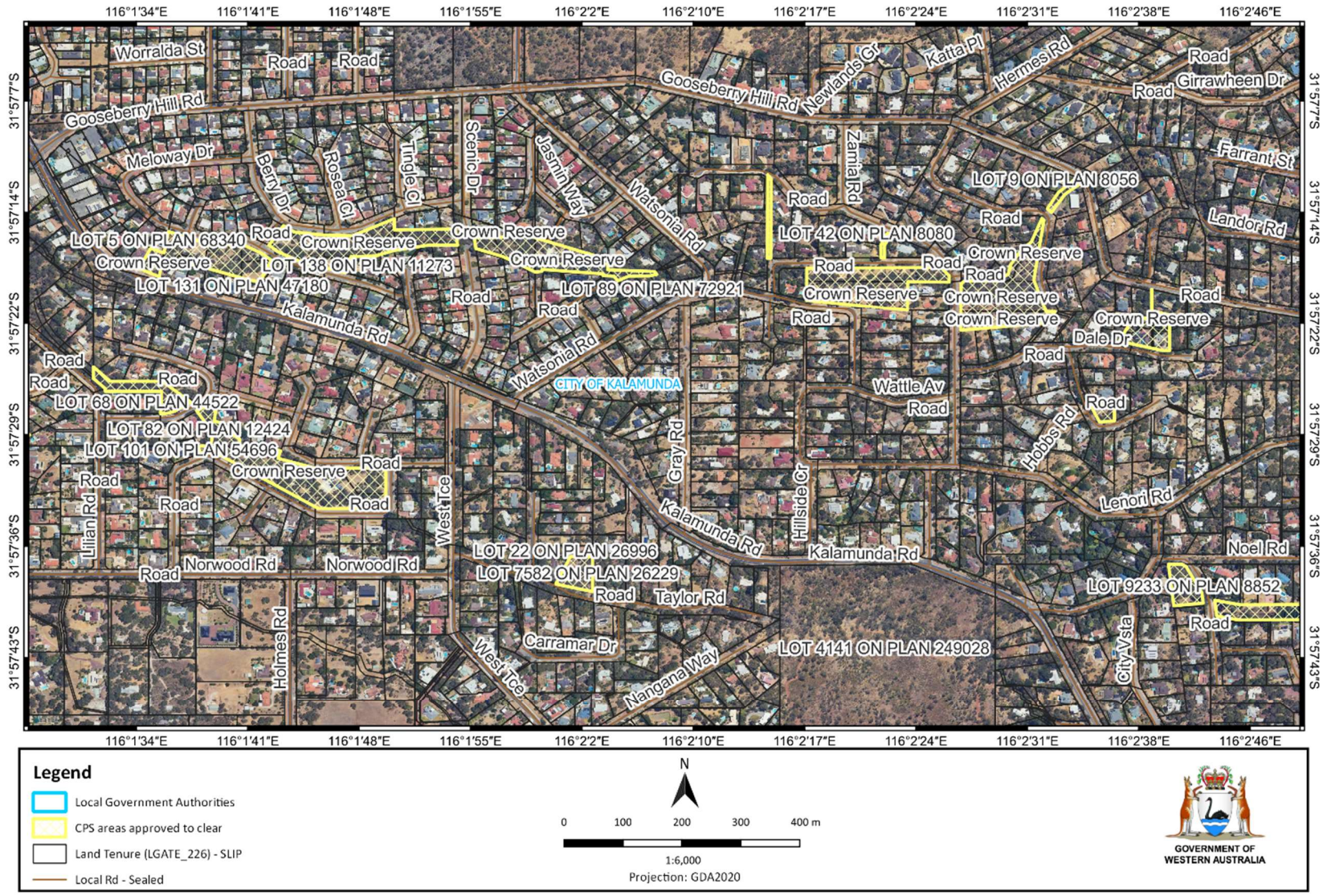


Figure 11 Plan J of the application area

The areas crosshatched yellow indicates the areas authorised to be cleared under the granted clearing permit.



Figure 12 Plan K of the application area

The areas crosshatched yellow indicates the areas authorised to be cleared under the granted clearing permit.



Figure 13 Plan L of the application area

The areas crosshatched yellow indicates the areas authorised to be cleared under the granted clearing permit.

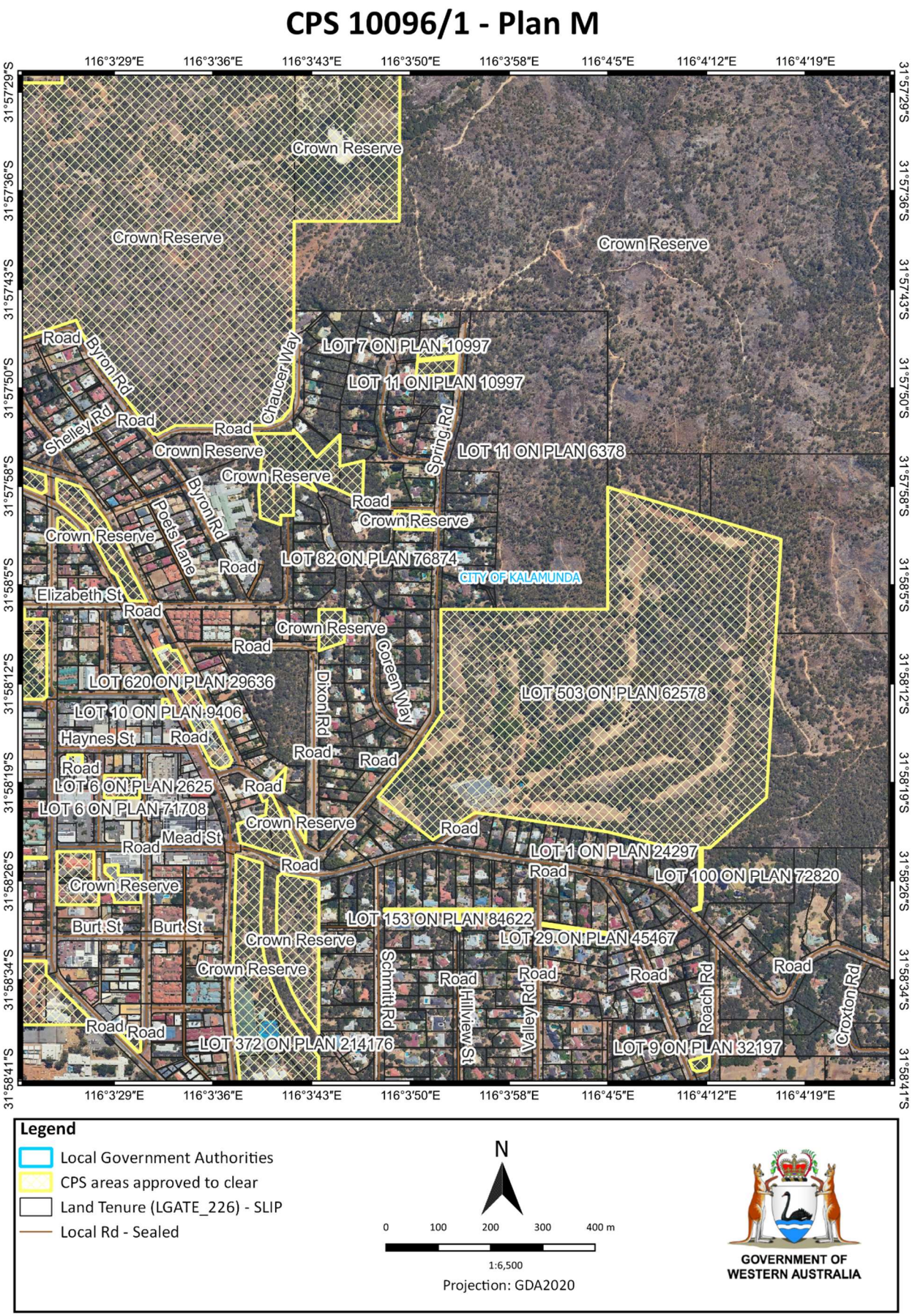


Figure 14 Plan M of the application area

The areas crosshatched yellow indicates the areas authorised to be cleared under the granted clearing permit.



Figure 15 Plan N of the application area

The areas crosshatched yellow indicates the areas authorised to be cleared under the granted clearing permit.

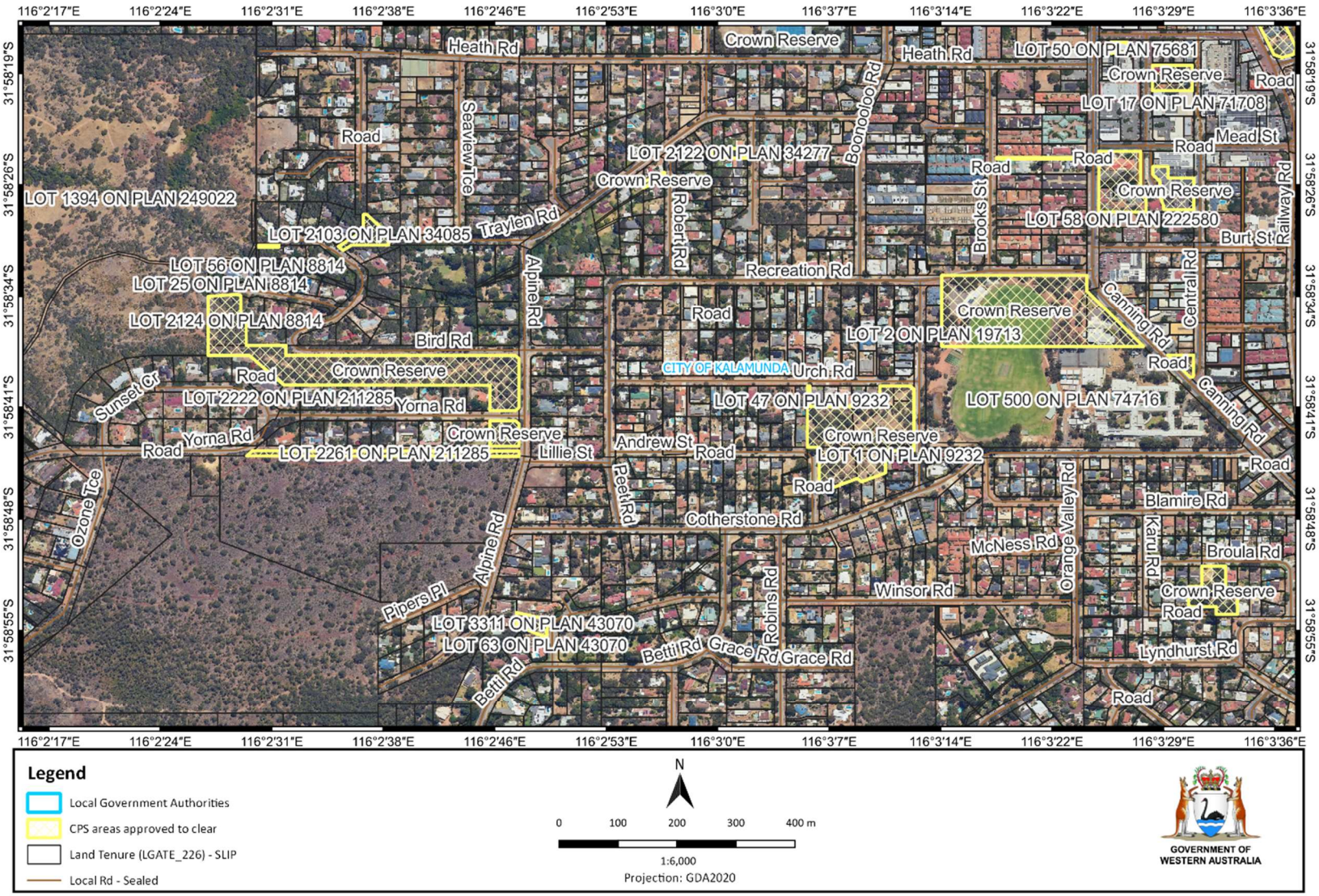


Figure 16 Plan O of the application area

The areas crosshatched yellow indicates the areas authorised to be cleared under the granted clearing permit.



Figure 17 Plan P of the application area

The areas crosshatched yellow indicates the areas authorised to be cleared under the granted clearing permit.

CPS 10096/1 - Plan Q

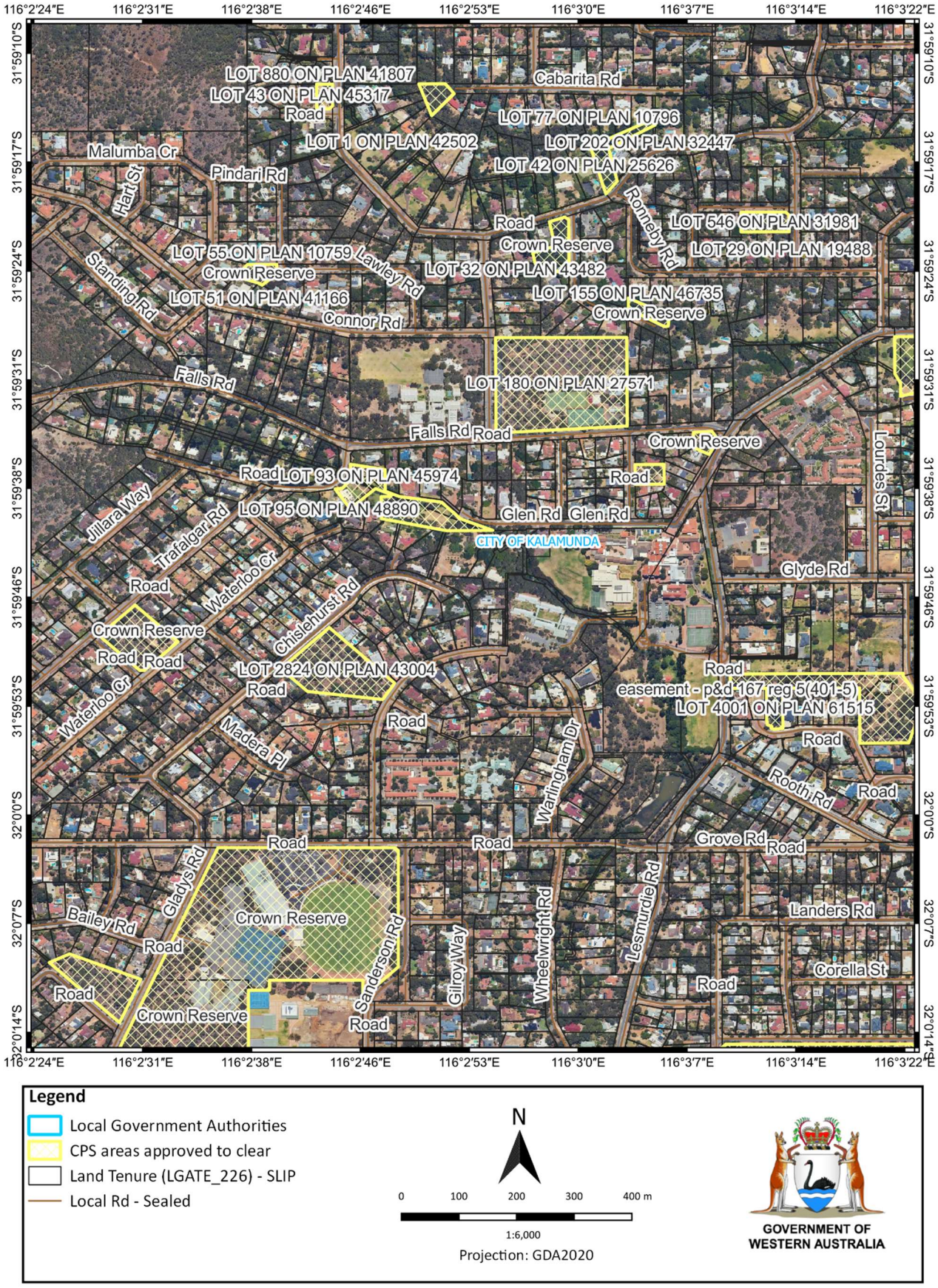


Figure 18 Plan Q of the application area

The areas crosshatched yellow indicates the areas authorised to be cleared under the granted clearing permit.

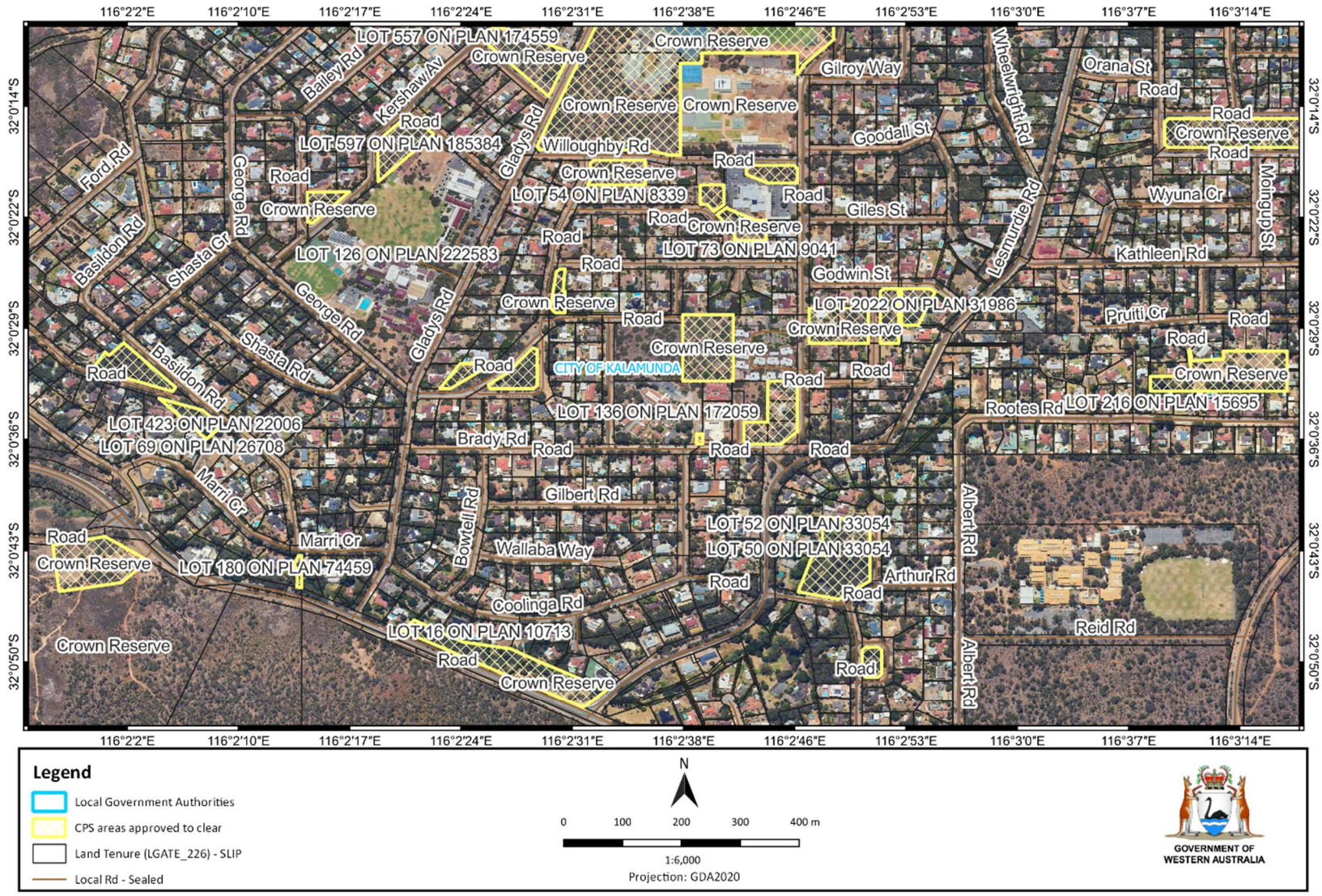


Figure 19 Plan R of the application area

The areas crosshatched yellow indicates the areas authorised to be cleared under the granted clearing permit.

CPS 10096/1 - Plan S

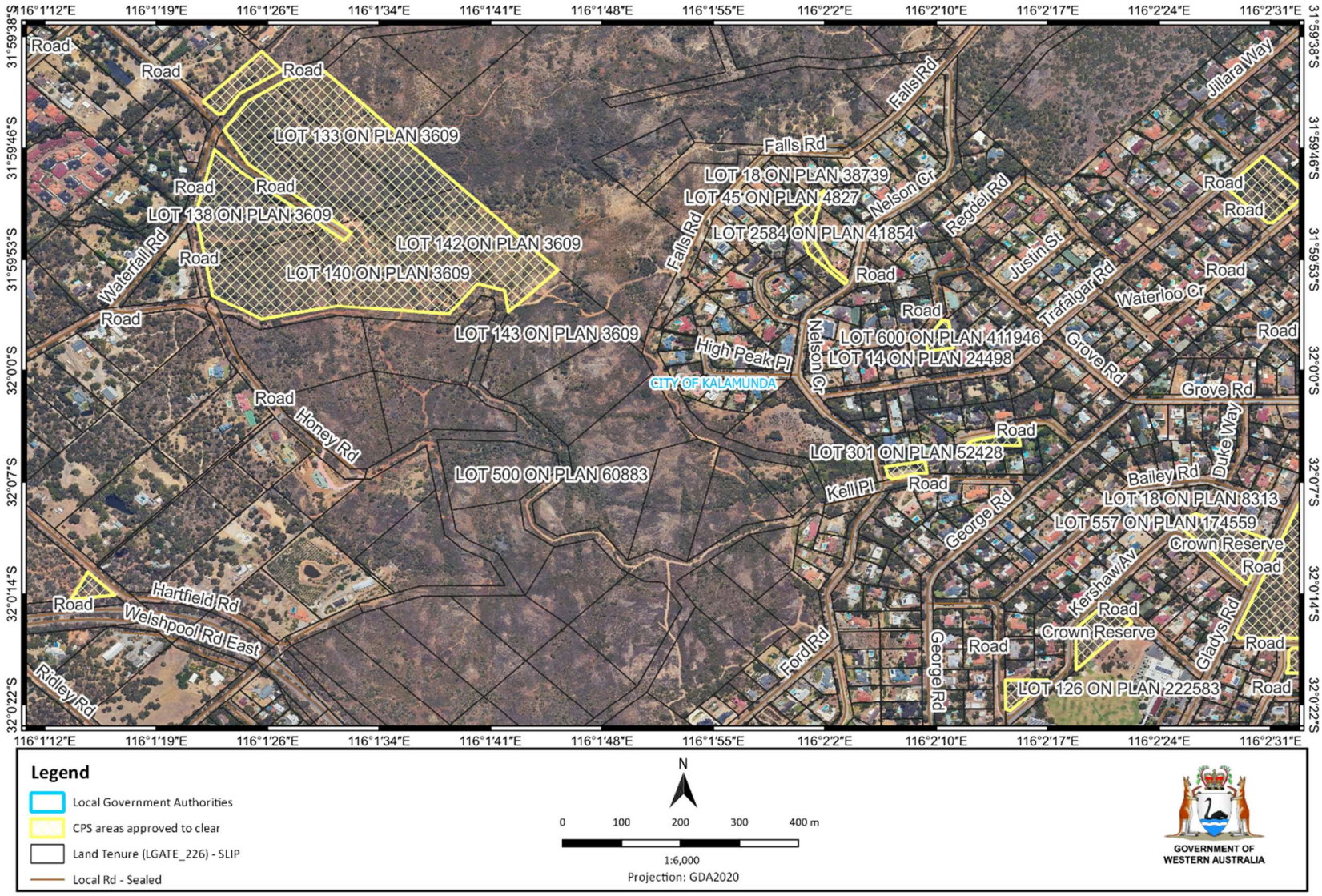


Figure 20 Plan S of the application area

The areas crosshatched yellow indicates the areas authorised to be cleared under the granted clearing permit.

CPS 10096/1 - Plan T



Figure 21 Plan T of the application area

The areas crosshatched yellow indicates the areas authorised to be cleared under the granted clearing permit.

CPS 10096/1 - Plan U

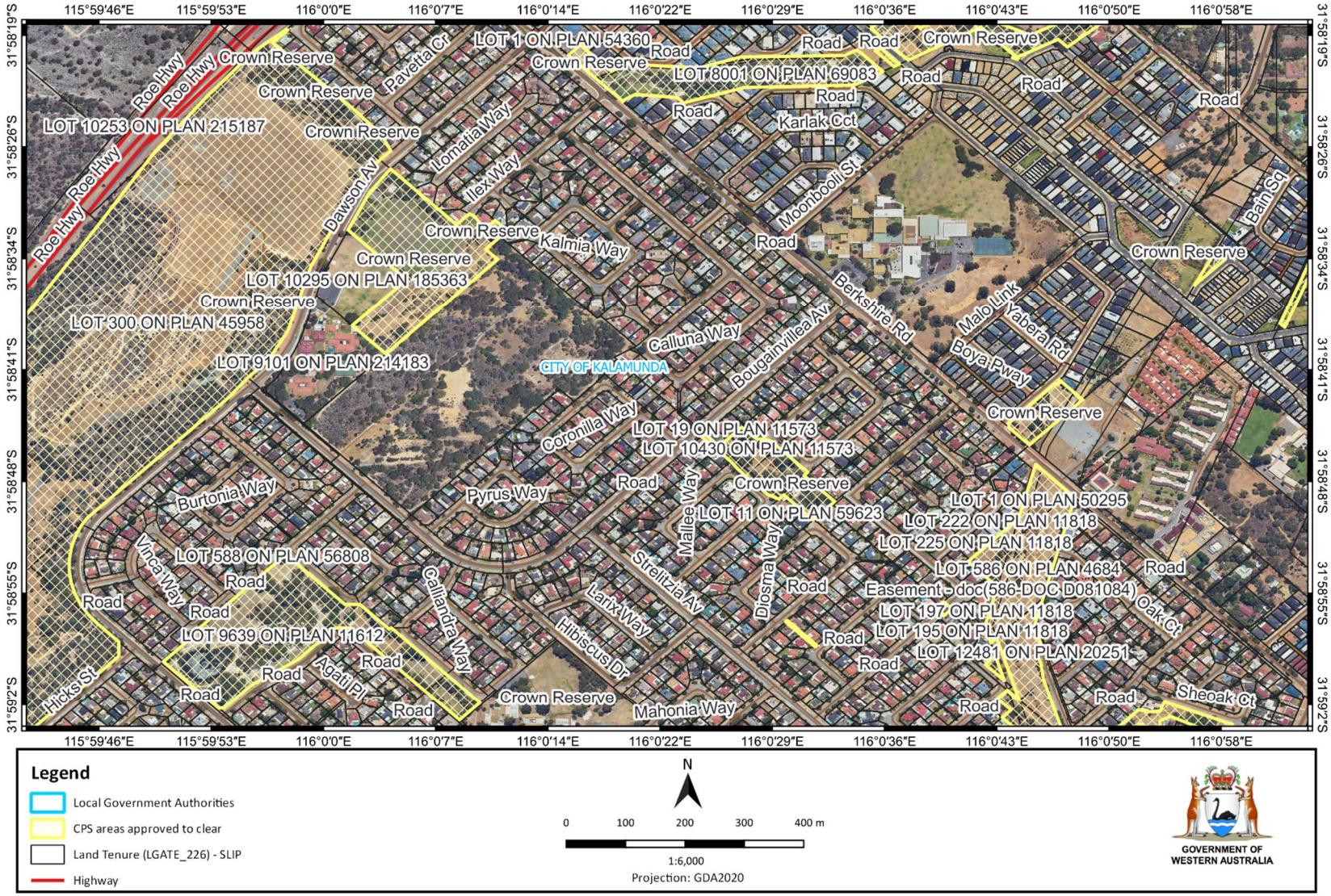


Figure 22 Plan U of the application area

The areas crosshatched yellow indicates the areas authorised to be cleared under the granted clearing permit.

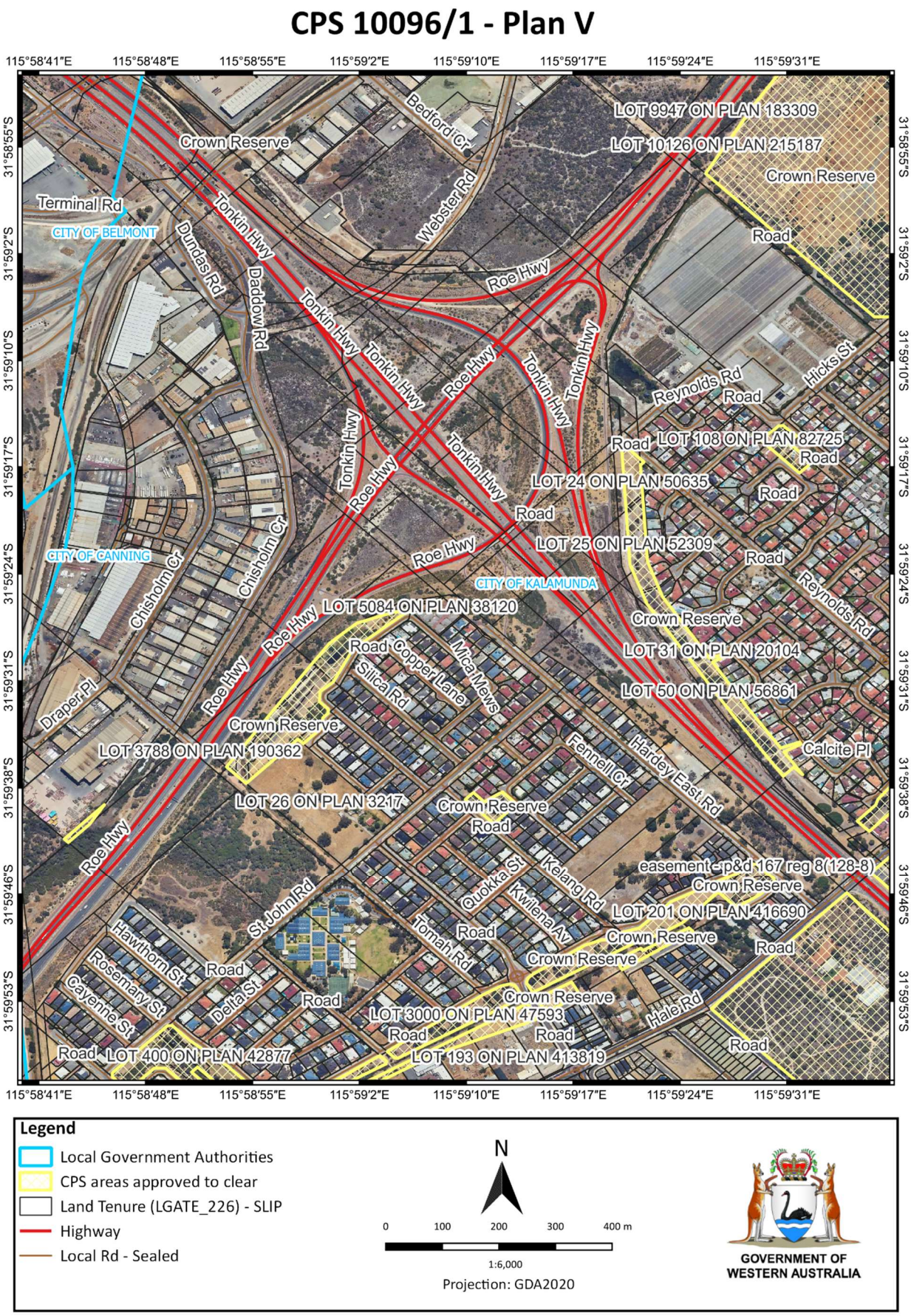


Figure 23 Plan V of the application area

The areas crosshatched yellow indicates the areas authorised to be cleared under the granted clearing permit.

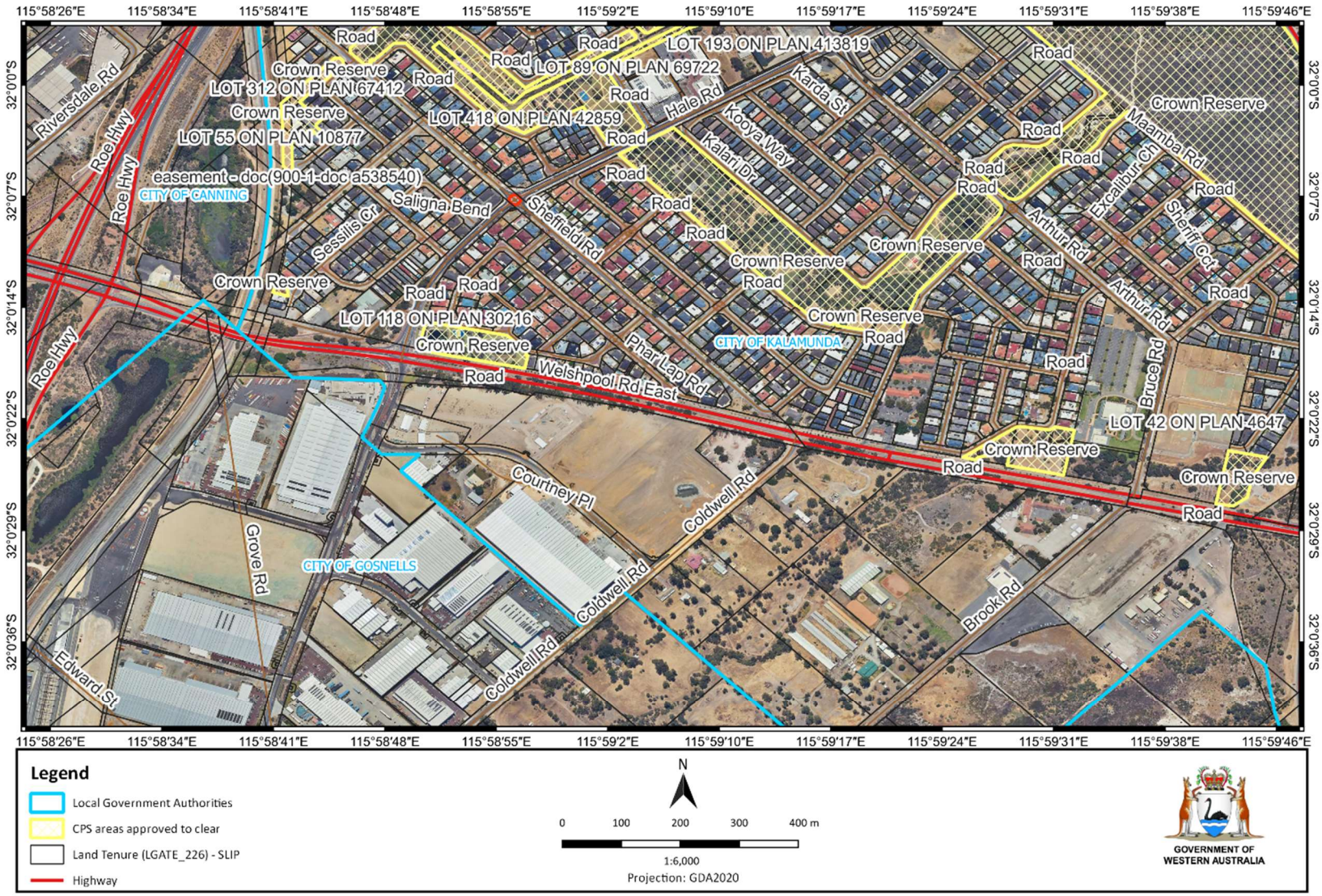


Figure 24 Plan W of the application area

The areas crosshatched yellow indicates the areas authorised to be cleared under the granted clearing permit.

CPS 10096/1 - Plan X



Figure 25 Plan X of the application area

The areas crosshatched yellow indicates the areas authorised to be cleared under the granted clearing permit.

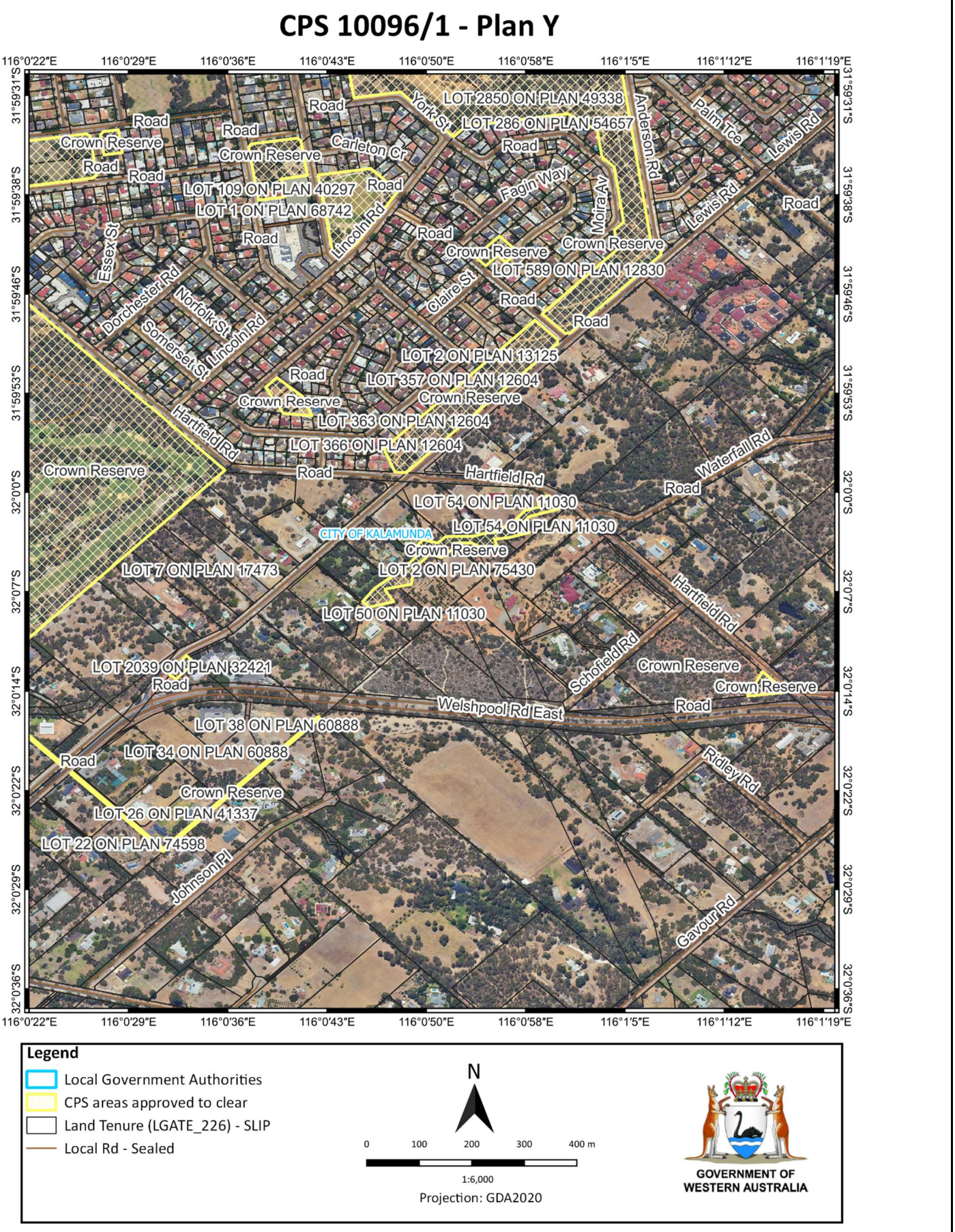


Figure 26 Plan Y of the application area

The areas crosshatched yellow indicates the areas authorised to be cleared under the granted clearing permit.

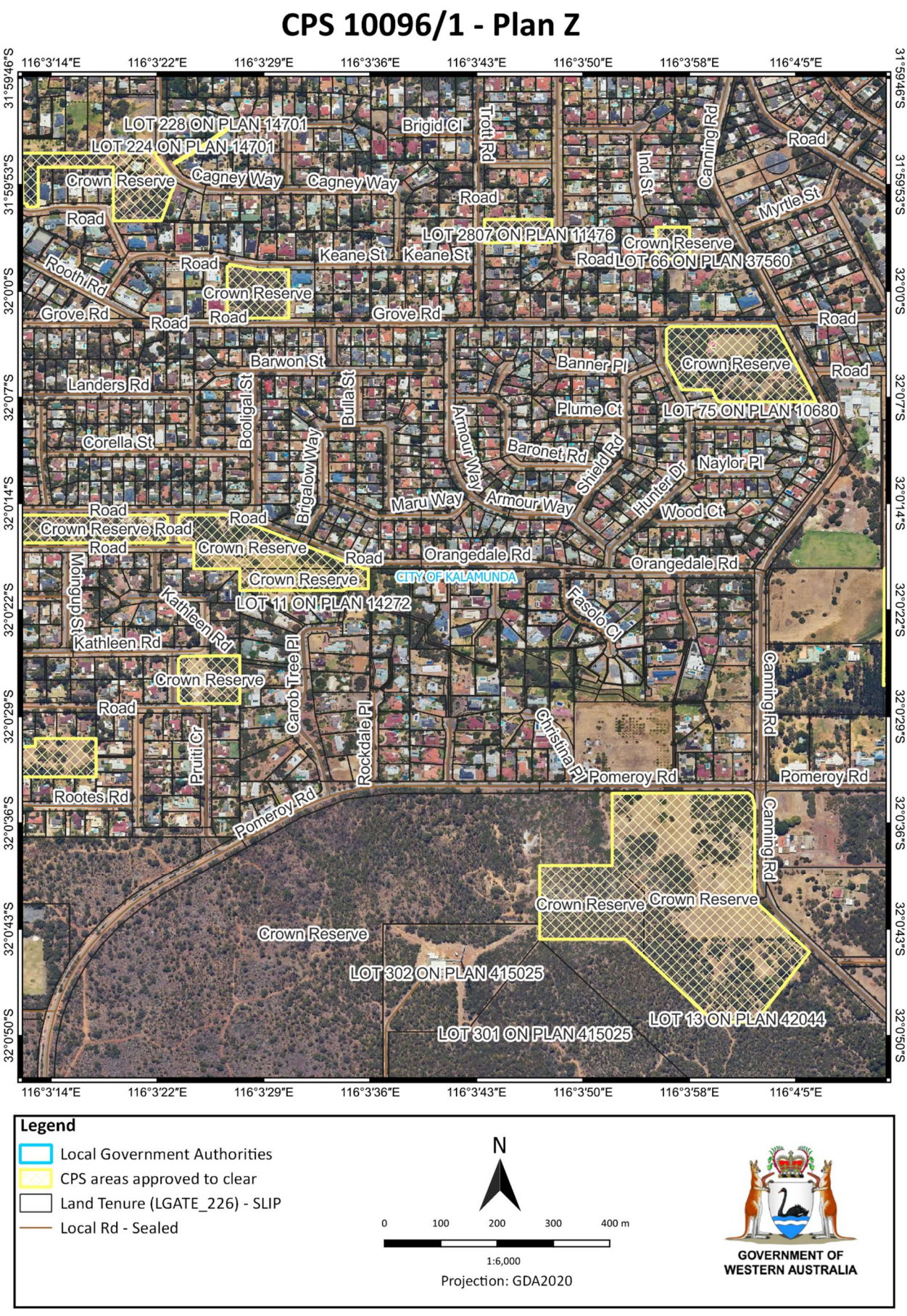


Figure 27 Plan Z of the application area

The areas crosshatched yellow indicates the areas authorised to be cleared under the granted clearing permit.

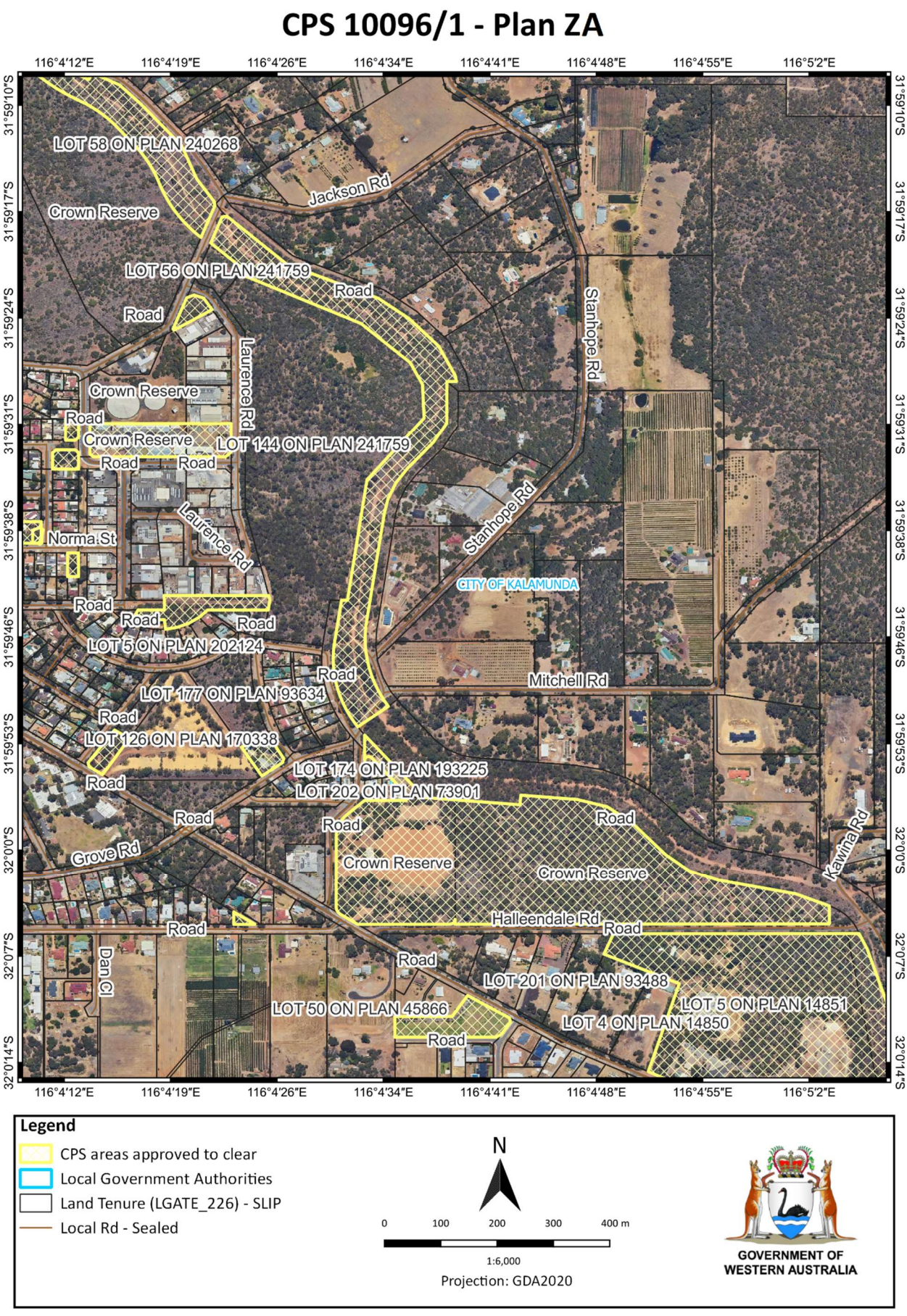


Figure 28 Plan ZA of the application area

The areas crosshatched yellow indicates the areas authorised to be cleared under the granted clearing permit.

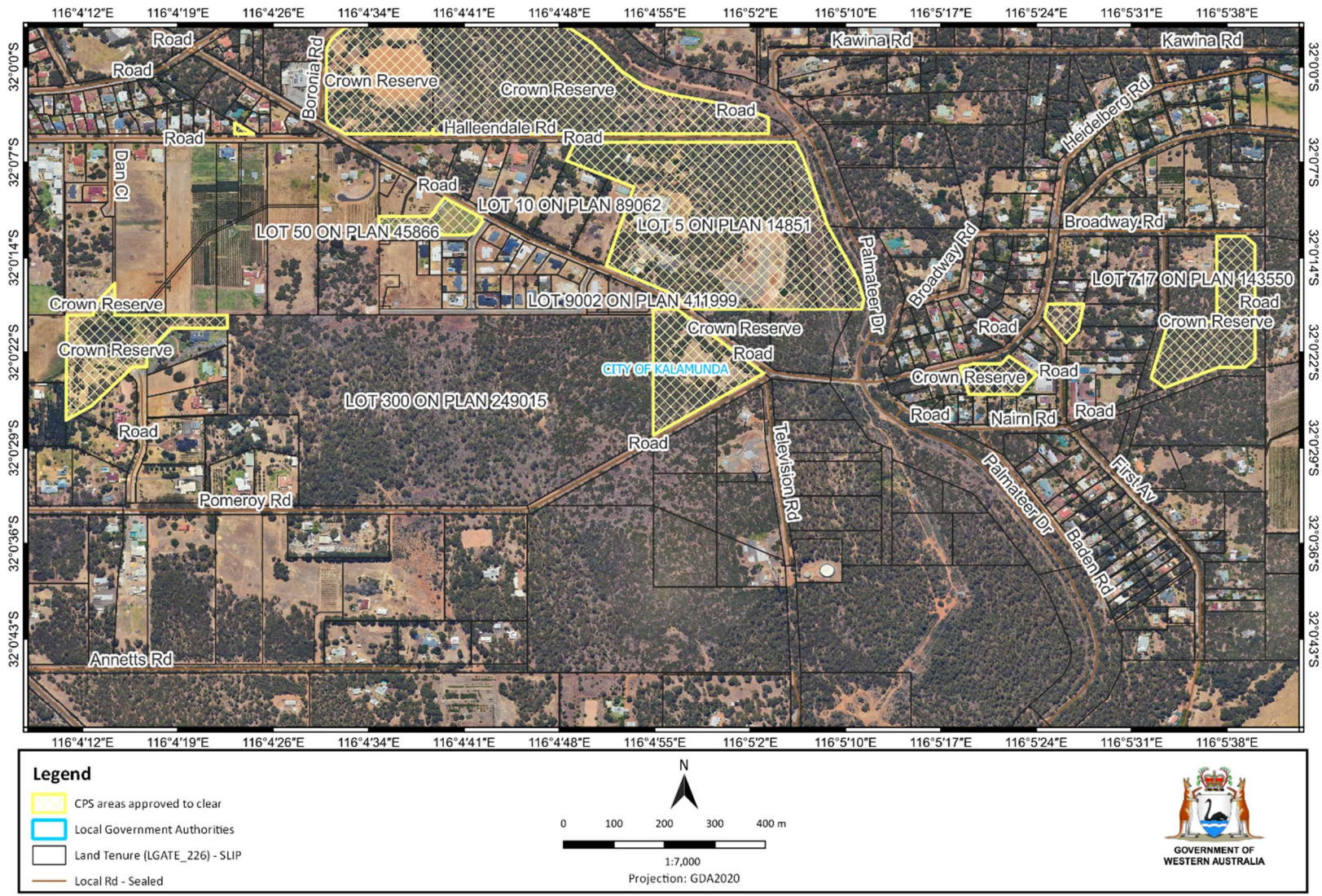


Figure 29 Plan ZB of the application area

The areas crosshatched yellow indicates the areas authorised to be cleared under the granted clearing permit.

CPS 10096/1 - Plan ZC

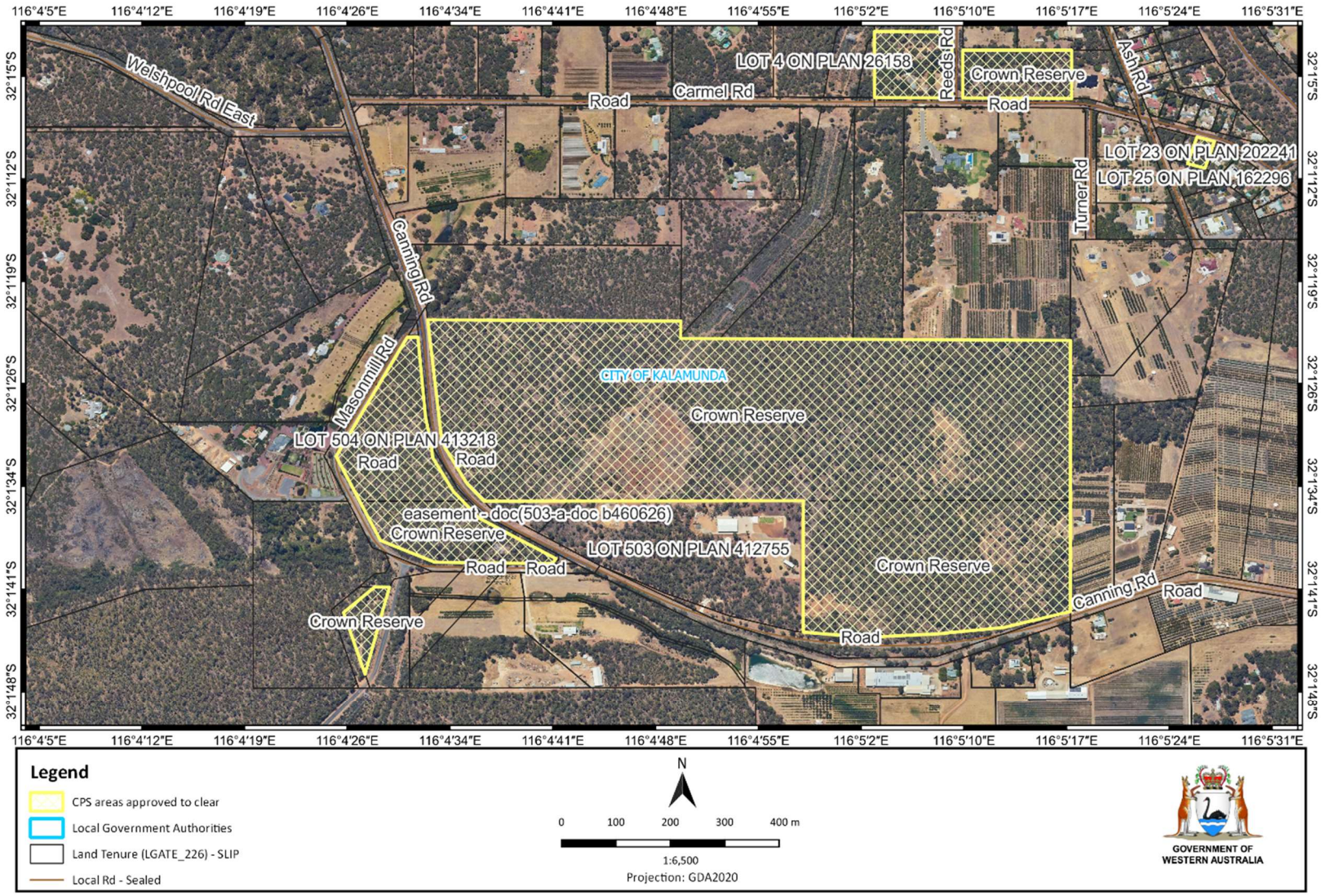


Figure 30 Plan ZC of the application area

The areas crosshatched yellow indicates the areas authorised to be cleared under the granted clearing permit.



Figure 31 Plan ZD of the application area

The areas crosshatched yellow indicates the areas authorised to be cleared under the granted clearing permit.

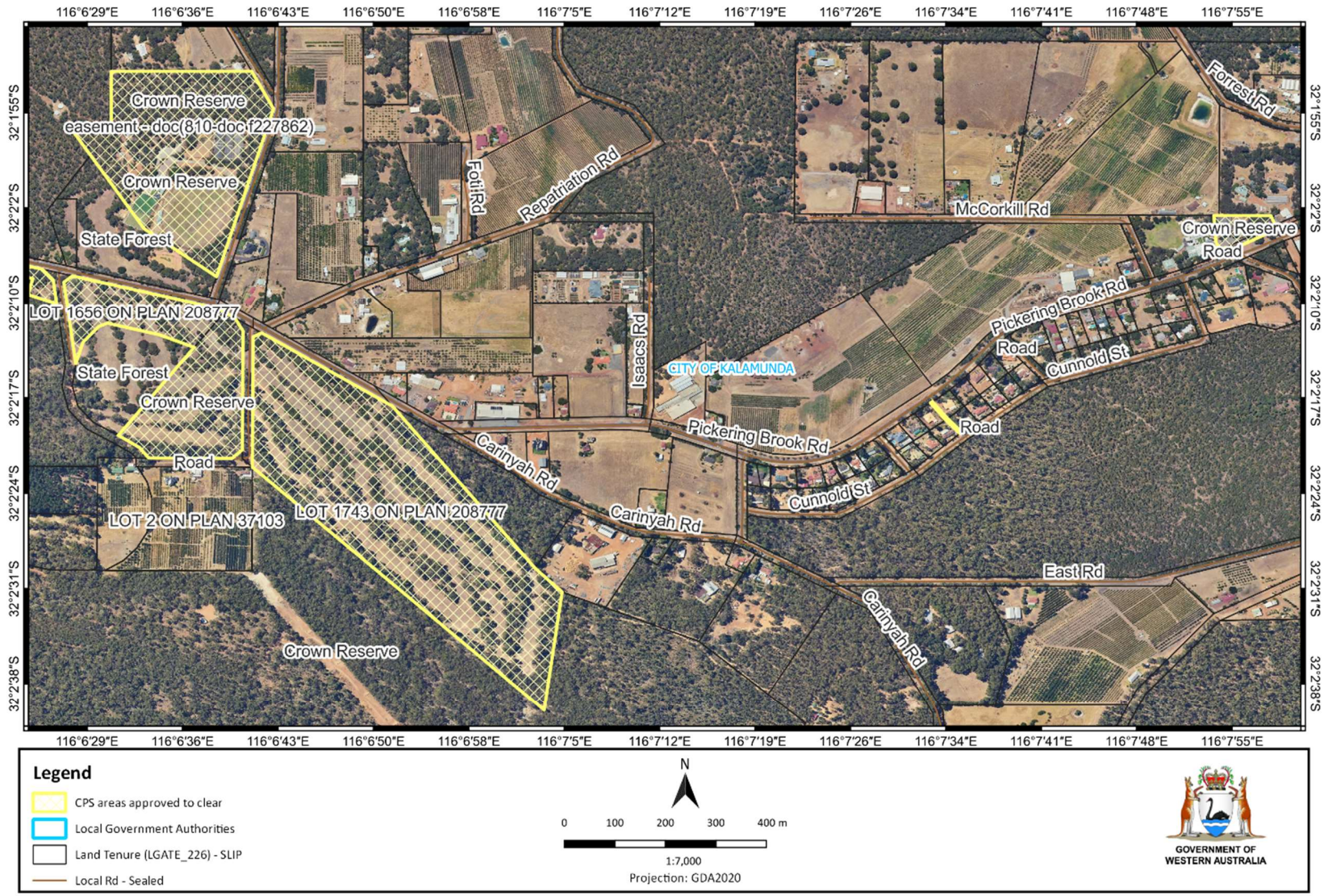


Figure 32 Plan ZE of the application area

The areas crosshatched yellow indicates the areas authorised to be cleared under the granted clearing permit.

2 Legislative context

The clearing of native vegetation in Western Australia is regulated under the EP Act and the *Environmental Protection (Clearing of Native Vegetation) Regulations 2004* (Clearing Regulations).

In addition to the matters considered in accordance with section 51O of the EP Act (see Section 1.4), the Delegated Officer has also had regard to the objects and principles under section 4A of the EP Act, particularly:

- the precautionary principle
- the principle of intergenerational equity
- the principle of the conservation of biological diversity and ecological integrity.

Other legislation of relevance for this assessment include:

- *Biodiversity Conservation Act 2016* (WA) (BC Act)
- *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act)
- *Soil and Land Conservation Act 1945* (WA)

The key guidance documents which inform this assessment are:

- *A guide to the assessment of applications to clear native vegetation* (DER, December 2013)
- *Procedure: Native vegetation clearing permits* (DWER, October 2019)

3 Detailed assessment of application

3.1. Avoidance and mitigation measures

The applicant will only be targeting Typha in areas where it requires management. Once removed and where suited, the City of Kalamunda plan to replace the invasive Typha with native rehabilitation (City of Kalamunda, 2023a).

The Delegated Officer was satisfied that the applicant has made a reasonable effort to avoid and minimise potential impacts of the proposed clearing on environmental values.

3.2. Assessment of impacts on environmental values

In assessing the application, the Delegated Officer has had regard for the site characteristics (see Appendix B) and the extent to which the impacts of the proposed clearing present a risk to biological, conservation, or land and water resource values.

The assessment against the clearing principles (see **Error! Reference source not found.**) identified that the impacts of the proposed clearing present a risk to biological values (fauna and flora), and land and water resources. The consideration of these impacts, and the extent to which they can be managed through conditions applied in line with sections 51H and 51I of the EP Act, is set out below.

3.2.1. Biological values (fauna) - Clearing Principles (a) and (b)

Assessment

According to available databases, 10 conservation significant fauna are recorded in the application area, *Calyptorhynchus banksii naso* (forest red-tailed black cockatoo), *Calyptorhynchus baudinii* (Baudin's cockatoo), *Calyptorhynchus latirostris* (Carnaby's cockatoo), *Dasyurus geoffroii* (chuditch), *Isoodon fusciventer* (Quenda), *Myrmecobius fasciatus* (Numbat), *Neelaps calonotos* (black-striped burrowing snake), *Notamacropus Irma* (western brush wallaby), *Phascogale tapoatafa wambenger* (South-western brush-tailed phascogale) and *Tringa nebularia* (Common greenshank). A total of 64 conservation significant fauna species are recorded in the local area. The application area may provide suitable habitat for 29 conservation significant fauna species which tend to occupy riparian habitats.

The application area may provide habitat for the following 15 migratory or wetland bird species. These species are:

- *Actitis hypoleucos* (common sandpiper)
- *Apus pacificus* (Fork-tailed swift)
- *Calidris acuminata* (Sharp-tailed sandpiper)
- *Calidris ferruginea* (curlew sandpiper)
- *Calidris melanotos* (Pectoral Sandpiper)
- *Calidris ruficollis* (Red-necked stint)
- *Calidris subminuta* (Long-toed Stint)
- *Limosa lapponica* (Bar-tailed godwit)

- *Limosa limosa* (Black-tailed godwit)
- *Numenius phaeopus* (Whimbrel)
- *Plegadis falcinellus* (Glossy ibis)
- *Pluvialis squatarola* (Grey plover)
- *Thalasseus bergii* (Crested tern)
- *Tringa glareola* (Wood sandpiper)
- *Tringa nebularia* (Common greenshank)
- *Tringa stagnatilis* (Marsh sandpiper)

The abovementioned migratory or wetland bird species do not depend exclusively on foraging in habitats prone to Typha infestation, however, may be present at the time of clearing. The application area is not likely to provide significant habitat for these species, therefore impacts on these species are likely to be minimal.

While 10 conservation significant fauna have been previously recorded in the application area, many of them are not associated with riparian vegetation. Black cockatoo's do not utilise Typha or other sedges as foraging, nesting, or roosting habitat. The numbat (*Myrmecobius fasciatus*) prefers open areas to feed on termites (DPAW, 2017). *Phascogale tapoatafa wambenger* are primarily arboreal (DEC, 2012a). *Neelaps calonotos* (black-striped burrowing snake) is a poorly known species often found in Banksia woodlands burrowing under the sandy soils (ALA, 2018). *Notamacropus Irma* (western brush wallaby) prefers open seasonally wet flats (DEC, 2012b). Given that the proposed clearing will only involve the clearing of Typha, it is unlikely to impact on critical habitat for the abovementioned conservation significant fauna.

Dasyurus geoffroii (chuditch) is a vulnerable quoll species with 117 records in the local area including the application area. It is the largest carnivorous marsupial in Western Australia and occur in jarrah forests and woodlands with home ranges between 3-4 km for females and over 15 km for males (DEC, 2012c). While often found in higher densities in riparian vegetation, they are not associated with occurring in areas of Typha. Given the targeted nature of the proposed clearing, the chuditch is unlikely to be significantly impacted.

Isoodon fusciventer (Quenda) is a Priority 4 species with 1198 records in the local area including the application area. They are often found in swampy vegetation with a dense cover up to 1 metre high and have home ranges of 1-3 hectares for females and 2-7 hectares for males (DEC, 2012d). While this species is not directly associated with Typha, they were recorded recently (2020) in the local area so may be present in the application area.

Botaurus poiciloptilus (Australasian bittern) is an endangered species with four records in the local area. This species favours permanent freshwater wetlands with tall, dense vegetation, particularly *Eleocharis* spp. (Spike rushes) and Typha (DBCA, 2018). The species is known to breed in Spring-Summer, with egg laying known to occur in September to December (DBCA, 2021). These records are based on data from 1979 and was not included in the recovery plan as only Thomsons Lake, Forrestdale Lake and James Swamp were close to the Perth metropolitan area (DBCA, 2018). While the application area is outside the current range of Australasian bittern, it may potentially visit application area.

Ixobrychus dubius (Australian little bittern) is a Priority 4 species with one record 8.76 kilometres from the application area. This species has similar habitat requirements to the Australasian bittern mainly where tall rushes, reeds, Typha, shrub thickets or other dense cover is inundated by at least 30 centimetres of water. It can be found in extensive swamps, but often inhabits small patches of dense wetland vegetation such as Typha along drains or in small urban lakes (Bird life Australia, 2020a). Little bittern can occur as a migrant in south-west Australia from late August to early April, breeding in the north of the state in winter. Little bittern may visit wetlands on the Swan Coastal Plain (DBCA, 2021). There is a possibility of the species occurring within the application area but it is unlikely to have significant impacts on the Australian little bittern.

The Priority 3 Black bittern (*Ixobrychus flavicollis australis*) is also recorded in the local area. In spring, this species builds a nest on branches overhanging water. Habitat includes terrestrial and estuarine wetlands, generally in areas of permanent water and dense vegetation. Where permanent water is present, the species may occur in flooded grassland, forest, woodland, rainforest and mangrove (Birdlife Australia, 2020b). Given that Black bittern are not dependent on Typha habitat for breeding, it is unlikely this species will be impacted by the proposed clearing.

Oxyura australis (Blue-billed duck) is a Priority 4 species with 199 records in the local area. This species can breed from August to March, mostly between October to January (DBCA, 2021). Breeding habitat is typically secluded densely vegetated situations, with the nest constructed in Typha beds or other vegetation, in permanent water. Nests

are usually constructed from dead Typha leaves and sometimes thinly lined with down (Birdlife Australia, 2020c). Therefore, the proposed clearing may impact the breeding habitat of this species.

Setonix brachyurus (Quokka) is a small Vulnerable wallaby with 12 records in the local area. They spend a large proportion of their time in riparian habitats while foraging in more open areas. They are found in high rainfall areas in forest, woodland and wetland habitats with a thick sedge understorey (DEC, 2013). There is a possibility of the species occurring within the application area but it is unlikely to have significant impacts on the Quokka.

Hydromys chrysogaster (Water-rat, rakali) is a Priority 4 species with 35 records in the local area. Rakali are amphibious or semiaquatic mammals reaching up to 70 centimetres in length (from nose to end of the tail), feeding largely underwater, on a wide range of prey including large insects, crustaceans, mussels and fishes, and even frogs, lizards, small mammals and water birds. Although dependent on water for foraging, Rakali live on land, in burrows on low banks of rivers, lakes, wetlands, and estuaries including coastal areas. Intact riparian vegetation and associated bank stability is critical to their survival (DWER, 2021). While not present in the application area, they may range through the application area, as ranging territory can be up to four kilometres of riverbank (DWER, 2021).

Westralunio carteri (Carter's freshwater mussel) is a Vulnerable species with 56 records in the local area. The records are all located in different tributaries of the Canning River and so are unlikely to be impacted by the proposed clearing.

The adjacent vegetation is susceptible to weed invasion and dieback in which the clearing process may exacerbate, thereby reducing habitat quality.

Conclusion

Based on the above assessment, stands of Typha may provide breeding habitat and a source of nest building material for Blue billed duck. There is a low probability that migratory or wetland birds may temporarily use the application area as foraging habitat. While the other riparian associated fauna may range through the application area, they are unlikely to solely rely on the Typha being cleared or be significantly impacted by the proposed clearing. It is considered that the impacts of the proposed clearing can be managed by conducting slow directional clearing to ensure any individuals that may be present at the time of clearing can move to adjacent habitat.

Conditions

To address the above impacts, the following management measures will be required as conditions on the clearing permit, in areas where clearing of Typha will occur:

- Pre-clearing site inspections prior to works commencing and ongoing during works for any fauna that may be present. If found and are not able to escape into adjacent habitat, the City of Kalamunda is to cease works until the identified fauna has left the clearing area; and
- Undertake slow, progressive one directional clearing to allow fauna to move into adjacent habitat ahead of the clearing activity.
- Take hygiene steps to minimise the risk of the introduction and spread of weeds and dieback.

3.2.2. Biological values (flora) - Clearing Principles (a) and (c)

Assessment

According to available databases, 21 of the 138 conservation significant flora recorded in the local area have been previously recorded within the application area. Although only six of those 21 species are associated with riparian vegetation. In total there are 53 species associated with riparian vegetation with two, *Melaleuca viminalis* (Priority 2) and *Bolboschoenus fluviatilis* (Priority 1) noted near Typha, although only the *Melaleuca* is found in the same soil type as the application area. *Melaleuca viminalis* is a Priority 2 slender erect shrub up to 4 metres high and two individuals have been recorded 120 metres from the application area (Western Australian Herbarium 1998-). Given the large size of the species even if it does occur within the Typha stand it is unlikely to be impacted due to the targeted nature of the clearing.

Typha is capable of aggressive invasions that can transform ecosystems unless it is actively managed (Western Australian Herbarium 1998-). Without management, Typha can develop quickly into a monoculture and cover an entire water body. As the proposed clearing will only target Typha, it is unlikely any conservation significant flora will be negatively impacted during removal, due to the nature of the clearing. In addition, removing Typha will likely benefit the health of the ecosystem.

Conclusion

Based on the above assessment, the proposed clearing is unlikely to result in a significant loss in biodiversity or impact significant populations of threatened and priority flora. Suitable habitat for species listed in Appendix A.3 is unlikely to be significantly impacted by the proposed clearing.

Conditions

To address the above impacts, the following management measures will be required as conditions on the clearing permit:

- avoid and minimise clearing, to minimise the direct impacts to native vegetation
- undertake spraying of herbicide during the driest period of the year when the water level is at its lowest and during calm conditions
- take hygiene steps to minimise the risk of the introduction and spread of weeds and dieback.

3.2.3. Land and water resources - Clearing Principles (f), (g), (i) and (j)

Assessment

The proposed clearing is for the purpose of controlling the occurrence of Typha due to its invasive nature and adverse impacts on wetlands in the absence of management. Given the proposed clearing will target Typha, the proposed clearing is not likely to result in any long-term impact to the ecological values of the riparian vegetation communities and associated wetlands within the application area.

The mapped soil units had a high risk of wind erosion and subsurface acidification with high phosphorus export risk in some soil types. Given the selective clearing and that Typha has been found to assist in neutralising acidity on re-wetting in areas that are prone to acid sulphate soils, the proposed clearing is unlikely to cause an appreciable increase to the existing risks of wind erosion, subsurface acidification and phosphorus export (DBCA, 2019).

The removal of Typha has the potential to increase sedimentation and turbidity the water within the application area, thereby possibly impacting surface water quality. The application area intersects Public Drinking Water Source Areas Middle Helena Catchment Area and Victoria Reservoir Catchment Area. As herbicide is proposed to be used to clear Typha in riparian vegetation, the clearing is recommended to be consistent with best management practices to protect the water quality (DWER, 2023a). These guidelines include:

- Water Quality Protection Note (WQPN) 6: Vegetation buffers to sensitive water resources
- WQPN 10: Contaminant spills – emergency response plan
- WQPN 65: Toxic and hazardous substances
- Circular PSC88: Use of herbicides in water catchment areas.

The applicant confirmed the guidelines would be followed during the proposed clearing (City of Kalamunda, 2023b). Given the invasiveness of Typha, the proposed clearing may improve drainage of water and reduce the incidence or intensity of flooding.

Conclusion

The proposed clearing will not significantly impact the vegetation and is expected to enhance the habitat within the application area through the removal of Typha as the increased water drainage will reduce the risk of flooding. The selective clearing of Typha within the application area is not likely to lead to appreciable land degradation in the form of subsurface acidification, phosphorus export or wind erosion. No management conditions are required in relation to this environmental value.

3.3. Relevant planning instruments and other matters

The application area falls within the Canning River and Tributaries RIWI River as proclaimed under the *Rights in Water and Irrigation Act 1914*. The DWER's RIWI branch advised that no permit would be required for the proposed works (RIWI Act; DWER, 2023b). DWER's Water Licencing branch advised that no permit would be required to undertake the proposed clearing in the Public Drinking Water Source Area (DWER, 2023a).

Advice provided by Contaminated Sites (DWER, 2023c) identified 19 contaminated sites with three awaiting classification, one contaminated restricted use, nine possibly contaminated investigation required, four remediated for restricted use and two report not substantiated (see Appendix B.5). Contaminated Sites recommended that site management plans and unexpected finds protocols for multiple sites are prepared. When developing the management plans and unexpected finds protocols, the following guidelines should be referred to:

- Department of Water and Environmental Regulation Guideline: Assessment and Management of Contaminated Sites (June 2023)
    - Guideline: Assessment and management of contaminated sites (www.wa.gov.au)
        - Section 13: Site Management starts on page 83
        - See page 86 for discussion of unexpected finds
        - See pages 88-91 for discussion of Site Management Plans
- Department of Health: Guidelines for the Assessment, Remediation, and Management of Asbestos Contaminated Sites
    - Guidelines for the assessment, remediation and management of asbestos contaminated sites (health.wa.gov.au) (December 2021)
        - Chapter 6: Site Remediation
        - Chapter 7 Auditing and Reporting
- Additionally works relating to asbestos should be carried out in accordance with WALW - Work Health and Safety (General) Regulations 2022 - Home Page (legislation.wa.gov.au)

The applicant confirmed the City will adhere to the (and future) identified contaminated sites protocols as per recommendations and be in line with the methodology applied (City of Kalamunda, 2023c). Given the above, the City will be adequately managing potential impacts of contaminated sites during the Typha works.

No Aboriginal sites of significance have been mapped within the application area. It is the permit holder's responsibility to ensure that no Aboriginal Sites of Significance are damaged through the clearing process.

End

Appendix A. Property List

Property	Locality
Lot 1 on Deposited Plan 120090	Kalamunda
Lot 1 on Diagram 48268	Forrestfield
Lot 1 on Diagram 50295	Forrestfield
Lot 1 on Diagram 66612	Lesmurdie
Lot 1 on Plan 11612	Forrestfield
Lot 10 on Diagram 62117	Kalamunda
Lot 100 on Deposited Plan 184406	Walliston
Lot 100 on Deposited Plan 415018	High Wycombe
Lot 100 on Deposited Plan 71902	Kalamunda
Lot 10022 on Diagram 56337	High Wycombe
Lot 10028 on Deposited Plan 91326	Gooseberry Hill
Lot 10032 on Diagram 56251	Forrestfield
Lot 10040 on Plan 11810	High Wycombe
Lot 10047 on Diagram 57350	High Wycombe
Lot 10051 on Diagram 57067	High Wycombe
Lot 101 on Deposited Plan 189427	Bickley
Lot 101 on Deposited Plan 248350	Kalamunda
Lot 101 on Deposited Plan 59834	High Wycombe
Lot 101 on Diagram 54848	Forrestfield
Lot 10103 on Diagram 57928	Forrestfield
Lot 10176 on Plan 13343	Maida Vale
Lot 10177 on Diagram 58802	Gooseberry Hill
Lot 10177 on Diagram 58802	Gooseberry Hill
Lot 10205 on Plan 13420	High Wycombe
Lot 10208 on Plan 13419	High Wycombe
Lot 10208 on Plan 13419	High Wycombe
Lot 10208 on Plan 13419	High Wycombe
Lot 10209 on Plan 13417	High Wycombe
Lot 10209 on Plan 13417	High Wycombe
Lot 10220 on Diagram 59765	Maida Vale
Lot 10222 on Diagram 54277	Forrestfield
Lot 10271 on Plan 13588	Maida Vale
Lot 10273 on Plan 13418	High Wycombe
Lot 10274 on Plan 13418	High Wycombe
Lot 10299 on Plan 13566	Gooseberry Hill
Lot 10368 on Diagram 52130	High Wycombe
Lot 104 on Plan 17920	Forrestfield
Lot 104 on Plan 17920	Forrestfield
Lot 10427 on Diagram 10427	Maida Vale

Property	Locality
Lot 10430 on Plan 11573	Forrestfield
Lot 10448 on Plan 10957	Forrestfield
Lot 10485 on Plan 9593	Maida Vale
Lot 10512 on Plan 14269	Forrestfield
Lot 10549 on Plan 13678	Maida Vale
Lot 10549 on Plan 13678	Maida Vale
Lot 10571 on Plan 8671	Gooseberry Hill
Lot 10572 on Diagram 52799	Maida Vale
Lot 106 on Plan 17920	Forrestfield
Lot 10687 on Diagram 52458	Forrestfield
Lot 10720 on Diagram 55286	Forrestfield
Lot 10721 on Diagram 55286	Forrestfield
Lot 10726 on Diagram 67742	Gooseberry Hill
Lot 10745 on Plan 15060	Maida Vale
Lot 10845 on Diagram 68874	Maida Vale
Lot 10858 on Deposited Plan 30819	Gooseberry Hill
Lot 109 on Deposited Plan 166808	Carmel
Lot 109 on Diagram 40297	Forrestfield
Lot 10999 on Plan 15648	High Wycombe
Lot 11034 on Plan 13984	Maida Vale
Lot 11035 on Plan 13984	Maida Vale
Lot 11048 on Deposited Plan 188248	High Wycombe
Lot 11050 on Plan 14762	Maida Vale
Lot 11069 on Plan 16028	High Wycombe
Lot 11072 on Deposited Plan 188672	High Wycombe
Lot 11084 on Diagram 72842	High Wycombe
Lot 11104 on Plan 16087	High Wycombe
Lot 11202 on Plan 10830	Maida Vale
Lot 11294 on Plan 16922	Maida Vale
Lot 11296 on Plan 16812	Forrestfield
Lot 11349 on Plan 12053	Forrestfield
Lot 115 on Deposited Plan 109525	Carmel
Lot 11548 on Plan 15159	High Wycombe
Lot 11569 on Deposited Plan 217894	Maida Vale
Lot 11569 on Deposited Plan 217894	Maida Vale
Lot 11583 on Deposited Plan 217852	Maida Vale
Lot 11600 on Plan 15286	High Wycombe
Lot 11634 on Diagram 79635	Maida Vale
Lot 11775 on Plan 18295	Forrestfield
Lot 11779 on Plan 14310	High Wycombe

Property	Locality
Lot 11848 on Diagram 82725	Forrestfield
Lot 11856 on Plan 14310	High Wycombe
Lot 11887 on Plan 18576	High Wycombe
Lot 11930 on Plan 13984	Maida Vale
Lot 11953 on Deposited Plan 192129	Maida Vale
Lot 11956 on Diagram 82220	High Wycombe
Lot 11991 on Diagram 72921	Gooseberry Hill
Lot 12 on Deposited Plan 49663	High Wycombe
Lot 120 on Diagram 55578	Forrestfield
Lot 120 on Diagram 55578	Forrestfield
Lot 12026 on Diagram 85438	Maida Vale
Lot 12030 on Diagram 84253	Kalamunda
Lot 12034 on Diagram 84927	Gooseberry Hill
Lot 12062 on Plan 18924	Forrestfield
Lot 123 on Deposited Plan 169472	Walliston
Lot 12366 on Diagram 77413	Forrestfield
Lot 12372 on Diagram 75676	High Wycombe
Lot 12379 on Plan 14916	High Wycombe
Lot 1240 on Deposited Plan 404439	Piesse Brook
Lot 12447 on Diagram 78336	Gooseberry Hill
Lot 12481 on Plan 20251	Forrestfield
Lot 12569 on Plan 21016	High Wycombe
Lot 12579 on Diagram 54118	High Wycombe
Lot 12589 on Deposited Plan 192761	Maida Vale
Lot 12706 on Plan 21252	Gooseberry Hill
Lot 12747 on Plan 16087	High Wycombe
Lot 12747 on Plan 16128	High Wycombe
Lot 128 on Deposited Plan 52202	Wattle Grove
Lot 1285 on Diagram 18747	Kalamunda
Lot 13 on Diagram 24292	High Wycombe
Lot 131 on Diagram 43004	Lesmurdie
Lot 13211 on Plan 22311	Maida Vale
Lot 13213 on Diagram 90495	Gooseberry Hill
Lot 13225 on Plan 22897	High Wycombe
Lot 133 on Plan 3609	Forrestfield
Lot 134 on Plan 3609	Forrestfield
Lot 13413 on Diagram 97403	Gooseberry Hill
Lot 135 on Plan 3609	Forrestfield
Lot 135 on Plan 3609	Forrestfield
Lot 136 on Plan 3609	Forrestfield

Property	Locality
Lot 13601 on Plan 23588	Forrestfield
Lot 13602 on Plan 23588	Forrestfield
Lot 13603 on Plan 23589	Forrestfield
Lot 13641 on Plan 10861	Forrestfield
Lot 138 on Plan 3609	Forrestfield
Lot 13896 on Plan 7680	Gooseberry Hill
Lot 13897 on Diagram 22992	Gooseberry Hill
Lot 139 on Plan 3609	Forrestfield
Lot 13987 on Plan 24131	Forrestfield
Lot 14 on Diagram 24292	High Wycombe
Lot 140 on Deposited Plan 222583	Lesmurdie
Lot 140 on Plan 3609	Forrestfield
Lot 141 on Plan 3609	Forrestfield
Lot 14161 on Plan 24078	High Wycombe
Lot 142 on Deposited Plan 176290	Walliston
Lot 142 on Plan 3609	Forrestfield
Lot 143 on Deposited Plan 181478	Walliston
Lot 14419 on Deposited Plan 30622	High Wycombe
Lot 14420 on Deposited Plan 30622	High Wycombe
Lot 14509 on Deposited Plan 31502	Forrestfield
Lot 14547 on Deposited Plan 32394	High Wycombe
Lot 146 on Deposited Plan 213798	Walliston
Lot 14650 on Deposited Plan 33710	High Wycombe
Lot 14651 on Deposited Plan 33710	High Wycombe
Lot 14846 on Deposited Plan 35009	High Wycombe
Lot 15199 on Deposited Plan 37990	High Wycombe
Lot 15212 on Deposited Plan 38506	Forrestfield
Lot 15213 on Deposited Plan 39283	Forrestfield
Lot 153 on Deposited Plan 213798	Walliston
Lot 15401 on Deposited Plan 39533	High Wycombe
Lot 15405 on Deposited Plan 38797	Forrestfield
Lot 15406 on Deposited Plan 38797	Forrestfield
Lot 15426 on Deposited Plan 38202	High Wycombe
Lot 15430 on Deposited Plan 40810	Forrestfield
Lot 15511 on Deposited Plan 41214	Maida Vale
Lot 16 on Deposited Plan 202204	Kalamunda
Lot 1656 on Deposited Plan 208777	Pickering Brook
Lot 1658 on Plan 6814	Lesmurdie
Lot 1659 on Plan 6813	Lesmurdie
Lot 1674 on Deposited Plan 216289	Carmel

Property	Locality
Lot 1690 on Plan 7220	Lesmurdie
Lot 17 on Deposited Plan 202204	Kalamunda
Lot 17 on Deposited Plan 222580	Kalamunda
Lot 1722 on Plan 7228	Walliston
Lot 173 on Diagram 84096	Walliston
Lot 174 on Deposited Plan 193225	Walliston
Lot 1743 on Deposited Plan 208777	Pickering Brook
Lot 1743 on Deposited Plan 208777	Pickering Brook
Lot 175 on Deposited Plan 193148	Walliston
Lot 179 on Deposited Plan 193225	Walliston
Lot 18 on Diagram 24292	High Wycombe
Lot 180 on Deposited Plan 27571	Lesmurdie
Lot 1875 on Deposited Plan 249836	Maida Vale
Lot 1879 on Deposited Plan 168945	Piesse Brook
Lot 1890 on Plan 7758	Lesmurdie
Lot 1949 on Deposited Plan 241759	Walliston
Lot 1978 on Diagram 30809	Lesmurdie
Lot 2 on Deposited Plan 120090	Kalamunda
Lot 2 on Diagram 23278	Wattle Grove
Lot 2 on Diagram 49398	Forrestfield
Lot 2 on Diagram 60837	Maida Vale
Lot 20 on Deposited Plan 68952	High Wycombe
Lot 200 on Deposited Plan 54450	Forrestfield
Lot 200 on Deposited Plan 77781	High Wycombe
Lot 2001 on Deposited Plan 26827	Forrestfield
Lot 2002 on Deposited Plan 26827	Forrestfield
Lot 2003 on Deposited Plan 26827	High Wycombe
Lot 2010 on Deposited Plan 47329	High Wycombe
Lot 2011 on Deposited Plan 47329	High Wycombe
Lot 2012 on Plan 8506	Kalamunda
Lot 202 on Diagram 87143	Maida Vale
Lot 2022 on Diagram 31986	Lesmurdie
Lot 2037 on Plan 8524	Walliston
Lot 2039 on Diagram 32421	Wattle Grove
Lot 205 on Deposited Plan 252229	Kalamunda
Lot 2075 on Diagram 33054	Lesmurdie
Lot 2103 on Diagram 34085	Kalamunda
Lot 2111 on Plan 8699	Walliston
Lot 2112 on Plan 8699	Walliston
Lot 2122 on Diagram 34277	Kalamunda
Lot 2124 on Plan 8814	Kalamunda

Property	Locality
Lot 2125 on Plan 8814	Kalamunda
Lot 2143 on Plan 8784	Kalamunda
Lot 2154 on Diagram 34546	Lesmurdie
Lot 216 on Deposited Plan 130094	Gooseberry Hill
Lot 217 on Deposited Plan 130094	Gooseberry Hill
Lot 2187 on Plan 9076	Lesmurdie
Lot 2187 on Plan 9076	Lesmurdie
Lot 2190 on Plan 8600	Lesmurdie
Lot 22 on Deposited Plan 202204	Kalamunda
Lot 224 on Deposited Plan 130094	Gooseberry Hill
Lot 2252 on Diagram 37560	Lesmurdie
Lot 2261 on Deposited Plan 211285	Kalamunda
Lot 2261 on Deposited Plan 211285	Kalamunda
Lot 2261 on Deposited Plan 211285	Kalamunda
Lot 227 on Deposited Plan 409141	Wattle Grove
Lot 227 on Deposited Plan 409141	Wattle Grove
Lot 23 on Deposited Plan 202241	Carmel
Lot 2346 on Deposited Plan 175280	Forrestfield
Lot 2359 on Diagram 36865	Lesmurdie
Lot 2360 on Diagram 39773	Kalamunda
Lot 2378 on Plan 9875	Lesmurdie
Lot 2379 on Plan 9875	Lesmurdie
Lot 2400 on Diagram 39277	Walliston
Lot 2409 on Diagram 41166	Lesmurdie
Lot 2439 on Diagram 41384	Forrestfield
Lot 2455 on Plan 9456	Kalamunda
Lot 2458 on Plan 9704	Walliston
Lot 2487 on Diagram 37682	Lesmurdie
Lot 2512 on Diagram 40135	Kalamunda
Lot 2514 on Plan 8966	Kalamunda
Lot 2516 on Diagram 28645	Kalamunda
Lot 2560 on Plan 9734	Forrestfield
Lot 2570 on Plan 10649	Lesmurdie
Lot 2584 on Diagram 41854	Lesmurdie
Lot 26 on Deposited Plan 205160	Bickley
Lot 2668 on Plan 10796	Kalamunda
Lot 2682 on Plan 10997	Kalamunda
Lot 2682 on Plan 10997	Kalamunda
Lot 27 on Diagram 24284	High Wycombe
Lot 2744 on Diagram 46169	Lesmurdie

Property	Locality
Lot 2746 on Diagram 47539	Lesmurdie
Lot 2770 on Plan 11287	Forrestfield
Lot 2771 on Plan 11287	Forrestfield
Lot 28 on Deposited Plan 49522	High Wycombe
Lot 28 on Plan 14116	Maida Vale
Lot 28 on Plan 4666	High Wycombe
Lot 2807 on Plan 11476	Lesmurdie
Lot 2824 on Diagram 43004	Lesmurdie
Lot 2832 on Diagram 48945	Forrestfield
Lot 2850 on Diagram 49338	Forrestfield
Lot 2879 on Deposited Plan 213930	Forrestfield
Lot 2879 on Deposited Plan 213930	Forrestfield
Lot 2888 on Plan 11806	Lesmurdie
Lot 2919 on Diagram 45310	Lesmurdie
Lot 2920 on Diagram 45740	Lesmurdie
Lot 294 on Deposited Plan 72065	Forrestfield
Lot 2975 on Plan 11030	Wattle Grove
Lot 3 on Diagram 50293	Forrestfield
Lot 30 on Deposited Plan 205160	Bickley
Lot 300 on Plan S054457	High Wycombe
Lot 3000 on Deposited Plan 41299	Wattle Grove
Lot 3000 on Deposited Plan 42360	Maida Vale
Lot 3000 on Deposited Plan 44636	Forrestfield
Lot 3000 on Deposited Plan 47593	Wattle Grove
Lot 3001 on Deposited Plan 44636	Wattle Grove
Lot 3001 on Deposited Plan 53264	Maida Vale
Lot 301 on Deposited Plan 407240	High Wycombe
Lot 301 on Deposited Plan 415021	Maida Vale
Lot 301 on Deposited Plan 415021	Maida Vale
Lot 301 on Deposited Plan 42912	Walliston
Lot 301 on Deposited Plan 47669	High Wycombe
Lot 301 on Deposited Plan 57000	Kalamunda
Lot 301 on Plan S054457	High Wycombe
Lot 3016 on Plan 12049	Forrestfield
Lot 3018 on Plan 12048	Forrestfield
Lot 302 on Deposited Plan 415020	Maida Vale
Lot 302 on Deposited Plan 420526	High Wycombe
Lot 302 on Deposited Plan 47669	High Wycombe
Lot 303 on Deposited Plan 420526	High Wycombe
Lot 3034 on Plan 12152	Kalamunda

Property	Locality
Lot 3041 on Plan 12250	Lesmurdie
Lot 3059 on Plan 12494	Forrestfield
Lot 3063 on Diagram 53730	Lesmurdie
Lot 3065 on Plan 9232	Kalamunda
Lot 3093 on Plan 12605	Forrestfield
Lot 3095 on Plan 12605	Forrestfield
Lot 3097 on Plan 12493	Forrestfield
Lot 31 on Deposited Plan 205160	Bickley
Lot 3111 on Plan 9232	Kalamunda
Lot 3115 on Diagram 48569	Lesmurdie
Lot 312 on Deposited Plan 67412	Wattle Grove
Lot 313 on Deposited Plan 70410	Kalamunda
Lot 3136 on Diagram 54426	Forrestfield
Lot 3146 on Plan 12830	Carmel
Lot 319 on Deposited Plan 64846	Bickley
Lot 32 on Deposited Plan 205160	Carmel
Lot 320 on Deposited Plan 64846	Pickering Brook
Lot 321 on Deposited Plan 64846	Wattle Grove
Lot 322 on Deposited Plan 70410	Kalamunda
Lot 3227 on Diagram 59180	Kalamunda
Lot 3229 on Plan 13109	Lesmurdie
Lot 3275 on Plan 8488	Lesmurdie
Lot 3276 on Diagram 30618	Kalamunda
Lot 33 on Deposited Plan 49415	High Wycombe
Lot 33 on Diagram 12405	Kalamunda
Lot 33 on Diagram 27758	Kalamunda
Lot 33 on Plan 3379	Wattle Grove
Lot 3309 on Plan 10713	Lesmurdie
Lot 3311 on Diagram 43070	Kalamunda
Lot 34 on Diagram 12405	Kalamunda
Lot 3415 on Deposited Plan 216656	Lesmurdie
Lot 3455 on Diagram 49822	Kalamunda
Lot 3486 on Diagram 50253	Wattle Grove
Lot 3487 on Diagram 55585	Forrestfield
Lot 3495 on Plan 12606	Forrestfield
Lot 3501 on Deposited Plan 216656	Lesmurdie
Lot 351 on Deposited Plan 414638	Wattle Grove
Lot 3534 on Diagram 45317	Kalamunda
Lot 36 on Deposited Plan 40101	Walliston
Lot 3614 on Diagram 71634	Lesmurdie

Property	Locality
Lot 3669 on Deposited Plan 189227	Kalamunda
Lot 367 on Deposited Plan 45270	Wattle Grove
Lot 3677 on Diagram 42077	Forrestfield
Lot 3691 on Diagram 5822	Kalamunda
Lot 372 on Deposited Plan 214176	Kalamunda
Lot 372 on Deposited Plan 214176	Kalamunda
Lot 3729 on Plan 10592	Kalamunda
Lot 3803 on Plan 18283	Forrestfield
Lot 3811 on Diagram 41283	Lesmurdie
Lot 3811 on Plan 9902	Lesmurdie
Lot 3828 on Diagram 82426	Lesmurdie
Lot 3883 on Diagram 85412	Forrestfield
Lot 3888 on Diagram 85152	Forrestfield
Lot 3889 on Diagram 85645	Forrestfield
Lot 3974 on Plan 14272	Lesmurdie
Lot 4 on Diagram 12473	Forrestfield
Lot 400 on Deposited Plan 41619	Forrestfield
Lot 400 on Deposited Plan 42877	Wattle Grove
Lot 400 on Deposited Plan 51025	Wattle Grove
Lot 4000 on Deposited Plan 411342	Wattle Grove
Lot 4000 on Deposited Plan 61515	Lesmurdie
Lot 4000 on Deposited Plan 74128	Wattle Grove
Lot 4000 on Deposited Plan 74996	Wattle Grove
Lot 4001 on Deposited Plan 61515	Lesmurdie
Lot 4102 on Diagram 89806	Kewdale
Lot 4112 on Deposited Plan 219472	Forrestfield
Lot 4122 on Plan 9232	Kalamunda
Lot 4140 on Plan 21936	Walliston
Lot 4153 on Deposited Plan 193770	Lesmurdie
Lot 418 on Deposited Plan 42859	Wattle Grove
Lot 42 on Diagram 57369	Kalamunda
Lot 422 on Deposited Plan 207441	Kalamunda
Lot 422 on Deposited Plan 207441	Kalamunda
Lot 423 on Diagram 22006	Lesmurdie
Lot 424 on Deposited Plan 167196	Kalamunda
Lot 428 on Diagram 25051	Lesmurdie
Lot 428 on Diagram 25051	Lesmurdie
Lot 431 on Deposited Plan 168475	Kalamunda
Lot 435 on Deposited Plan 171164	Kalamunda
Lot 436 on Plan 6748	Lesmurdie

Property	Locality
Lot 437 on Plan 6748	Lesmurdie
Lot 438 on Deposited Plan 173647	Lesmurdie
Lot 4426 on Plan 23736	Wattle Grove
Lot 443 on Deposited Plan 214176	Kalamunda
Lot 444 on Deposited Plan 214176	Kalamunda
Lot 46 on Plan 16028	High Wycombe
Lot 468 on Diagram 25935	Lesmurdie
Lot 469 on Deposited Plan 171335	Lesmurdie
Lot 472 on Diagram 30944	Lesmurdie
Lot 473 on Plan 8339	Lesmurdie
Lot 4752 on Deposited Plan 255679	Kalamunda
Lot 477 on Deposited Plan 172608	Kalamunda
Lot 486 on Deposited Plan 402499	Wattle Grove
Lot 4860 on Deposited Plan 35035	Wattle Grove
Lot 49 on Diagram 40814	High Wycombe
Lot 4923 on Deposited Plan 35115	Wattle Grove
Lot 4983 on Deposited Plan 39495	Wattle Grove
Lot 5 on Diagram 14851	Walliston
Lot 5 on Diagram 42251	Kalamunda
Lot 5 on Diagram 71066	Maida Vale
Lot 5 on Plan 2625	Kalamunda
Lot 50 on Diagram 25138	Wattle Grove
Lot 50 on Diagram 2787	Kalamunda
Lot 50 on Diagram 33847	High Wycombe
Lot 500 on Deposited Plan 407010	Kalamunda
Lot 500 on Deposited Plan 412755	Carmel
Lot 500 on Deposited Plan 414639	Wattle Grove
Lot 500 on Deposited Plan 59358	Lesmurdie
Lot 500 on Deposited Plan 71902	Kalamunda
Lot 500 on Deposited Plan 72820	Kalamunda
Lot 500 on Deposited Plan 74459	Lesmurdie
Lot 5000 on Deposited Plan 413818	Wattle Grove
Lot 5001 on Deposited Plan 413819	Wattle Grove
Lot 5002 on Deposited Plan 413820	Wattle Grove
Lot 5003 on Deposited Plan 413821	Wattle Grove
Lot 501 on Deposited Plan 414639	Wattle Grove
Lot 501 on Deposited Plan 414990	Carmel
Lot 501 on Deposited Plan 59259	Forrestfield
Lot 501 on Deposited Plan 65823	Wattle Grove
Lot 502 on Deposited Plan 414639	Wattle Grove

Property	Locality
Lot 503 on Deposited Plan 172594	Lesmurdie
Lot 503 on Deposited Plan 62578	Kalamunda
Lot 504 on Deposited Plan 172594	Lesmurdie
Lot 504 on Deposited Plan 413218	Carmel
Lot 505 on Deposited Plan 413218	Carmel
Lot 507 on Deposited Plan 50389	High Wycombe
Lot 5070 on Deposited Plan 40232	Wattle Grove
Lot 51 on Diagram 24961	Wattle Grove
Lot 510 on Deposited Plan 406193	Wattle Grove
Lot 511 on Deposited Plan 406193	Wattle Grove
Lot 513 on Deposited Plan 172608	Kalamunda
Lot 5131 on Diagram 9265	Maida Vale
Lot 514 on Deposited Plan 172594	Lesmurdie
Lot 515 on Diagram 33801	Kalamunda
Lot 516 on Deposited Plan 54700	High Wycombe
Lot 520 on Deposited Plan 62534	Forrestfield
Lot 538 on Deposited Plan 411999	Walliston
Lot 54 on Diagram 32197	Kalamunda
Lot 543 on Diagram 50679	Forrestfield
Lot 546 on Diagram 31981	Lesmurdie
Lot 549 on Plan 9041	Lesmurdie
Lot 55 on Diagram 31498	Forrestfield
Lot 550 on Deposited Plan 62110	Lesmurdie
Lot 550 on Plan 9041	Lesmurdie
Lot 551 on Plan 9041	Lesmurdie
Lot 552 on Plan 7230	Lesmurdie
Lot 554 on Deposited Plan 421748	Forrestfield
Lot 555 on Deposited Plan 421748	Forrestfield
Lot 555 on Deposited Plan 61573	Kalamunda
Lot 555 on Deposited Plan 77777	High Wycombe
Lot 564 on Deposited Plan 402810	Lesmurdie
Lot 574 on Plan 9450	Lesmurdie
Lot 575 on Plan 9450	Lesmurdie
Lot 577 on Deposited Plan 172608	Kalamunda
Lot 58 on Deposited Plan 240268	Kalamunda
Lot 58 on Deposited Plan 240268	Kalamunda
Lot 581 on Deposited Plan 71883	Lesmurdie
Lot 583 on Diagram 46735	Lesmurdie
Lot 585 on Diagram 48890	Lesmurdie
Lot 586 on Plan 4684	Forrestfield

Property	Locality
Lot 587 on Diagram 22366	Kalamunda
Lot 589 on Plan 8339	Lesmurdie
Lot 591 on Deposited Plan 182723	Kalamunda
Lot 591 on Deposited Plan 69437	Pickering Brook
Lot 595 on Plan 8729	Lesmurdie
Lot 596 on Plan 13485	Gooseberry Hill
Lot 597 on Deposited Plan 185384	Lesmurdie
Lot 597 on Deposited Plan 185384	Lesmurdie
Lot 6 on Deposited Plan 202203	Carmel
Lot 6 on Deposited Plan 202204	Kalamunda
Lot 6 on Plan 2625	Kalamunda
Lot 600 on Deposited Plan 411946	Lesmurdie
Lot 601 on Deposited Plan 24621	High Wycombe
Lot 602 on Deposited Plan 29827	High Wycombe
Lot 61 on Deposited Plan 208872	Pickering Brook
Lot 610 on Deposited Plan 192596	Kalamunda
Lot 611 on Deposited Plan 193255	Kalamunda
Lot 614 on Deposited Plan 195349	Lesmurdie
Lot 618 on Deposited Plan 28229	Kalamunda
Lot 619 on Deposited Plan 28229	Kalamunda
Lot 620 on Deposited Plan 29636	Kalamunda
Lot 622 on Deposited Plan 35723	Gooseberry Hill
Lot 650 on Deposited Plan 413813	Wattle Grove
Lot 66 on Diagram 44729	Maida Vale
Lot 66 on Diagram 49833	High Wycombe
Lot 7 on Plan 2625	Kalamunda
Lot 7 on Plan 9232	Kalamunda
Lot 70 on Plan 3380	Wattle Grove
Lot 71 on Plan 3380	Wattle Grove
Lot 7271 on Plan 7487	High Wycombe
Lot 7271 on Plan 7487	High Wycombe
Lot 746 on Deposited Plan 67362	Wattle Grove
Lot 749 on Deposited Plan 68302	Wattle Grove
Lot 7582 on Diagram 26229	Kalamunda
Lot 7678 on Diagram 27722	Gooseberry Hill
Lot 77 on Plan 14422	Maida Vale
Lot 78 on Plan 13418	High Wycombe
Lot 782 on Deposited Plan 72990	High Wycombe
Lot 7876 on Plan 8160	Forrestfield
Lot 7883 on Plan 8080	Gooseberry Hill

Property	Locality
Lot 7883 on Plan 8080	Gooseberry Hill
Lot 7885 on Plan 8193	Forrestfield
Lot 79 on Deposited Plan 101074	Kalamunda
Lot 79 on Deposited Plan 49522	High Wycombe
Lot 7929 on Diagram 30799	Gooseberry Hill
Lot 7936 on Diagram 30681	Maida Vale
Lot 7945 on Plan 8325	High Wycombe
Lot 7970 on Diagram 31214	Gooseberry Hill
Lot 8 on Diagram 16498	Kalamunda
Lot 8 on Plan 9232	Kalamunda
Lot 8000 on Deposited Plan 413748	Forrestfield
Lot 8000 on Deposited Plan 66510	High Wycombe
Lot 8001 on Deposited Plan 45024	Wattle Grove
Lot 8001 on Deposited Plan 45043	Forrestfield
Lot 8001 on Deposited Plan 57973	Wattle Grove
Lot 8001 on Deposited Plan 69083	Forrestfield
Lot 8002 on Deposited Plan 55799	Wattle Grove
Lot 8008 on Deposited Plan 415579	Forrestfield
Lot 801 on Deposited Plan 419725	Carmel
Lot 8013 on Deposited Plan 413765	Forrestfield
Lot 8015 on Deposited Plan 419653	Forrestfield
Lot 802 on Deposited Plan 419725	Carmel
Lot 809 on Deposited Plan 202178	Pickering Brook
Lot 810 on Deposited Plan 202178	Pickering Brook
Lot 8160 on Plan 8494	Forrestfield
Lot 8161 on Plan 8494	Forrestfield
Lot 8174 on Diagram 32960	Gooseberry Hill
Lot 8186 on Plan 8645	High Wycombe
Lot 8227 on Plan 8496	Gooseberry Hill
Lot 8228 on Plan 8496	Gooseberry Hill
Lot 824 on Deposited Plan 71337	High Wycombe
Lot 8250 on Diagram 33831	Maida Vale
Lot 827 on Deposited Plan 51028	Wattle Grove
Lot 8295 on Plan 8771	High Wycombe
Lot 8337 on Diagram 34268	Gooseberry Hill
Lot 8361 on Deposited Plan 217852	Maida Vale
Lot 8369 on Diagram 33545	Maida Vale
Lot 8455 on Plan 9177	Forrestfield
Lot 846 on Deposited Plan 55098	Wattle Grove
Lot 85 on Deposited Plan 222581	Kalamunda

Property	Locality
Lot 8536 on Diagram 40042	High Wycombe
Lot 8562 on Diagram 39705	High Wycombe
Lot 86 on Deposited Plan 214724	Pickering Brook
Lot 8667 on Diagram 38828	Gooseberry Hill
Lot 8785 on Diagram 41034	Forrestfield
Lot 88 on Deposited Plan 76893	Maida Vale
Lot 88 on Deposited Plan 76893	Maida Vale
Lot 8826 on Diagram 33828	Maida Vale
Lot 8876 on Deposited Plan 217852	Maida Vale
Lot 888 on Deposited Plan 49229	Wattle Grove
Lot 8882 on Diagram 43692	Maida Vale
Lot 8882 on Diagram 43692	Maida Vale
Lot 8911 on Plan 8080	Gooseberry Hill
Lot 8912 on Deposited Plan 190012	Gooseberry Hill
Lot 8920 on Deposited Plan 185420	Gooseberry Hill
Lot 8920 on Deposited Plan 185420	Gooseberry Hill
Lot 8921 on Plan 8056	Gooseberry Hill
Lot 8922 on Plan 8056	Gooseberry Hill
Lot 8925 on Diagram 43714	Maida Vale
Lot 8927 on Deposited Plan 180653	High Wycombe
Lot 8928 on Deposited Plan 180653	High Wycombe
Lot 9 on Diagram 22735	Forrestfield
Lot 9 on Plan 13485	Gooseberry Hill
Lot 9090 on Diagram 32102	Gooseberry Hill
Lot 9099 on Plan 8612	Forrestfield
Lot 91 on Deposited Plan 69722	Wattle Grove
Lot 9120 on Diagram 46577	Forrestfield
Lot 9127 on Deposited Plan 43123	Forrestfield
Lot 919 on Deposited Plan 58761	Wattle Grove
Lot 9194 on Diagram 33829	Maida Vale
Lot 9229 on Plan 8616	High Wycombe
Lot 9233 on Plan 8852	Gooseberry Hill
Lot 9237 on Plan 8852	Gooseberry Hill
Lot 9257 on Diagram 33975	Maida Vale
Lot 93 on Deposited Plan 110072	Carmel
Lot 9314 on Diagram 47177	Maida Vale
Lot 9318 on Diagram 46221	Maida Vale
Lot 9324 on Diagram 47181	Maida Vale
Lot 9388 on Plan 11300	Forrestfield
Lot 9392 on Plan 11273	Maida Vale

Property	Locality
Lot 9393 on Plan 11273	Maida Vale
Lot 9397 on Diagram 45226	Maida Vale
Lot 9455 on Deposited Plan 181821	Forrestfield
Lot 9456 on Diagram 29542	High Wycombe
Lot 9462 on Deposited Plan 182008	High Wycombe
Lot 9463 on Deposited Plan 182008	High Wycombe
Lot 9464 on Deposited Plan 182009	High Wycombe
Lot 9479 on Plan 10863	Forrestfield
Lot 9524 on Diagram 47217	Forrestfield
Lot 9550 on Diagram 49050	Forrestfield
Lot 9611 on Plan 11729	Forrestfield
Lot 9639 on Plan 11612	Forrestfield
Lot 9642 on Diagram 52100	Forrestfield
Lot 9673 on Plan 11818	Forrestfield
Lot 9674 on Plan 11818	Forrestfield
Lot 9685 on Deposited Plan 214183	Forrestfield
Lot 9686 on Plan 12014	Forrestfield
Lot 9687 on Plan 12015	Forrestfield
Lot 97 on Diagram 53969	Forrestfield
Lot 97 on Diagram 53969	Forrestfield
Lot 97 on Diagram 59451	Maida Vale
Lot 9747 on Plan 12033	Forrestfield
Lot 9773 on Plan 11896	Maida Vale
Lot 9835 on Diagram 53851	Forrestfield
Lot 9892 on Diagram 53048	Forrestfield
Lot 99 on Deposited Plan 30216	Wattle Grove
Lot 9919 on Diagram 42712	Maida Vale
Lot 9920 on Diagram 45416	Maida Vale
Lot 9972 on Plan 12650	Forrestfield
Lot 9972 on Plan 12651	Forrestfield
Lot 9972 on Plan 12653	Forrestfield
Reserve 17343	Piesse Brook
Reserve 27799	Gooseberry Hill
Reserve 9311	Carmel
Reserve 27799	Gooseberry Hill

Appendix B. Site characteristics

B.1. Site characteristics

The information provided below describes the key characteristics of the area proposed to be cleared and is based on the best information available to DWER at the time of this assessment. This information was used to inform the assessment of the clearing against the Clearing Principles, contained in Appendix C.

Characteristic	Details
Local context	The area proposed to be cleared is up to five hectares of Typha species along water courses and wetlands in the City of Kalamunda area in the intensive land use zone of Western Australia. Aerial imagery indicates the local area (10-kilometre radius from the centre of the area proposed to be cleared) retains approximately 45 per cent of the original native vegetation cover.
Ecological linkage	The application area forms part of the Perth regional ecological linkages. The proposed clearing of the application area will not sever or severely impact the function of this ecological linkage.
Conservation areas	The proposed clearing includes areas in Mundy regional park and Bush forever sites 45, 316, 440, 213 and 320. As the weed removal and vegetation would provide a net environmental benefit through the re-establishment of a native vegetation community, there is not likely to be any significant impacts to the Bush Forever areas or Mundy regional park.
Vegetation description	Photographs supplied by the applicant indicate the vegetation within the proposed clearing area consists of *Typha* species. Representative photos are available in Appendix E. Swan Coastal Plain vegetation complexes as described and mapped by Heddle et al. (1980) as updated by Webb et al. (2016) within the application area include: • Forrestfield Complex 29: Vegetation ranges from open forest of *Corymbia calophylla* (Marri) - *Eucalyptus wandoo* (Wandoo) - *Eucalyptus marginata* (Jarrah) to open forest of *Eucalyptus marginata* (Jarrah) - *Corymbia calophylla* (Marri) - *Allocasuarina fraseriana* (Sheoak) - *Banksia* species. Fringing woodland of *Eucalyptus rudis* (Flooded Gum) in the gullies that dissect this landform. • Southern River Complex 42: Open woodland of *Corymbia calophylla* (Marri) - *Eucalyptus marginata* (Jarrah) - *Banksia* species with fringing woodland of *Eucalyptus rudis* (Flooded Gum) - *Melaleuca rhaphiophylla* (Swamp Paperbark) along creek beds. Mattiske and Havel (1998) have described the mapped vegetation complexes within the eastern portion of the application area as: • Dwellingup 79: Open forest of *Eucalyptus marginata* subsp. *marginata-Corymbia calophylla* on lateritic uplands in subhumid and semiarid zones. • Murray 1: Open forest of *Eucalyptus marginata* subsp. *marginata-Corymbia calophylla-Eucalyptus patens* on valley slopes to woodland of *Eucalyptus rudis-Melaleuca rhaphiophylla* on the valley floors in humid and subhumid zones. • Yarragil 1: Open forest of *Eucalyptus marginata* subsp. *marginata-Corymbia calophylla* on slopes with mixtures of *Eucalyptus patens* and *Eucalyptus megacarpa* on the valley floors in humid and subhumid zones. • Helena 2: Mosaic of open forest of *Eucalyptus marginata* subsp. *thalassica-Corymbia calophylla* and woodland of *Eucalyptus wandoo* with some *Eucalyptus accedens* and *Eucalyptus rudis* on the deeper soils ranging to closed heaths and lithic complex on shallow soils associated with granite on steep slopes of valleys in semiarid and arid zones.

Characteristic	Details
	• Darling Scarp 104: Mosaic of open forest of *Eucalyptus marginata* subsp. *marginata-Corymbia calophylla*, with some admixtures with *Eucalyptus laeliae* in the north (subhumid zone), with occasional *Eucalyptus marginata* subsp. *elegantella* (mainly in subhumid zone) and *Corymbia haematoxylon* in the south (humid zone) on deeper soils adjacent to outcrops, woodland of *Eucalyptus wandoo* (subhumid and semiarid zones), low woodland of *Allocasuarina huegeliana* on shallow soils over granite outcrops, closed heath of Myrtaceae-Proteaceae species and lithic complex on or near granite outcrops in all climate zones.
Vegetation condition	Aerial imagery and photographs supplied by the applicant indicate the vegetation within the proposed clearing area is in a completely degraded to good (Keighery, 1994) condition. The full Keighery (1994) condition rating scale is provided in Appendix D. Representative photos are available in Appendix E.
Climate and landform	The climate is classified as Mediterranean, with dry, hot summers and cool, wet winters (BOM, 2023). • average rainfall is 759.7 mm per year, with the majority falling between May and August • average maximum temperature ranges from 18 in July to 32 in February • average minimum temperature ranges from 8.1 in July and August to 17.6 in February The application area comprise five landforms including: • Murray Valleys System: Western Darling Range from the Avon Valley to Harvey. Deeply incised valleys with Red loamy earths, shallow duplexes and rock outcrop and Jarrah-marri-wandoo forest and woodland with mixed shrubland • Darling Plateau System: Lateritic plateau. Duplex sandy gravels, loamy gravels and wet soils. Jarrah-marri-wandoo forest and woodland. • Pinjarra System: Swan Coastal Plain from Perth to Capel. Poorly drained coastal plain with variable alluvial and aeolian soils. Variable vegetation includes Jarrah, marri, wandoo, paperbark sheoaks and rudis. • Forestfield System: Undulating foot slopes of the Darling and Whicher Scarps. Duplex sandy gravels, pale deep sands and grey deep sandy duplexes. Woodland of E.marginata, calophylla and wandoo and some B.grandis. • Bassendean System: Swan Coastal Plain from Busselton to Jurien. Sand dunes and sandplains with pale deep sand, semi-wet and wet soil. Banksia-paperbark woodlands and mixed heaths.
Soil description	Mapped soil types (Schoknecht et al, 2013) include: • Balgobin 1 Phase: Valleys within Darling Scarp with sideslopes <35%. Variable moderately well to well drained duplex and gradational soils. Common rock outcrop. • Dwellingup 1 Phase: Crests and gently inclined (<10%) terrain dominated by lateritic duricrust and very shallow gravelly brownish sands, pale brown sands and earthy sands. • Dwellingup 2 Phase: Very gently to gently undulating terrain (<10%) with well drained, shallow to moderately deep gravelly brownish sands, pale brown sands and earthy sands overlying lateritic duricrust. • EnvGeol Mgs1 Phase: PEBBLY SILT - strong brown silt with common, fine to occasionally coarse-grained, sub-rounded laterite quartz, heavily weathered granite pebble, some fine to medium-grained quartz sand. • EnvGeol Mgs2 Phase: GRAVELLY SILT - strong brown, tough with common pebbles of fine to coarse-grained, sub-rounded granite, some dolerite and rare sandstone (SS) variable sand content. • EnvGeol S10 Phase: SAND - as S8 as relatively thin veneer over sandy clay to clayey sand. Of eolian origin. • EnvGeol S8 Phase: SAND - very light grey at surface, yellow at depth, fine to medium-grained, sub-rounded quartz, moderately well sorted of eolian origin.

Characteristic	Details
	• Forrestfield (D Range) F1 Phase: Foot and low slopes < 10% with deep rapidly drained siliceous yellow brown sands, and pale or bleached sands with yellow-brown subsoil. Shrubland of unidentified species. • Forrestfield (D Range) F2 Phase: Foot and low slopes < 10%.Well drained gravelly yellow or brown duplex soils with sandy topsoil. Woodland of E.marginata, E. calophylla and some B.grandis. • Forrestfield (D Range) F3 Phase: Foot and low slopes <10%. Well drained gravelly yellow or red duplex soils with sandy loam to loam topsoil. Woodland of E. wandoo and E. marginata. • Forrestfield F4 Phase: Incised stream channels within gentle slopes with deep acidic yellow duplex soils and sandy alluvial gradational brown earths. • Forestfield System: Undulating foot slopes of the Darling and Whicher Scarps. Duplex sandy gravels, pale deep sands and grey deep sandy duplexes. Woodland of E.marginata, calophylla and wandoo and some B.grandis. • Helena 1 Phase: Moderate to steep sideslopes (10-35%) and narrow drainage floors with areas of rock outcrop. Variable mostly well drained duplex and gradational soils. Wandoo and accedens woodland, E.marginata on gravels, Acacia & Casuarina on rocky soils. • Helena 2 Phase: Gentle to moderately inclined sideslopes and lower slopes (3-25%) with few areas of rock outcrop. Variable mostly well drained duplex and gradational soils. E.wandoo & accedens woodland, E.marginata on gravels, Acacia and Casuarina on rocky soils. • Helena Subsystem: Helena are the most deeply entrenched valleys with often >30% and 200m relief. Soils are mainly red and yellow earths but there are some duplex soils all of which overly rocky basements. • Myara 1 Phase: Gentle to steep valley sideslopes (5-35%) and narrow incised valley floors. Variable well drained duplex and gradational soils. Common rock outcrop. E. wandoo, E.accedens and E.marginata on sandy gravels and Acacia spp. On shallow soils. • Pinjarra System: Swan Coastal Plain from Perth to Capel. Poorly drained coastal plain with variable alluvial and aeolian soils. Variable vegetation includes Jarrah, marri, wandoo, paperbark sheoaks and rudis. • Pinjarra, Phase Gf1: Very gently undulating plain. Moderately well drained yellow duplex or gradational soils with sand to sandy loam topsoil. Woodland of E. wandoo and E. calophylla. • Pinjarra, Phase Gf2: Very gently undulating plain with imperfectly drained mottled yellow duplex soils with sand to sandy loam topsoil. Low woodland of E. wandoo. E. rudis along streams. C. Obesa on salt affected land. • Pinjarra, Phase Gf3: Level to very gently sloping plain.Poorly drained mottled yellow earths with loamy topsoil. Low woodland of Melaleuca spp., and E. rudis. Casuarina obesa on salt affected areas. • Pinjarra, Phase Gf5: Incised drainage channels with poorly drained gradational mottled yellow earths. Shrubland of Melaleucas and other low shrubs. • Pinjarra, Phase Gf6: Seasonally inundated swamps with very poorly drained uniform non-cracking clays. • Pinjarra, Phase Gf7: Minor rises with deep rapidly drained brownish, siliceous or bleached sands underlain by mottled yellow clay. Low woodland of B. prionotes and some tall E. calophylla with E. rudis along streamlines. • Pinjarra, Phase Gf9: Minor sandy rises (aeolian deposits) with moderately deep well drained sands overlying gravelly mottled clay. • Pinjarra, Ya2 Phase: Plain and swamp margins with deep poorly drained grey siliceous sand overlying clay. • Yarragil 1 Phase: Very gentle to moderately inclined concave sideslopes. Moderately well drained yellow duplex soils and yellow and brown massive earths and gravels. Woodland of E. wandoo, E. marginata, E. Accedens. Casuarina obesa on salt affected areas. • Yarragil 4 Phase: Valley floors with some poorly drained mottled yellow duplex soils and gentle lower slopes with moderately well to well drained loamy and sandy earths, gravels and duplex soils. Low woodland of E. wandoo, E. marginata and Acacia spp.

Characteristic	Details
	(DPIRD, 2019) • Yarragil Subsystem: Shallow, narrow, upper valleys of the deeply dissected Murray, Bindoon and Helena units. Alluvial, clay and loam soils, moderately well drained, often gravelly, with some sands and loams. Salt prone. Woodland of E. wandoo, E. accedens.
Land degradation risk	There is a high amount of variability in the land degradation risk, between the 29 soils occurring across the application area. Subsurface acidification was a high risk in most of the soil types, with high wind erosion and phosphorus export risk in some soil types and mostly low to medium erosion risk for the rest of the land degradation risks.
Waterbodies	The desktop assessment and aerial imagery indicated that the application area intersects a consanguineous wetland suite, a geomorphic wetland on the swan coastal plain. The application area intersects minor tributaries of the Swan, Canning and Helena river.
Hydrogeography	The application area intersects Canning River and Tributaries RIWI area, the Victoria Reservoir Catchment Area and the Middle Helena Catchment Area zone for PDWSA, the Swan River System Surface Water Area and the Victoria Dam Surface Water Area for RIWI.
Flora	A total of 138 conservation significant flora were recorded in the local area with 21 recorded in the application area. There are 53 conservation significant flora associated with riparian vegetation, with two species described in association with Typha. Twenty four conservation significant flora are also in the same soil type as the application area. Noting the purpose of the clearing is to target Typha, clearing is not expected to impact these species.
Ecological communities	Fifteen Priority and Threatened Ecological Communities are recorded in the local area with six recorded within the application area none of which include Typha in their species list. Noting the purpose of the clearing, clearing is not expected to impact these communities.
Fauna	There are 64 conservation significant fauna in the local area with 10 recorded in the application area. A further 31 species are recorded in habitats similar to the application area. The application area intersects seven roosts for Carnaby cockatoo and includes important feeding areas. Black cockatoos do not utilise Typha or other sedges as foraging, nesting or roosting habitat.

B.2. Flora analysis table

With consideration for the site characteristics set out above, relevant datasets (see Appendix F.1), impacts to the following conservation significant flora required further consideration.

Species name	Conservation status	Suitable vegetation type? [Y/N]	Suitable soil type? [Y/N]	Distance of closest record to application area (km)	Number of known records (total)	Are surveys adequate to identify? [Y, N, N/A]
Amanita quenda	1			3.14	1	N/A
Andersonia gracilis	T	Y	Y	0.00	10	N/A
Aponogeton hexatepalus	4	Y	Y	2.03	11	N/A
Austrostipa bronweniae	T		Y	0.71	6	N/A
Babingtonia urbana	3		Y	1.91	11	N/A
Bolboschoenus fluviatilis	1			3.72	5	N/A
Bossiaea modesta	2	Y	Y	1.75	26	N/A
Byblis gigantea	3	Y	Y	0.00	20	N/A
Calandrinia uncinella	1		Y	1.89	3	N/A
Calectasia grandiflora	2		Y	2.26	3	N/A
Calytrix breviseta subsp. *breviseta*	T	Y	Y	1.04	21	N/A

Species name	Conservation status	Suitable vegetation type? [Y/N]	Suitable soil type? [Y/N]	Distance of closest record to application area (km)	Number of known records (total)	Are surveys adequate to identify? [Y, N, N/A]
Carex tereticaulis	3	Y	Y	3.70	5	N/A
Chamaescilla gibsonii	3			3.12	1	N/A
Conospermum undulatum	T	Y	Y	0.00	206	N/A
Cyathochaeta teretifolia	3	Y	Y	9.29	6	N/A
Diplolaena andrewsii	T	Y	Y	6.14	23	N/A
Diuris brevis	2			3.43	1	N/A
Diuris drummondii	T	Y	Y	1.59	2	N/A
Diuris purdiei	T	Y	Y	1.75	8	N/A
Drosera occidentalis	4		Y	1.77	7	N/A
Eleocharis keigheryi	T	Y	Y	1.79	7	N/A
Eremophila glabra subsp. *chlorella*	T		Y	0.76	15	N/A
Eryngium pinnatifidum subsp. Palustre (G.J. Keighery 13459)	3		Y	2.26	2	N/A
Eryngium sp. Subdecumbens (G.J. Keighery 5390)	3		Y	2.26	4	N/A
Grevillea manglesii subsp. *ornithopoda*	2			8.32	1	N/A
Grevillea thelemanniana	T	Y	Y	0.00	51	N/A
Haloragis scoparia	1		Y	5.97	1	N/A
Hydrocotyle lemnoides	4		Y	2.14	10	N/A
Hydrocotyle striata	1	Y	Y	0.00	3	N/A
Jacksonia gracillima	3	Y	Y	0.88	3	N/A
Lepidosperma rostratum	T		Y	0.64	40	N/A
Levenhookia preissii	1		Y	3.42	10	N/A
Meionectes tenuifolia	3	Y	Y	3.16	4	N/A
Melaleuca viminalis	2	Y	Y	0.12	2	N/A
Microtis quadrata	4	Y	Y	3.17	1	N/A
Myriophyllum echinatum	3	Y		0.87	4	N/A
Ornduffia submersa	4	Y	Y	0.24	8	N/A
Phyllangium palustre	2		Y	3.16	1	N/A
Ptilotus pyramidatus	T		Y	2.47	3	N/A
Schoenus benthamii	3	Y	Y	0.32	11	N/A
Schoenus capillifolius	3		Y	2.26	8	N/A
Schoenus loliaceus	2			3.31	1	N/A
Schoenus natans	4		Y	3.00	4	N/A
Schoenus pennisetis	3	Y	Y	0.47	11	N/A
Schoenus sp. Beaufort (G.J. Keighery 6291)	1			3.31	1	N/A
Schoenus sp. Waroona (G.J. Keighery 12235)	3		Y	2.26	1	N/A
Sporobolus blakei	3	Y	Y	1.29	1	N/A
Stylidium aceratum	3		Y	2.26	4	N/A
Stylidium longitubum	4	Y	Y	1.26	5	N/A
Stylidium paludicola	3		Y	9.29	2	N/A

Species name	Conservation status	Suitable vegetation type? [Y/N]	Suitable soil type? [Y/N]	Distance of closest record to application area (km)	Number of known records (total)	Are surveys adequate to identify? [Y, N, N/A]
Synaphea sp. Fairbridge Farm (D. Papenfus 696)	T		Y	1.55	2	N/A
Trithuria occidentalis	T		Y	3.19	6	N/A
Verticordia lindleyi subsp. *lindleyi*	4	Y	Y	0.00	43	N/A

T: threatened, CR: critically endangered, EN: endangered, VU: vulnerable, P: priority

B.3. Fauna analysis table

With consideration for the site characteristics set out above, relevant datasets (see Appendix F.1), impacts to the following conservation significant fauna required further consideration.

Species name	Common name	Class	Conservation status	Suitable vegetation type? [Y/N]	Distance of closest record to application area (km)	Number of known records (total)	Are surveys adequate to identify? [Y, N, N/A]
Actitis hypoleucos	common sandpiper	BIRD	MI		2.23	1	N/A
Apus pacificus	Fork-tailed swift	BIRD	MI	Y	3.96	7	N/A
Botaurus poiciloptilus	Australasian bittern	BIRD	EN	Y	5.20	4	N/A
Calidris acuminata	Sharp-tailed sandpiper	BIRD	MI		7.38	3	N/A
Calidris ferruginea	curlew sandpiper	BIRD	CR		6.44	12	N/A
Calidris melanotos	Pectoral Sandpiper	BIRD	MI		6.98	1	N/A
Calidris ruficollis	Red-necked stint	BIRD	MI		7.38	17	N/A
Calidris subminuta	Long-toed Stint	BIRD	MI		9.17	1	N/A
Dasyurus geoffroii	chuditch, western quoll	MAMMAL	VU	Y	0.00	117	N/A
Hydromys chrysogaster	Water-rat, rakali	MAMMAL	P4	Y	0.02	35	N/A
Isoodon fusciventer	Quenda, southwestern brown bandicoot	MAMMAL	P4	Y	0.00	1198	N/A
Ixobrychus dubius	Australian little bittern	BIRD	P4		8.76	1	N/A
Ixobrychus flavicollis australis (southwest subpop.)	Black bittern (southwest subpop.)	BIRD	P2	Y	4.17	2	N/A
Limosa lapponica	Bar-tailed godwit	BIRD	MI		7.38	5	N/A
Limosa limosa	Black-tailed godwit	BIRD	MI		7.38	1	N/A
Myrmecobius fasciatus	numbat, walpurti	MAMMAL	EN	Y	0.00	7	N/A

Species name	Common name	Class	Conservation status	Suitable vegetation type? [Y/N]	Distance of closest record to application area (km)	Number of known records (total)	Are surveys adequate to identify? [Y, N, N/A]
Neelaps calonotos	Black-striped snake, black-striped burrowing snake	REPTILE	P3	Y	0.00	47	N/A
Notamacropus irma	western brush wallaby	MAMMAL	P4	Y	0.00	25	N/A
Numenius phaeopus	Whimbrel	BIRD	MI		4.31	1	N/A
Oxyura australis	Blue-billed duck	BIRD	P4	Y	0.14	199	N/A
Phascogale tapoatafa wambenger	South-western brush-tailed phascogale, wambenger	MAMMAL	CD	Y	0.00	64	N/A
Plegadis falcinellus	Glossy ibis	BIRD	MI	Y	4.31	3	N/A
Pluvialis squatarola	Grey plover	BIRD	MI		7.38	18	N/A
Setonix brachyurus	Quokka	MAMMAL	VU	Y	0.06	12	N/A
Thalasseus bergii	Crested tern	BIRD	MI	Y	2.33	143	N/A
Tringa glareola	Wood sandpiper	BIRD	MI		2.23	4	N/A
Tringa nebularia	Common greenshank, greenshank	BIRD	MI	Y	0.00	23	N/A
Tringa stagnatilis	Marsh sandpiper, little greenshank	BIRD	MI		2.23	2	N/A
Westralunio carteri	Carter's freshwater mussel	INVERTEBRATE	VU	Y	0.43	56	N/A

B.4. Ecological community analysis table

Community name	Conservation status	Suitable habitat features? [Y/N]	Distance of closest record to application area (km)	Number of known records (total)	Are surveys adequate to identify? [Y, N, N/A]
Banksia attenuata and/or *Eucalyptus marginata* woodlands of the eastern side of the Swan Coastal Plain (floristic community type 20b as originally described in Gibson et al. 1994)	EN	N	0	2	N/A
Banksia attenuata woodlands over species rich dense shrublands (floristic community type 20a as originally described in Gibson et al. 1994)	EN	N	0	11	N/A

Community name	Conservation status	Suitable habitat features? [Y/N]	Distance of closest record to application area (km)	Number of known records (total)	Are surveys adequate to identify? [Y, N, N/A]
Banksia Woodlands of the Swan Coastal Plain ecological community	EN	N	0	68	N/A
Central Northern Darling Scarp Granite Shrubland Community	P4	N	0	3	N/A
Corymbia calophylla — Xanthorrhoea preissii woodlands and shrublands, Swan Coastal Plain (floristic community type 3c as originally described in Gibson et al. 1994)	EN	N	0	1	N/A
Shrublands and woodlands of the eastern side of the Swan Coastal Plain (floristic community type 20c as originally described in in Gibson et al. 1994)	EN	N	0	1	N/A

B.5. Contaminated sites recorded within the application area

Site	Classification	Issues	CSB Comment
Forrestfield Marshalling Yard	Awaiting Classification	Site's historical use as a rail yard	Management plan with unexpected finds protocol
Forrestfield Marshalling Yard - Lot 500, 919 Abernethy Rd, High Wycombe	Awaiting Classification	The site was reported due to previous land use as a marshalling yard. Site investigations detected lead in groundwater at concentrations that may preclude groundwater use for non-potable purposes. Asbestos-containing material (ACM) impacts on the northern portion of the site have been appropriately remediated and managed for commercial and industrial use.	Management plan with unexpected finds protocol for asbestos
Dawson Park Primary School Buildings, Lot 202, 120 Bougainvillea Avenue, Forrestfield.	Awaiting Classification	Previous landfill	Unexpected finds protocol for the potential to encounter landfill material to be included in management plan
Fennell Cresent & The Promenande road reserves (formerly part of 20 Hardey Road East, Wattle Grove).	Contaminated - restricted use	The classification was based on visual identification of ACM in the surface soils at the site. Soil investigations around the round reserve identified and remediated fragments of asbestos cement sheeting. Investigations were not undertaken beneath the road reserve, though it is likely that fragments of asbestos are also present beneath the roadways. Although the area around the roadways has been remediated, there is a potential risk of unexpected finds of ACM.	Management plan with unexpected finds protocol for ACM
Former Quarry, Lot 1879 Ledger Road, Gooseberry Hill	Possibly contaminated - investigation required	Site inspections that identified waste such as glass, plastic and tile and suspected fragments of bonded ACM present on the	Management plan to address human health risk associated with potential breaking/crushing or dispersal

Site	Classification	Issues	CSB Comment
		surface, possibly the result of fly tipping.	of ACM, with an unexpected finds protocol
Kalamunda Primary School, Lots 590 & 591, Kalamunda, Suspected Asbestos.	Possibly contaminated - investigation required	The site, which comprises the East Terrace Reserve, was reported based on its suspected former use as a landfill. The site currently functions as a public bush reserve. Inspection of the site identified waste, including household and commercial waste and ACM as bonded cement sheeting. Department of Health recommended that an ongoing site management plan (OSMP) is required, as it is a publicly accessible site and further dumping may occur.	Site management plan with an unexpected finds protocol for landfill materials which includes household and commercial waste and ACM
Former Landfill, Crown Reserve 14088, Lot 11583, 20 Ridge Hill Road, Maida Vale.	Possibly contaminated - investigation required	The classification was based on identification a variety of metal bodies, household bottles and potentially asbestos containing material buried in the soil. The observations indicated that a historic landfill was present at the site. No soil or groundwater investigations have been carried out, and the quality of soil and groundwater beneath the site are unknown.	Management plan with an unexpected finds protocol for landfill materials which includes metal bodies, household bottles and potentially asbestos
Affected Site - 39 Smokebush Place and various road reserves, High Wycombe (Source Site - City of Kalamunda Brand Rd Landfill)	Possibly contaminated - investigation required	The classification was based on the identification of per-and poly-fluoroalkyl substances (PFAS), ammonia and dichlorobenzene in groundwater beneath the site, and landfill gas immediately adjacent to the site at an elevated concentration. No soil investigations have been undertaken at the site.	Management plan for PFAS and landfill gas, with unexpected finds protocol for fly tipped material
Former Dawson Avenue Landfill (including Dawson Park Primary School Oval), Forrestfield.	Possibly contaminated - investigation required	The classification was based on the historical use of the site as a landfill accepting a mix of putrescible and inert waste. The site was capped and covered in topsoil in 1997, and now functions as a recreational open space and park. The site is subject to further groundwater and landfill gas investigation to delineate and characterise the nature and extent of contamination impacts.	Management plan with unexpected finds protocol for landfill materials
Lot 14 (65) Brand Road, High Wycombe, Landfill. Shire of Kalamunda	Possibly contaminated - investigation required	The site was formally used as a landfill between 1989 and 1996 following closure as a sand mine. The classification was based on the identification of per-and poly-fluoroalkyl substances (PFAS), ammonia, vinyl chloride, dichlorobenzene and E.coli in groundwater beneath the site. Landfill gases Methane and carbon dioxide were identified across the site and carbon monoxide and hydrogen sulfide were identified within the north-eastern and south-western portions of the site. Although used as a landfill,	Management plan for PFAS and landfill gas, with unexpected finds protocol for fly tipped material

Site	Classification	Issues	CSB Comment
		no soil contamination was found to be present below the landfill mass and within the landfill clay capping layer.	
Affected Site - Lot 15, No. 51,Brand Rd, High Wycombe (Source Site - City of Kalamunda Brand Rd Landfill)	Possibly contaminated - investigation required	The classification was based on the identification of chlorinated hydrocarbons in groundwater beneath the south-western portion of the site, landfill gas within the northern corner of the site and fly-tipped material along the north-eastern boundary of the site. The fly-tipped materials included soil, scrap metal, tyres, glass, plastic, metal drums and potential asbestos-containing material.	Management plan for fly tipped material and landfill gas, with an unexpected finds protocol
Asbestos, Lot 83, No. 19 Eucalyptus Way, Maida Vale	Possibly contaminated - investigation required	The classification was following the submission of reports identifying fragments of ACM present in fill material along the side of the driveway on the northwest side of the site. No soil investigations or risk assessments have been undertaken at the site. The site should be subject to an ongoing management plan that includes the removal of all visible ACM from the top 10cm of the impacted fill, the placement of a permeable barrier such as Geomesh, Hydromulch and/or revegetation, and inspection of ACM fragments following heavy rainfall events.	Management plan with an unexpected finds protocol for asbestos and ACM
Lot 5 (155) Lawnbrook Road, Walliston, landfill, Shire of Kalamunda	Possibly contaminated - investigation required	The classification was based on the historical use of the site as a landfill accepting building waste which may have included asbestos. The western portion of the site is now used as a gun shooting club, and the eastern portion of the site for stockpiling and processing of road construction and demolition waste. Soil and groundwater investigations have not been carried out and the quality of soil and groundwater is unknown.	Management plan with an unexpected finds protocol for landfill materials and asbestos
Former Service Station, Lot 1, 31 Sanderson Rd, Lesmurdie.	Remediated for restricted use	The site was historically used as a service station. Decommissioning and remedial works were undertaken between 2003 and 2009 and all identified impacted soils were remediated. GW monitoring in 2014 found hydrocarbons present in groundwater. GW not suitable for potable or non-potable use. The site was found suitable for proposed residential use providing that groundwater is not abstracted.	Clearing of native vegetation is unlikely to intercept any contamination and CS have no further comment. Please note this advice does not account for any potential surface dumping or unreported contamination.
Crown Reserve 37174 Lawnbrook Road, Walliston, landfill, Shire of Kalamunda. Alan Anderson Park.	Remediated for restricted use	A site investigation carried out at the site in 2016 confirmed the presence of ACM in near surface soils in eastern portion of the site. Surface soils impacted by ACM are remediated by the installation	The site should be managed in accordance with the ongoing site management plan titled ' Site Management Plan (Asbestos) Alan Anderson

Site	Classification	Issues	CSB Comment
		of a geotextile warning barrier and the addition of a capping layer comprised of 300 millimetres of clean fill.	Park, Walliston, WA' (ERC, 22 August 2019)
Former landfill, Ledger Road Reserve, 622 Ledger Road, Gooseberry Hill. Form 1	Remediated for restricted use	The classification was based on the historical use of the site as a landfill and gravel quarry reported to contain ACM. The site has been inspected, raked, and picked with all identified ACM fragments buried and covered with topsoil. The site has been remediated but ongoing management of the site is required.	The site should be managed in accordance with the 'Ledger Road Reserve, Gooseberry Hill - Asbestos Management Plan' (360 Environmental, December 2019).
Gooseberry Hill Primary School, 24 Ledger Road Gooseberry Hill.	Remediated for restricted use	The classification was based on the identification of fragments of potential ACM in soils along the eastern boundary of the site. The investigations found ACM fragments and asbestos fibres were present in soil. The site has been remediated but ongoing management of the site is required.	The site should be managed in accordance with the auditor endorsed management plan titled 'Asbestos Management Plan, Gooseberry Hill Primary School FINAL' (Department of Education, 4 July 2018).
Asbestos containing material from demolition. Lot 9000, 20 Dan Close, Walliston.	Report not substantiated	The site was reported due to the identification of fragments of potential ACM on the soil surface in discrete locations at the site. Remedial works were undertaken by a licensed asbestos removalist in January 2017 in accordance with advice provided by the Department of Health. A subsequent inspection by an environmental health officer confirmed that the majority of potential ACM has been removed and disposed of at an appropriate waste facility. One area was noted to contain residual potential ACM, which is to be managed under the supervision of the Shire of Kalamunda under the 'Health (Asbestos) Regulations 1992'.	The site should be managed under the supervision of the Shire of Kalamunda's environmental health officer (EHO) under the 'Health (Asbestos) Regulations 1992'. If small quantities of potential ACM are identified at the site, which is bonded, coherent and not significantly weathered, the material should be collected and disposed of in consultation with the Shire of Kalamunda's EHO.
Kalamunda Primary School, 32 Heath Rd (Lot 339) Kalamunda, Suspected Asbestos.	Report not substantiated	The site, comprised of the Kalamunda Primary School, was reported based on its suspected former use as a landfill. However, historical information provided to DWER indicates that the site has not been used for the disposal of waste or the subject of extensive filling. Minimal ACM fragments were identified in soil. The site was subject to ongoing inspection. ACM were found in the overflow car park.	Management plan with an unexpected finds protocol for landfill materials and ACM

Appendix C. Assessment against the clearing principles

Assessment against the clearing principles	Variance level	Is further consideration required?
Environmental value: biological values		
Principle (a): *"Native vegetation should not be cleared if it comprises a high level of biodiversity."* Assessment: The proposed clearing will target Typha. This species is capable of aggressive invasions that can transform ecosystems unless it is actively managed (Western Australian Herbarium, 2019). Without management, Typha can develop quickly into a monoculture and cover an entire water body. Given the application area, comprises predominantly of Typha and its tendency to colonise ecosystems, it is not anticipated that the proposed clearing will significantly impact fauna habitat or conservation significant assemblages of plants. The application area may contain suitable habitat and soils for a number of conservation significant fauna and flora species.	Not likely to be at variance	Yes *Refer to Section 3.2.1, above.*
Principle (b): *"Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna."* Assessment: The area proposed to be cleared may contain foraging and breeding habitat for conservation significant fauna.	May be at variance	Yes *Refer to Section 3.2.1, above.*
Principle (c): *"Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora."* Assessment: The area proposed to be cleared may contain habitat for threatened flora.	Not likely to be at variance	Yes *Refer to Section 3.2.2, above.*
Principle (d): *"Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a threatened ecological community."* Assessment: The area proposed to be cleared is not likely to contain species that can indicate a threatened ecological community. None of the communities contain Typha in their species list.	Not likely to be at variance	No
Environmental value: significant remnant vegetation and conservation areas		
Principle (e): *"Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared."* Assessment: The extent of the native vegetation in the local area is consistent with the national objectives and targets for biodiversity conservation in Australia. The vegetation proposed to be cleared is not considered to be part of a significant ecological linkage in the local area.	Not at variance	No
Principle (h): *"Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area."* Assessment: A portion of the application area falls within Mundy regional park and Bush forever sites 45, 316, 440, 213 and 320. Given the purpose of the proposed	Not likely to be at variance	No

Assessment against the clearing principles	Variance level	Is further consideration required?
clearing is to improve water flow and for potential native rehabilitation, it is not likely to have an impact on the environmental values of the conservation areas.		
Environmental value: land and water resources		
Principle (f): *"Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland."* Assessment: Typha forms a natural component of native wetland and watercourse vegetation. However, Typha can dominate wetland ecosystems. Given the nature of the proposed clearing, it is unlikely to significantly impact wetlands or watercourses.	At variance	Yes *Refer to Section 3.2.3, above.*
Principle (g): *"Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation."* Assessment: The mapped soils are highly susceptible to subsurface acidification with some soils also highly susceptible to wind and phosphorus export risk. The method and targeted nature of the proposed clearing is unlikely to result in land degradation.	May be at variance	Yes *Refer to Section 3.2.3, above.*
Principle (i): *"Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water."* Assessment: Given the application area intersects water courses and wetlands, as Typha is a riparian species, the proposed clearing may impact surface or ground water quality.	May be at variance	Yes *Refer to Section 3.2.3, above.*
Principle (j): *"Native vegetation should not be cleared if the clearing of the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding."* Assessment: The purpose of the clearing permit is to remove Typha to increase water flow which would reduce the likelihood, incidence and intensity of flooding in the area.	Not likely to be at variance	Yes *Refer to Section 3.2.3, above.*

Appendix D. Vegetation condition rating scale

Vegetation condition is a rating given to a defined area of vegetation to categorise and rank disturbance related to human activities. The rating refers to the degree of change in the vegetation structure, density and species present in relation to undisturbed vegetation of the same type. The degree of disturbance impacts upon the vegetation's ability to regenerate. Disturbance at a site can be a cumulative effect from a number of interacting disturbance types.

Considering its location, the scale below was used to measure the condition of the vegetation proposed to be cleared. This scale has been extracted from Keighery, B.J. (1994) *Bushland Plant Survey: A Guide to Plant Community Survey for the Community*. Wildflower Society of WA (Inc). Nedlands, Western Australia.

Measuring vegetation condition for the South West and Interzone Botanical Province (Keighery, 1994)

Condition	Description
Pristine	Pristine or nearly so, no obvious signs of disturbance.
Excellent	Vegetation structure intact, with disturbance affecting individual species; weeds are non-aggressive species.

Condition	Description
Very good	Vegetation structure altered, with obvious signs of disturbance. For example, disturbance to vegetation structure caused by repeated fires, the presence of some more aggressive weeds, dieback, logging and/or grazing.
Good	Vegetation structure significantly altered by very obvious signs of multiple disturbances. Retains basic vegetation structure or ability to regenerate it. For example, disturbance to vegetation structure caused by very frequent fires, the presence of some very aggressive weeds at high density, partial clearing, dieback and/or grazing.
Degraded	Basic vegetation structure severely impacted by disturbance. Scope for regeneration but not to a state approaching good condition without intensive management. For example, disturbance to vegetation structure caused by very frequent fires, the presence of very aggressive weeds, partial clearing, dieback and/or grazing.
Completely degraded	The structure of the vegetation is no longer intact and the area is completely or almost completely without native species. These areas are often described as 'parkland cleared' with the flora comprising weed or crop species with isolated native trees or shrubs.

Appendix E. Photographs of the vegetation (City of Kalamunda, 2023a)




Typha at Jacaranda Springs




Typha at Wallis Park, Sing Gardens





Typha at Ollie Worrel Reserve





Typha at Willow Lakes



Typha at Elmore Dog Park

Appendix F. Sources of information

F.1. GIS databases

Publicly available GIS Databases used (sourced from www.data.wa.gov.au):

- 10 Metre Contours (DPIRD-073)
- Aboriginal Heritage Places (DPLH-001)
- Aboriginal Heritage Places (DPLH-001)
- Cadastre (LGATE-218)
- Cadastre Address (LGATE-002)
- Contours (DPIRD-073)
- DBCA – Lands of Interest (DBCA-012)
- DBCA Legislated Lands and Waters (DBCA-011)
- Directory of Important Wetlands in Australia – Western Australia (DBCA-045)
- Environmentally Sensitive Areas (DWER-046)
- Flood Risk (DPIRD-007)
- Groundwater Salinity Statewide (DWER-026)
- Hydrography – Inland Waters – Waterlines
- Hydrological Zones of Western Australia (DPIRD-069)
- IBRA Vegetation Statistics
- Imagery
- Local Planning Scheme – Zones and Reserves (DPLH-071)
- Native Title (ILUA) (LGATE-067)
- Offsets Register – Offsets (DWER-078)
- Pre-European Vegetation Statistics
- Public Drinking Water Source Areas (DWER-033)
- Ramsar Sites (DBCA-010)
- Regional Parks (DBCA-026)
- Remnant Vegetation, All Areas
- RIWI Act, Groundwater Areas (DWER-034)
- RIWI Act, Surface Water Areas and Irrigation Districts (DWER-037)
- Soil Landscape Land Quality – Flood Risk (DPIRD-007)
- Soil Landscape Land Quality – Phosphorus Export Risk (DPIRD-010)
- Soil Landscape Land Quality – Subsurface Acidification Risk (DPIRD-011)
- Soil Landscape Land Quality – Water Erosion Risk (DPIRD-013)
- Soil Landscape Land Quality – Water Repellence Risk (DPIRD-014)
- Soil Landscape Land Quality – Waterlogging Risk (DPIRD-015)
- Soil Landscape Land Quality – Wind Erosion Risk (DPIRD-016)
- Soil Landscape Mapping – Best Available
- Soil Landscape Mapping – Systems
- Wheatbelt Wetlands Stage 1 (DBCA-021)

Restricted GIS Databases used:

- ICMS (Incident Complaints Management System) – Points and Polygons
- Threatened Flora (TPFL)
- Threatened Flora (WAHerb)
- Threatened Fauna
- Threatened Ecological Communities and Priority Ecological Communities
- Threatened Ecological Communities and Priority Ecological Communities (Buffers)

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