1. PROJECT OVERVIEW

The Public Transport Authority (PTA) is planning the removal of up to six level crossings along the Armadale passenger rail line. The Inner Armadale Level Crossing Removal (IALXR) Project is part of the METRONET Level Crossing Removals Program. The six level crossings that have been identified as priority for removal along the Armadale passenger line are Mint Street, Oats Street, Welshpool Road, Hamilton Street, Wharf Street and William Street.

Grade separation of the six level crossings will deliver significant community benefit, including improved safety for people and vehicles crossing the rail line, reduced congestion for road users, improved capacity for rail operation, improved functionality of rail station infrastructure and unlocking land within the rail reserve for public open space and improved accessibility and connectivity.

The crossings proposed for removal have been categorised into two groups as outlined below:

Group 1: Mint Street, Oats Street and Welshpool Road

The three level crossings in this group will be replaced by an elevated rail solution forming a continuous viaduct structure from west of the existing Carlisle Station over Mint Street and Oats Street and return at grade level on the eastern side of the existing down main Oats Street platform. The viaduct will be approximately 1.6 kilometres long.

The rail will then be raised over Welshpool Road as a rail bridge. This will enable the level crossing infrastructure to be removed to provide at-grade access underneath the elevated rail line. The PTA will close Welshpool Station due to low patronage and two new elevated stations will be constructed to replace the existing Carlisle and Oats Street Stations at approximately the same locations. The new stations will be serviced by new park and ride facilities and a new Oats Street bus station facility with improved accessibility to station platforms.

The viaduct structure will convert around 960 metres of the existing rail corridor into approximately 3.8 hectares of public open space.

Group 2: Hamilton Street, Wharf Street and William Street

An elevated rail solution will replace the Hamilton and Wharf Street crossings with a continuous viaduct structure of approximately 900 metres in length. The rail line will return to grade level south-east of Wharf Street. The William Street crossing may be replaced in the future with a short 500 metre viaduct structure encompassing an elevated Beckenham Station.

Two new elevated train stations will ultimately replace the existing Queens Park and Beckenham Stations. New park and ride and bus station facilities, with improved accessibility to the station platforms, will service the new stations. The two viaduct structures will convert around 800 metres of the existing rail corridor into approximately 2.4 hectares of public open space.

2. RELEVANT STUDIES

The PTA has commissioned various studies (Table 1) to identify and assess the ecological values present in the project area. The information prepared in this application draws upon the results of these studies.

Table 1: Studies completed within the application area

AUTHOR	TITLE	COMMENT
Harewood (2019a)	Fauna Habitat Assessment – Oats Street Level Crossing Removal Project, Cannington	A basic survey as defined in the EPA Technical Guidance – Vertebrate Fauna Surveys for Environmental Impact Assessment (EPA, 2020) and Level fauna survey and black cockatoo habitat assessment. Harewood (2019a & 2019b) assessed the fauna habitat within discrete areas for the level crossings at Oats Street and Wharf Street.
Harewood (2019b)	Fauna Habitat Assessment – Wharf Street Level Crossing Removal Project, Cannington	
PGV Environmental (2019a)	METRONET Oats Street Level Crossing – Flora and Vegetation Survey	A detailed flora and vegetation survey in accordance with EPA Technical Guidance Flora and Vegetation Surveys for Environmental Impact Assessment (EPA, 2016). PGV Environmental (2019a & 2019b) assessed the flora and vegetation within discrete survey areas for the level crossings at Oats Street and Wharf Street. PGV (2019a) – IBSA-2021-0202 PGV (2019b) – IBSA-2021-0203
PGV Environmental (2019b)	METRONET Wharf Street Level Crossing – Flora and Vegetation Survey	
PGV Environmental (2020)	Perth to Armadale Rail Line – Flora and Vegetation Survey	An out of season reconnaissance survey to assess the flora and vegetation along the Armadale train line from Perth to south of Armadale station. The assessment also incorporated the results from the Oats Street and Wharf Street surveys conducted by PGV Environmental (2019a & 2019b). Report packaged in IBSA-2021-0174
Harewood (2020)	Fauna Habitat Assessment – Armadale Train Line	A basic survey and targeted black cockatoo habitat assessment. The assessment incorporated the results from the Oats Street and Wharf Street survey conducted by Harewood (2019a & 2019b). Report packaged in IBSA-2021-0174

3. SITE CONTEXT

3.1 LOCATION

The IALXR project area traverses the Town of Victoria Park, City of Canning and the City of Gosnells. It follows the existing rail corridor commencing north-west of Miller Street Bridge in Carlisle to south-east of Beckenham Station. The application area covers the rail corridor and sections of road reserve within the Cities of Gosnells and Canning.

3.2 TOPOGRAPHY

The project area slopes gently down from the northern extent in Carlisle to the southern extent near Beckenham, ranging between 15 metres Australian Height Datum (m AHD) in the north to approximately 4 m AHD in the south.

3.3 GEOLOGY AND SOILS

The project area is on the Swan Coastal Plain, within the Bassendean Dune System. The 1:50,000 Environmental Geology mapping (Gozzard, 1986 and Jordan, 1986) indicates that the IALXR project is predominantly located on Bassendean Sand or Thin Bassendean Sand over Guildford Formation (Units S_8 and S_{10}) with a small section near Wharf Street intersecting an area mapped as Muchea Limestone (Unit LS_5). Descriptions for these units are provided as follows:

- Unit S_8 (Bassendean Sand): white to pale grey at surface, yellow at depth, fine to medium-grained, moderately sorted,
- Unit S_{10} (Thin Bassendean Sand over Guildford Formation): as unit S_8 over sandy clay to clayey sand of the Guildford Formation, and
- Unit LS_5 (Muchea Limestone): white to cream, fine-grained.

3.4 FLORA AND VEGETATION

Flora and vegetation within the project area have been assessed and mapped by PGV Environmental (2019a, 2019b and 2020). The surveys for the Oats Street and Wharf Street crossings were conducted during spring (October) 2018 while the 2020 survey was completed in summer (January-February 2020). The survey methodology generally aligns with the Environmental Protection Authority's (EPA, 2016) Technical Guidance *Flora and Vegetation Surveys in for Environmental Impact Assessment.*

A total of 43 locally native plant species were recorded along the Armadale line (i.e. from Perth to Armadale stations). Many of these species were recorded outside of the IALXR project area. No threatened or priority listed species were recorded during the survey.

Detailed plot sampling was not completed during any of the surveys due to the absence of intact native vegetation communities. As a result, there are no threatened ecological communities or priority ecological communities present.

PGV Environmental (2020) rated the vegetation condition in the project area as Completely Degraded, reflecting the long history of disturbance. This rating was assigned as the structure of the vegetation is no longer intact and the survey area is almost completely without native species.

Within the 36.07 ha application area is a total of 1.06 ha of native vegetation comprising occurrences of locally native plant species. These areas were considered native vegetation as defined by the *Environmental Protection Act 1986* (EP Act) on the basis that the vegetation at these locations may be naturally occurring or have regenerated from naturally occurring specimens/seed. The native vegetation mapped in the project area includes scattered specimens of *Xanthorrhoea preissii*, *Eucalyptus marginata* and *Corymbia calophylla* at the following locations:

- Oats Street to Welshpool Road – *Xanthorrhoea preissii,* Exotic Trees and Shrubs intermixed with *Xanthorrhoea preissii, Eucalyptus marginata / Corymbia calophylla* intermixed with Exotic Trees and Shrubs. This area also contains other potentially local native species such as *Adenanthos cygnorum*, *Jacksonia furcellata, Xanthorrhoea preissii, Gompholobium tomentosum, Scholtzia involucrata* and *Stirlingia latifolia.* It is unclear if these specimens were planted or have naturally regenerated.
- Gerard Street, Cannington to William Street Beckenham – scattered *Corymbia calophylla and Corymbia calophylla* intermixed with Exotic Trees and Shrubs.
- South of William Street, Beckenham – a line of dense remnant *Corymbia calophylla* over cleared or maintained grass understorey with planted Grevillea shrubs.

3.5 FAUNA

Harewood (2019a, 2019b and 2020) assessed the habitat along the Armadale train line, from Perth station to south of Armadale station and some areas adjacent to the rail line in select locations (near Oats Street, Carlisle and Wharf Street, Cannington). Harewood (2020) also evaluated the likelihood of conservation significant fauna species utilising habitat in the survey area. It should be noted that the survey area is significantly larger than the IALXR project area.

Fauna habitat is sparse and scattered within the rail corridor and along adjacent road verges. It is comprised of grassland or a mix of planted exotic, non-endemic and native endemic trees and shrubs of variable composition and density (Harewood, 2020). The fauna values in the survey area were rated as very low given the highly degraded nature of the habitat. Remnant trees were considered to provide some value for the fauna species can persist in degraded habitats within an urban setting (Harewood, 2020). Most of the fauna species likely to be present would be common, widespread species (mainly birds), with a few exceptions such as black cockatoos (Harewood, 2020).

Twenty-four fauna species (22 were birds) were observed during the field survey across the entire survey area. Four species of conservation significance may possibly exist at times in the IALXR project area (Forest red-tailed black cockatoo, Carnaby's cockatoo, Baudin's cockatoo and peregrine falcon). Although the three species of black cockatoos were not sighted during the field surveys, foraging evidence of these species was recorded at multiple locations along the Armadale line, including some locations within the IALXR project area. Foraging evidence attributed to the three black cockatoo species was most evident in areas containing Marri trees (*Corymbia calophylla*) (Harewood, 2020).

Black cockatoo foraging resources recorded in the broader survey area and the IALXR project area included:

- Marri (*Corymbia calophylla*)
- Jarrah (*Eucalyptus marginata*)
- Flooded Gum (*E. rudis*)
- Tuart (*E. gomphocephala*)
- Planted non-endemic Eucalypt species
- WA Peppermint (*Agonis flexuosa*)
- Sheoak (*Allocasuarina* spp.)
- Grass tree (*Xanthorrhoea preissii*).

Harewood (2020) noted that many of the above plant species make up a small proportion of the black cockatoo diet and that species such as Marri and Jarrah are typically favoured food sources of the black cockatoo species. The distribution and density of the preferred foraging resources is sparse within the IALXR project area and is limited to scattered trees and shrubs.

No evidence of black cockatoo roosting or breeding was observed during the field surveys. Most of the trees of a suitable species (Eucalypt species) with a diameter at breast height (DBH) greater than 500 mm did not contain any hollows. Of the trees within the survey area containing hollows, most hollows were assessed as being unsuitable for black cockatoo nesting due to the small size of the hollow, unsuitable orientation and/or height above ground level, or are being used by feral bees or other species (such as galahs) (Harewood, 2020).

Within the IALXR project area, Harewood (2019a, 2019b and 2020) recorded 54 trees of a suitable species with a DBH greater than 500 mm.

The status of the peregrine falcon in the project area is difficult to assess because the species was not sighted during the field surveys. It is a species that forages over a large range and may infrequently be sighted in the project area. Harewood (2020) concluded that the peregrine falcon (*Falco peregrinus*) possibly occurs, although it would be an infrequent visitor.

3.6 GROUNDWATER

The IALXR project area is within the Perth Groundwater Area proclaimed under the *Rights in Water Irrigation Act 1914.* The project area does not intersect any public drinking water source areas.

The depth to groundwater within the superficial aquifer is estimated to be between approximately 2-3 metres below ground level (m BGL) at Beckenham Station to Queens Park and generally 5-8 m BGL between Welshpool Station and the northern extent of the project area in Carlisle.

3.7 SURFACE WATER

The IALXR project traverses two surface water management sub-areas. The northern half of the project area is in the Swan/Canning Estuary Surface Water Management Sub-area until Mills Street, Queens Park. The southern half of the project area is in the Middle Canning Surface Water Management Sub-area.

There are no natural water courses or wetlands within the project area. The DBCA's Geomorphic Wetlands Swan Coastal Plain dataset shows the closest wetlands are:

- A multiple use wetland (MUW) UFI 7443 (60.97 ha) east of the project area in Queens Park. The nearest portion of this wetland is in the vicinity of George Street and Railway Parade intersection and is approximately 20 m from the project area. The mapped wetland has been cleared for urban development and is therefore no longer representative of a wetland.
- MUWs UFI 14371 (1.57 ha) and 14374 (1.00 ha) (Carousel Swamp) are situated in Cannington and are dissected by Gerard Street. The wetlands have been highly degraded and mostly cleared of native vegetation (Natural Area Consulting Management Services (2016). These wetlands are approximately 30 m west of the project area.
- Conservation Category Wetland (CCW) UFI 15795 (6.70 ha) and MUW UFI 14373 (1.77 ha) and a small area (0.23 ha, UFI 15794) which is classified as no longer a wetland are situated west of Jameson Street in Cannington. Native vegetation within this area is representative of a threatened ecological community (TEC). These wetlands are located more than 230 m west of the project area.

3.8 BUSH FOREVER

The application area does not intersect any Bush Forever areas. The closest Bush Forever area is Site No. 224 – *Canning River Regional Park and Adjacent Bushland, Riverton to Langford.* This site is more than 1.2 km south-west of the IALXR project area.

3.9 ENVIRONMENTALLY SENSITIVE AREAS

The southern section of the IALXR project area (south of Radium Street, Welshpool to south of Beckenham Station) is mapped as an Environmentally Sensitive Area (ESA). The environmental attributes which an area must possess to be considered an ESA are described in the *Environmental Protection (Environmentally Sensitive Areas) Notice 2005*. These attributes include aspects such as World heritage properties, areas included on the Register of the National Estate because of their natural heritage value, significant wetlands (such as a CCW, a nationally important wetland or a Ramsar listed wetland), the area covered by vegetation within 50 m of rare flora, the area covered by a threatened ecological community, a Bush Forever area, etc.

ESA mapping is inclusive of a buffer to the attribute that is a recognised ESA. The portion of the IALXR project area mapped as an ESA does not possess any attributes consistent with those described in the *Environmental Protection (Environmentally Sensitive Areas) Notice 2005.*

3.10 HERITAGE

The Department of Planning, Lands and Heritage's (DPLH) Aboriginal Heritage Inquiry System identifies Aboriginal Heritage Place 3633 (Hamilton Crossing) within the IALXR project area. Aboriginal Heritage Place 3633 is listed as 'lodged' meaning it is still awaiting assessment.

The PTA has referred an Activity Notice for the IALXR Project to the South West Aboriginal Land and Sea Council (SWALSC). The PTA will commission a heritage survey of the project area.

4. ASSESSMENT AGAINST TEN CLEARING PRINCIPLES

Table 2 provides an assessment of the proposed clearing against the ten clearing principles.

Table 2: Ten Clearing Principles Assessment

Clearing Principle	Assessment
a) It comprises a high level of biological diversity.	The IALXR project area is predominantly cleared as it is used for an operational passenger train service. Most of the vegetation in the project area is comprised of planted non-native species/non-endemic species. Some isolated occurrences of native vegetation, as defined in the *Environmental Protection Act 1986*, were mapped by PGV Environmental (2019a, 2019b and 2020). Most of these areas consist of remnant trees (Marri – *Corymbia calophylla*) or grass trees (*Xanthorrhoea preissii*). No threatened or priority listed flora have been recorded in the IALXR project area. No threatened ecological communities or priority ecological communities are present. Only 43 locally native species were recorded in the Perth the Armadale survey area. This level of diversity is extremely low and is reflective of the long history of disturbance associated with past land uses and the on-going operation of the passenger rail service. The IALXR project area does not contain high levels of species diversity, ecosystem diversity or genetic diversity due to its Completely Degraded condition with a lack of understorey, absence of conservation significant species and no areas of intact native vegetation communities. The proposed clearing is not considered to be at variance with this Principle.
b) It comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna indigenous to Western Australia.	Harewood (2019a, 2019b and 2020) assessed the fauna habitat along the Perth to Armadale line, concluding that the habitats were highly degraded and offer limited resources for fauna. As a result, the fauna assemblage is likely to be depauperate, with species that can persist in degraded urban environments only to be expected (Harewood, 2020). The fauna assessment for the entire Armadale passenger line recorded foraging evidence by the three black cockatoo species (Baudin's, Carnaby's and forest red-tailed). Foraging evidence was most common in areas where marri trees were present. Although other suitable foraging plant species (such as *Xanthorrhoea preissii* and *Eucalyptus gomphocephala*) were recorded, Harewood (2020) noted that many of these plant species only provide limited resources for black cockatoos and make up only a small proportion of each species' diet. Evaluating the extent of foraging habitat in the IALXR project area is difficult due to the sparse and scattered nature of habitat. However, the potential foraging habitat comprised of native

Clearing Principle	Assessment
	vegetation to be cleared for the IALXR project is very limited. The total area of native vegetation to be removed is calculated to be 1.06 ha. Harewood (2019a, 2019b and 2020) did not observe any evidence of black cockatoo nesting or roosting along the Armadale line. A total of 54 trees (of a suitable species –native and non-native species) with a DBH greater than 500 mm were recorded in the IALXR project area. None of these trees contain hollows of a suitable size or orientation that could support black cockatoo nesting. The IALXR project area is not located within a recognised area where black cockatoo nesting occurs. Based upon the fauna assessment, the PTA considers that the impact to black cockatoo species will not be significant due to the sparse and limited nature of habitat in the project area. The proposed clearing may be at variance with this Principle based on some black cockatoo habitat being impacted. However, this impact is not deemed significant as the impacted habitat is regarded as low
c) It includes, or is necessary for the continued existence of, rare flora.	No rare flora was recorded during the 2018 spring flora and vegetation survey (PGV Environmental, 2019a & 2019b) or the 2020 survey (PGV Environmental, 2020) which was conducted outside of the optimal spring period. Despite the 2020 survey being conducted outside of the preferred survey period for the Swan Coastal Plain, it is unlikely that any rare flora would be present in the IALXR project area given the absence of intact native vegetation communities and the long history of disturbance. The proposed clearing is not considered to be at variance with this Principle.
d) It comprises the whole or a part of or is necessary for the maintenance of a threatened ecological community.	The native vegetation in the IALXR project area is completely degraded and no longer representative of any specific ecological community and as a result does not represent any threatened or priority ecological communities. The proposed clearing is not considered to be at variance with this Principle.
e) It is significant as a remnant of native vegetation in an area that has been extensively cleared.	The IALXR project is situated across three local governments within the inner metropolitan area. The Town of Victoria Park (ToVP) and City of Canning (CoC) have been extensively cleared: 0.83% of ToVP and 6.35% of CoC comprise native vegetation and in contrast the 27.99% of the City of Gosnells comprises native vegetation (Government of Western Australia, 2019). The proposed clearing will impact 1.06 ha of native vegetation that was rated as Completely Degraded. The impacted areas lack species diversity and is almost without any vegetation

Clearing Principle	Assessment
	structure remaining. The impacted areas comprise scattered native trees (such as *Corymbia calophylla*) or shrubs (such as *Xanthorrhoea preissii*). The native vegetation to be cleared was not considered by PGV Environmental (2019a, 2019b and 2020) to be significant remnant native vegetation. The proposed clearing may be at variance with this Principle.
f) It is growing in, or in association with, an environment associated with a watercourse or wetland.	The IALXR project area does not contain any natural watercourses or wetlands. The proposed clearing is not considered to be at variance with this Principle.
g) The clearing of the vegetation is likely to cause appreciable land degradation.	Following clearing of native vegetation in the project area, the PTA will construct an elevated rail solution to remove level crossings along the Armadale line. The construction of the elevated rail will result in the stabilisation of land within the project footprint and the creation of public open space. A Construction Environmental Management Plan (CEMP) will be implemented, along with standard construction methodologies including strategies for the management of wind and/or water erosion. The elevated rail development will ultimately involve stabilising the natural soils in the project area and therefore will not result in land degradation. The proposed clearing is not considered to be at variance with this Principle.
h) The clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.	No conservation areas are within or adjacent to the IALXR project area. The nearest Bush Forever area (Site No. 224) is more than 1.2 km to the south-west of the project area. The inclusion of parts of the IALXR project area within the ESA mapping is attributed to the application of buffers to ESA values near the project area. The closest ESAs are a conservation category wetland and TECs associated with the wetlands (UFI 15795) near Carousel shopping centre. The wetland and TECs are more than 230 m west of the IALXR project area and will not be impacted by the proposal. The proposed clearing is not considered to be at variance with this Principle.
i) The clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.	Changes in groundwater or surface water quality arising from native vegetation clearing for the project are not expected to occur due to the small area of vegetation to be removed. Construction impacts will be managed by the contractor through the preparation and implementation of a Construction Environmental Management Plan (CEMP).

Clearing Principle	Assessment
	Construction impacts will be managed using contemporary methods which mitigate adverse impacts to surface water and groundwater resources. Following the completion of detailed design, the requirement for dewatering will be evaluated and if required, an application for a dewatering licence will be submitted to DWER in accordance with the requirements of the *Rights in Water and Irrigation Act 1914*. The proposed clearing is not considered to be at variance with this Principle.
j) The clearing of the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.	The clearing of 1.06 ha of native vegetation will not lead to an increase or exacerbate the incidence or intensity of flooding. A preliminary assessment of drainage requirements has been completed during the development of a draft concept design for the IALXR project. The project will manage potential flooding through appropriate drainage design and construction to Australian standards. The PTA commits to implementing water sensitive urban design principles through detailed design for the project. The drainage approach will aim to capture, treat and infiltrate runoff from smaller, more frequent rainfall events. Runoff from larger rainfall events will be captured and released to the environment in a controlled approach ensuring flood risk to adjacent areas is not exacerbated. The proposed clearing is not considered to be at variance with this Principle.

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Inner Armadale Level Crossing Removal Project

NVCP Application Area - Native Vegetation Areas and Black Cockatoo Habitat Trees

Legend

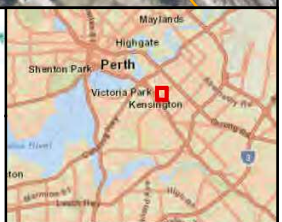
- Existing Rail Station
- NVCP Application Area
- LGA Boundaries *(Landgate, 2021)*

Black Cockatoo Habitat Trees *(Aurora, 2020)*

- Outside NVCP application area

Vegetation *(PGV Environmental, 2020)*

- Non-native Vegetation



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Inner Armadale Level Crossing Removal Project

NVCP Application Area - Native Vegetation Areas and Black Cockatoo Habitat Trees

Public Transport Authority

Legend

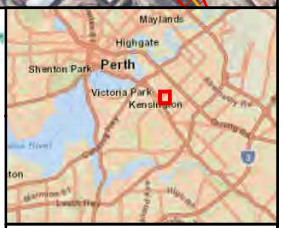
- Existing Rail Station
- NVCP Application Area
- LGA Boundaries *(Landgate, 2021)*

Black Cockatoo Habitat Trees *(Aurora, 2020)*

- ▲ Outside NVCP application area

Vegetation *(PGV Environmental, 2020)*

- Non-native Vegetation



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Inner Armadale Level Crossing Removal Project

NVCP Application Area - Native Vegetation Areas and Black Cockatoo Habitat Trees

Public Transport Authority

Legend

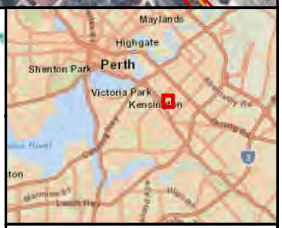
- Existing Rail Station
- NVCP Application Area
- LGA Boundaries *(Landgate, 2021)*

Black Cockatoo Habitat Trees *(Aurora, 2020)*

- ▲ Outside NVCP application area

Vegetation *(PGV Environmental, 2020)*

- Non-native Vegetation



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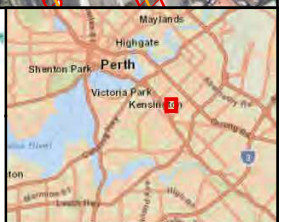
Inner Armadale Level Crossing Removal Project

NVCP Application Area - Native Vegetation Areas and Black Cockatoo Habitat Trees

Public Transport Authority



Legend

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- NVCP Application Area
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Black Cockatoo Habitat Trees *(Aurora, 2020)*

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Inner Armadale Level Crossing Removal Project

NVCP Application Area - Native Vegetation Areas and Black Cockatoo Habitat Trees

Public Transport Authority

Legend

- Existing Rail Station
- NVCP Application Area
- LGA Boundaries *(Landgate, 2021)*

Black Cockatoo Habitat Trees *(Aurora, 2020)*

- Inside NVCP application area
- Outside NVCP application area

Vegetation *(PGV Environmental, 2020)*

- Native Vegetation
- Non-native Vegetation

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Approved by: P. Zuvela
File: PTA-GIS-LXR-0022-0001_v2
Scale: 1:2,410 @ A3
Coordinate System: GDA 1994 MGA Zone 50

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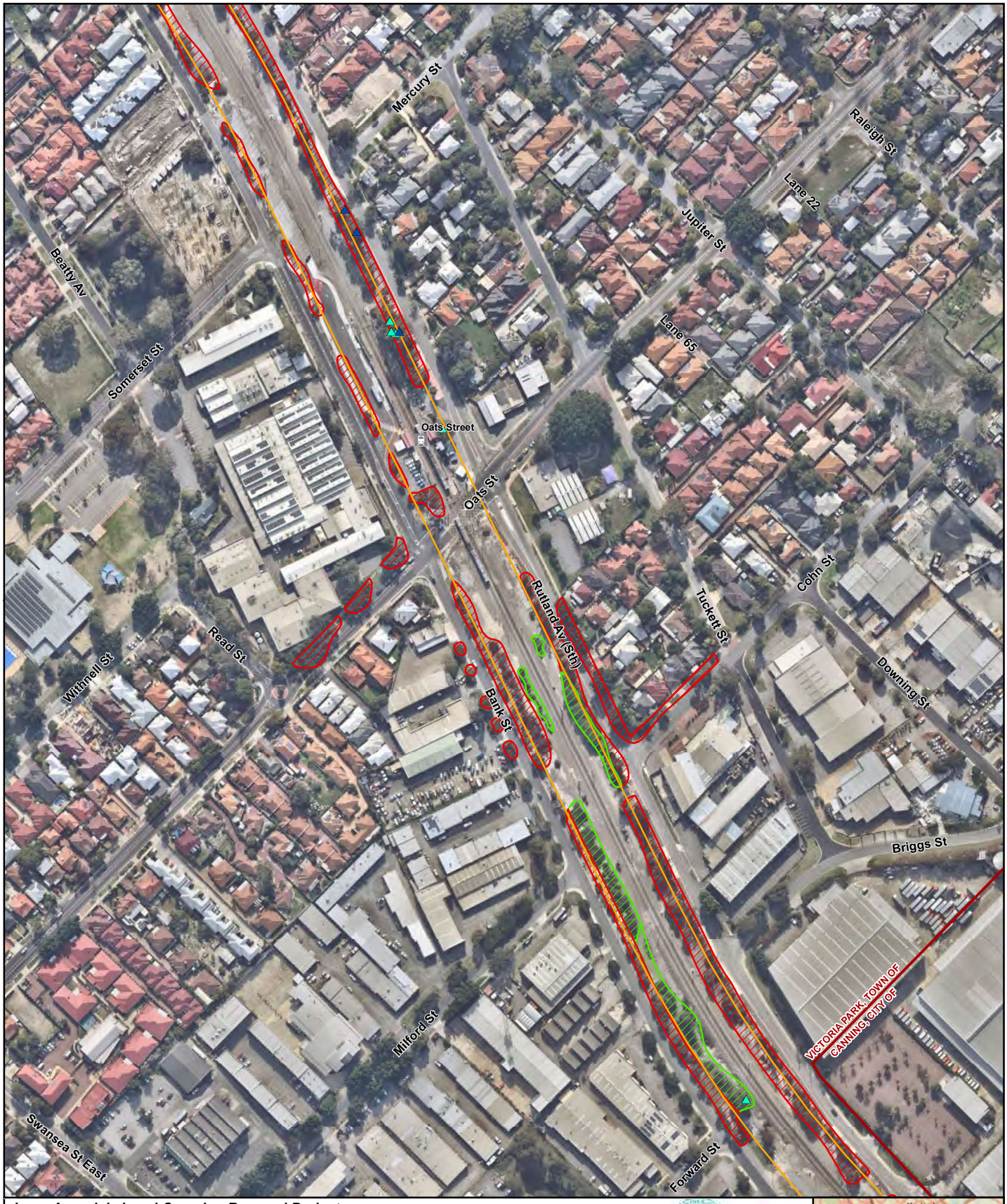


Inner Armadale Level Crossing Removal Project

NVCP Application Area - Native Vegetation Areas and Black Cockatoo Habitat Trees

Public Transport Authority

Legend

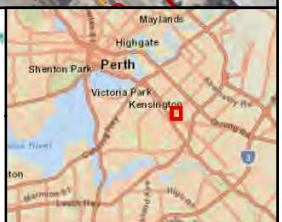
- Existing Rail Station
- NVCP Application Area
- LGA Boundaries *(Landgate, 2021)*

Black Cockatoo Habitat Trees *(Aurora, 2020)*

- Inside NVCP application area
- Outside NVCP application area

Vegetation *(PGV Environmental, 2020)*

- Native Vegetation
- Non-native Vegetation



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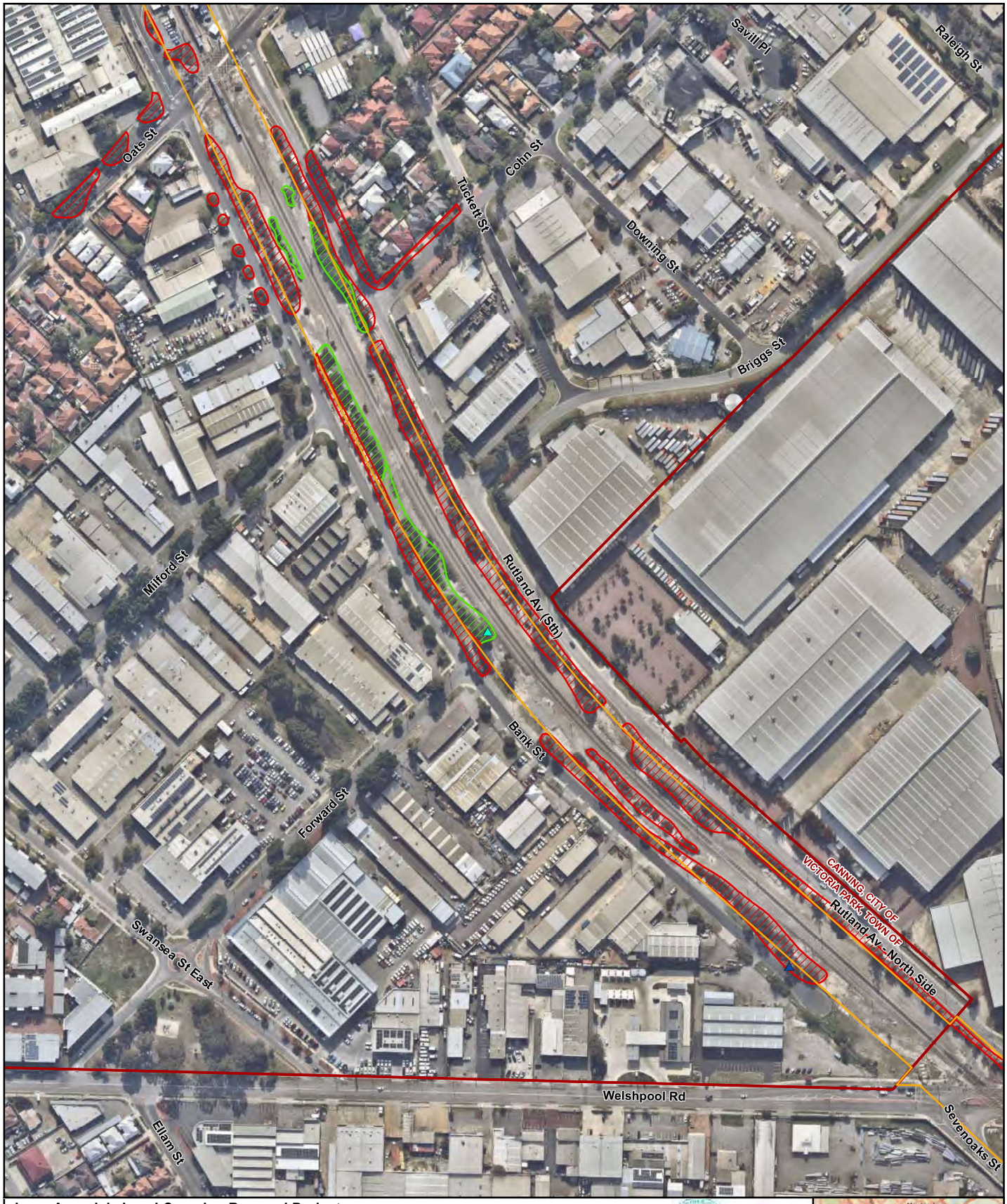


Inner Armadale Level Crossing Removal Project

NVCP Application Area - Native Vegetation Areas and Black Cockatoo Habitat Trees

Public Transport Authority

Legend

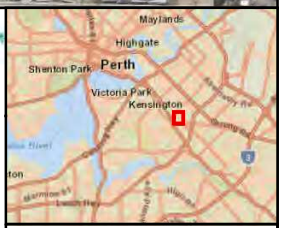
- Existing Rail Station
- NVCP Application Area
- LGA Boundaries *(Landgate, 2021)*

Black Cockatoo Habitat Trees *(Aurora, 2020)*

- Inside NVCP application area
- Outside NVCP application area

Vegetation *(PGV Environmental, 2020)*

- Native Vegetation
- Non-native Vegetation



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Inner Armadale Level Crossing Removal Project

NVCP Application Area - Native Vegetation Areas and Black Cockatoo Habitat Trees

Public Transport Authority

Legend

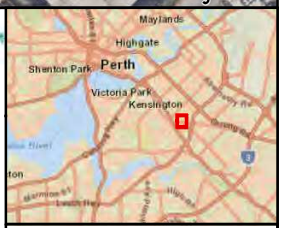
- Existing Rail Station
- NVCP Application Area
- LGA Boundaries *(Landgate, 2021)*

Black Cockatoo Habitat Trees *(Aurora, 2020)*

- Inside NVCP application area
- Outside NVCP application area

Vegetation *(PGV Environmental, 2020)*

- Native Vegetation
- Non-native Vegetation



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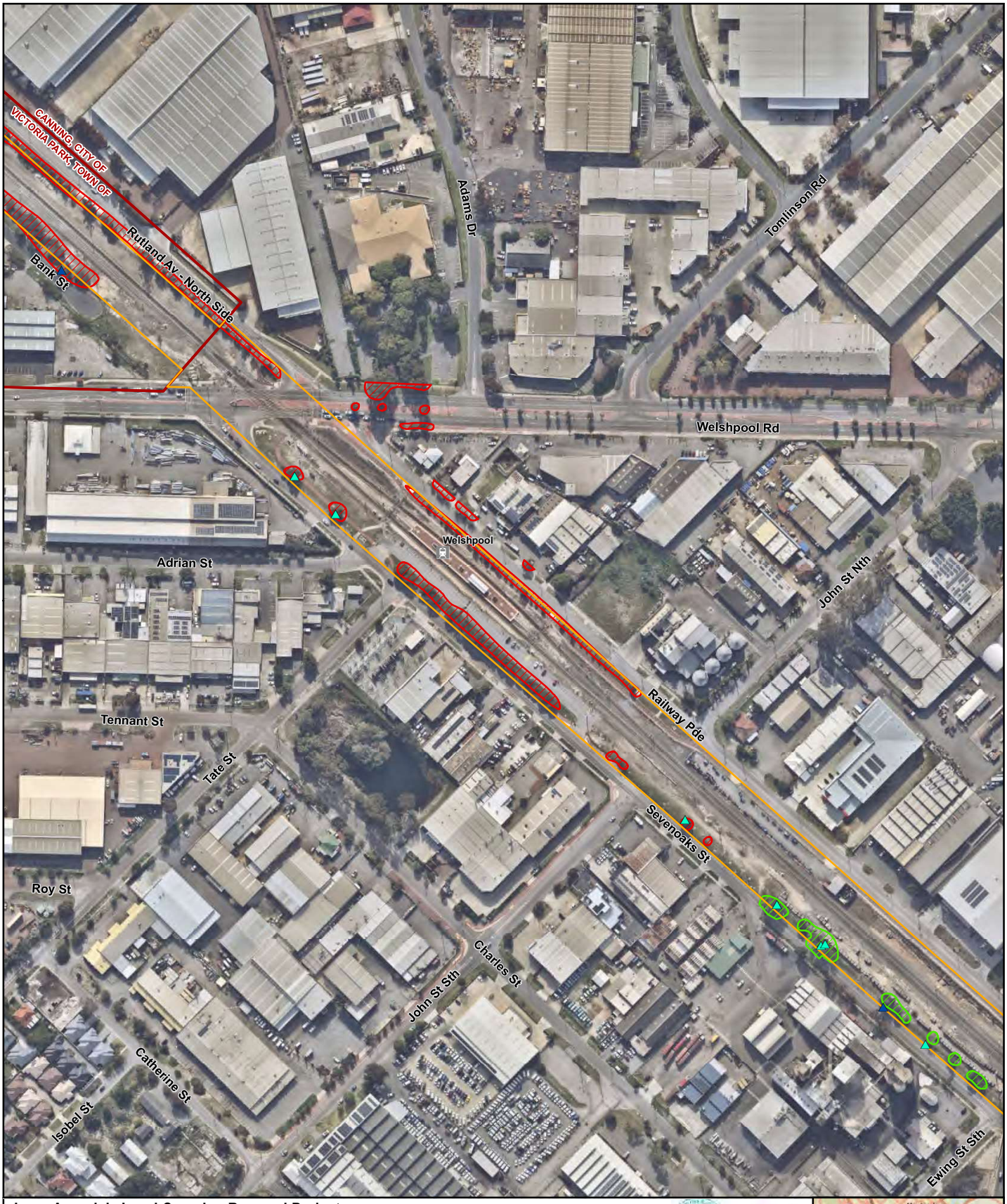


Inner Armadale Level Crossing Removal Project

NVCP Application Area - Native Vegetation Areas and Black Cockatoo Habitat Trees

Public Transport Authority

Legend

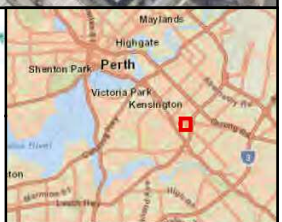
- Existing Rail Station
- NVCP Application Area
- LGA Boundaries *(Landgate, 2021)*

Black Cockatoo Habitat Trees *(Aurora, 2020)*

- Inside NVCP application area
- Outside NVCP application area

Vegetation *(PGV Environmental, 2020)*

- Native Vegetation
- Non-native Vegetation



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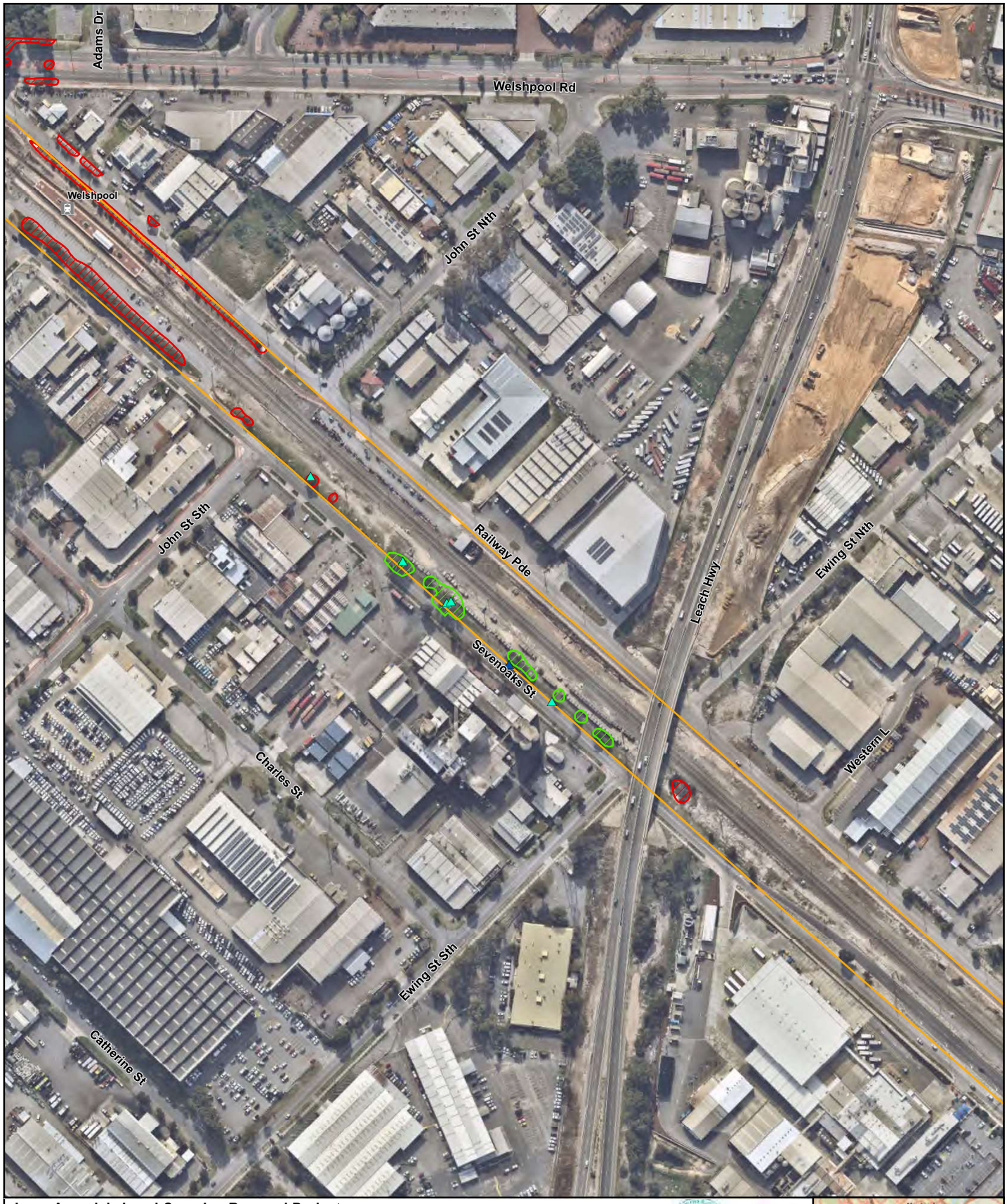


Inner Armadale Level Crossing Removal Project

NVCP Application Area - Native Vegetation Areas and Black Cockatoo Habitat Trees

Public Transport Authority

Legend

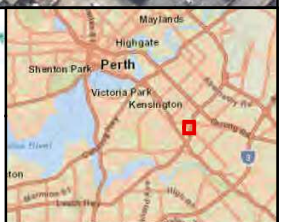
- Existing Rail Station
- NVCP Application Area
- LGA Boundaries *(Landgate, 2021)*

Black Cockatoo Habitat Trees *(Aurora, 2020)*

- Inside NVCP application area
- Outside NVCP application area

Vegetation *(PGV Environmental, 2020)*

- Native Vegetation
- Non-native Vegetation



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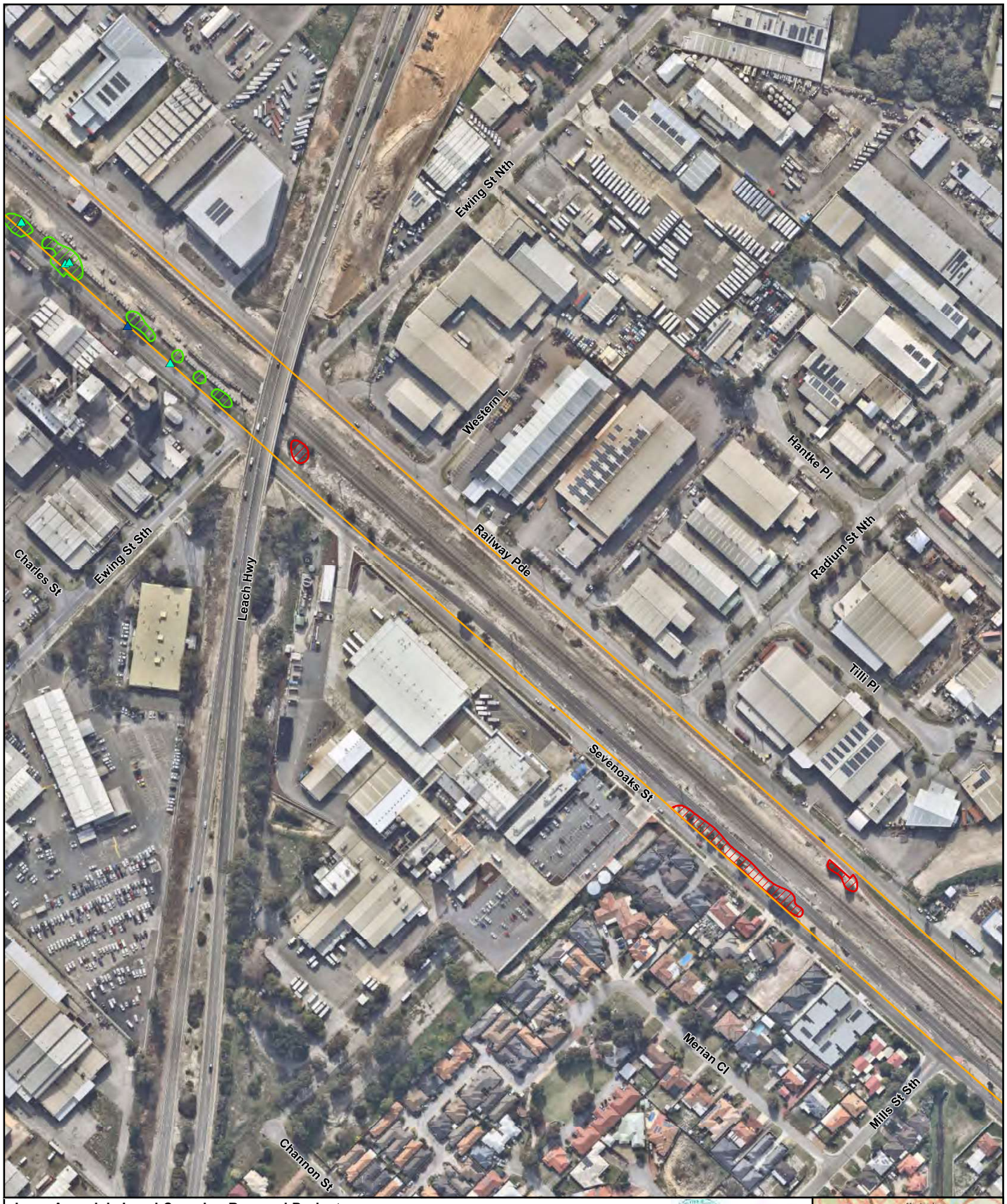


Inner Armadale Level Crossing Removal Project

NVCP Application Area - Native Vegetation Areas and Black Cockatoo Habitat Trees

Public Transport Authority

Legend

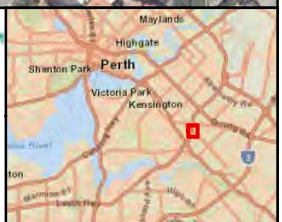
- NVCP Application Area
- LGA Boundaries *(Landgate, 2021)*

Black Cockatoo Habitat Trees *(Aurora, 2020)*

- Inside NVCP application area
- Outside NVCP application area

Vegetation *(PGV Environmental, 2020)*

- Native Vegetation
- Non-native Vegetation



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Inner Armadale Level Crossing Removal Project

NVCP Application Area - Native Vegetation Areas and Black Cockatoo Habitat Trees

Legend

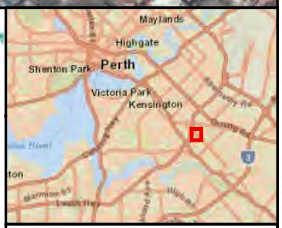
- NVCP Application Area
- LGA Boundaries *(Landgate, 2021)*

Black Cockatoo Habitat Trees *(Aurora, 2020)*

- Outside NVCP application area

Vegetation *(PGV Environmental, 2020)*

- Non-native Vegetation



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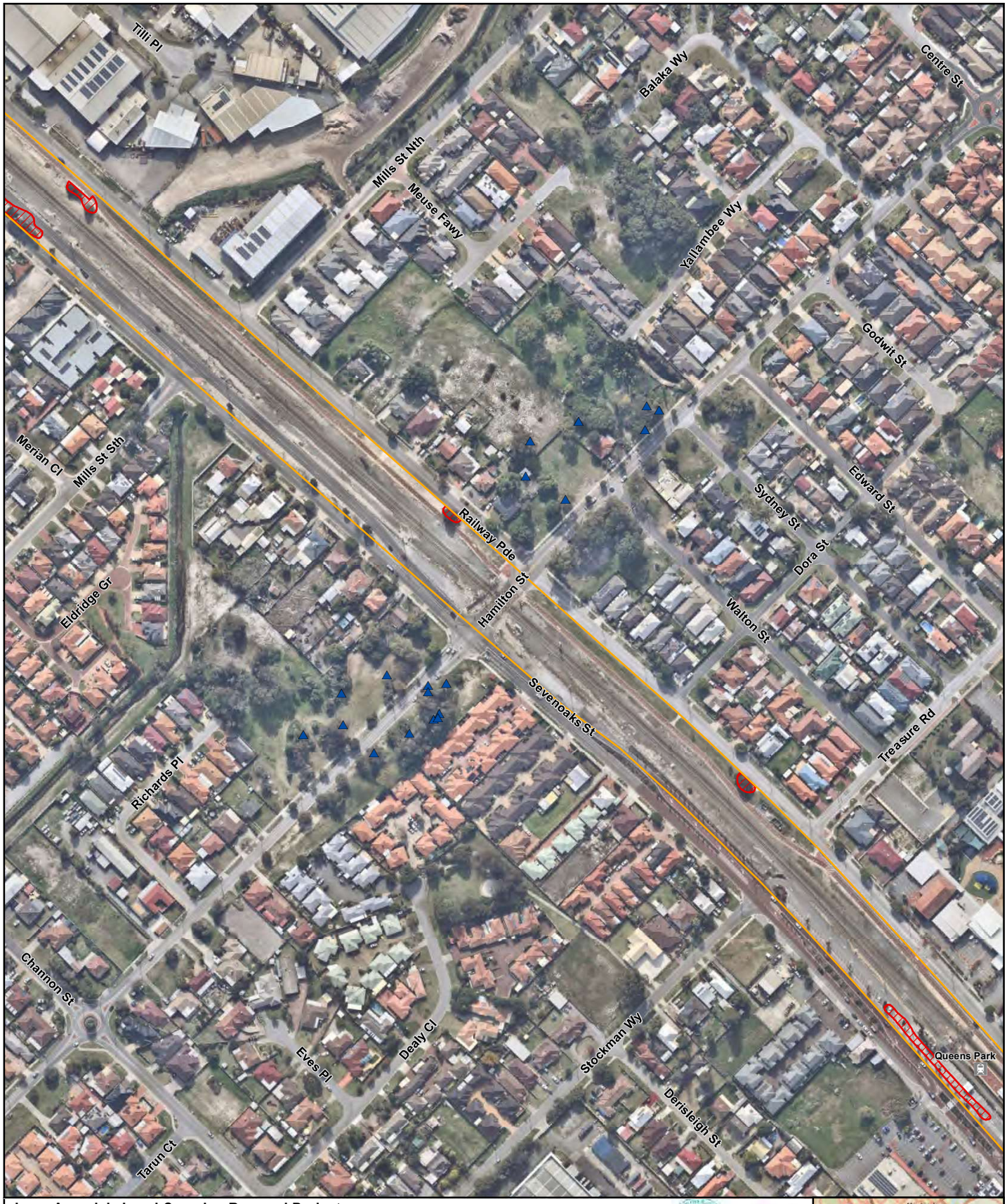


Inner Armadale Level Crossing Removal Project

NVCP Application Area - Native Vegetation Areas and Black Cockatoo Habitat Trees

Public Transport Authority

Legend

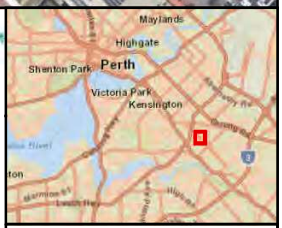
- Existing Rail Station
- NVCP Application Area
- LGA Boundaries *(Landgate, 2021)*

Black Cockatoo Habitat Trees *(Aurora, 2020)*

- Outside NVCP application area

Vegetation *(PGV Environmental, 2020)*

- Non-native Vegetation



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Inner Armadale Level Crossing Removal Project

NVCP Application Area - Native Vegetation Areas and Black Cockatoo Habitat Trees

Legend

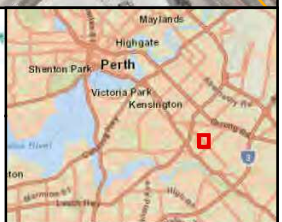
- Existing Rail Station
- NVCP Application Area
- LGA Boundaries *(Landgate, 2021)*

Black Cockatoo Habitat Trees *(Aurora, 2020)*

- Inside NVCP application area
- Outside NVCP application area

Vegetation *(PGV Environmental, 2020)*

- Non-native Vegetation



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Inner Armadale Level Crossing Removal Project

NVCP Application Area - Native Vegetation Areas and Black Cockatoo Habitat Trees

Public Transport Authority

Legend

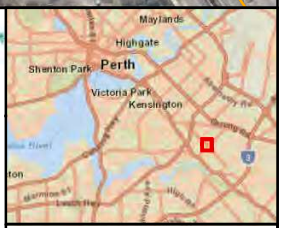
- Existing Rail Station
- NVCP Application Area
- LGA Boundaries *(Landgate, 2021)*

Black Cockatoo Habitat Trees *(Aurora, 2020)*

- Inside NVCP application area
- Outside NVCP application area

Vegetation *(PGV Environmental, 2020)*

- Non-native Vegetation



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Inner Armadale Level Crossing Removal Project

NVCP Application Area - Native Vegetation Areas and Black Cockatoo Habitat Trees

Legend

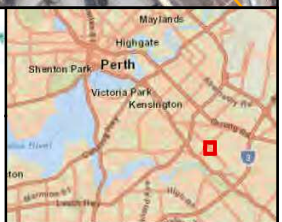
- Existing Rail Station
- NVCP Application Area
- LGA Boundaries *(Landgate, 2021)*

Black Cockatoo Habitat Trees *(Aurora, 2020)*

- Inside NVCP application area
- Outside NVCP application area

Vegetation *(PGV Environmental, 2020)*

- Non-native Vegetation



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Inner Armadale Level Crossing Removal Project

NVCP Application Area - Native Vegetation Areas and Black Cockatoo Habitat Trees

Legend

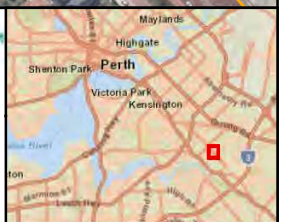
- Existing Rail Station
- NVCP Application Area
- LGA Boundaries *(Landgate, 2021)*

Black Cockatoo Habitat Trees *(Aurora, 2020)*

- Inside NVCP application area

Vegetation *(PGV Environmental, 2020)*

- Non-native Vegetation



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Inner Armadale Level Crossing Removal Project

NVCP Application Area - Native Vegetation Areas and Black Cockatoo Habitat Trees

Public Transport Authority

Legend

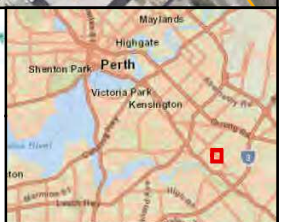
- <all other values>
- Existing Rail Station
- NVCP Application Area
- LGA Boundaries *(Landgate, 2021)*

Black Cockatoo Habitat Trees *(Aurora, 2020)*

- Inside NVCP application area

Vegetation *(PGV Environmental, 2020)*

- Native Vegetation
- Non-native Vegetation



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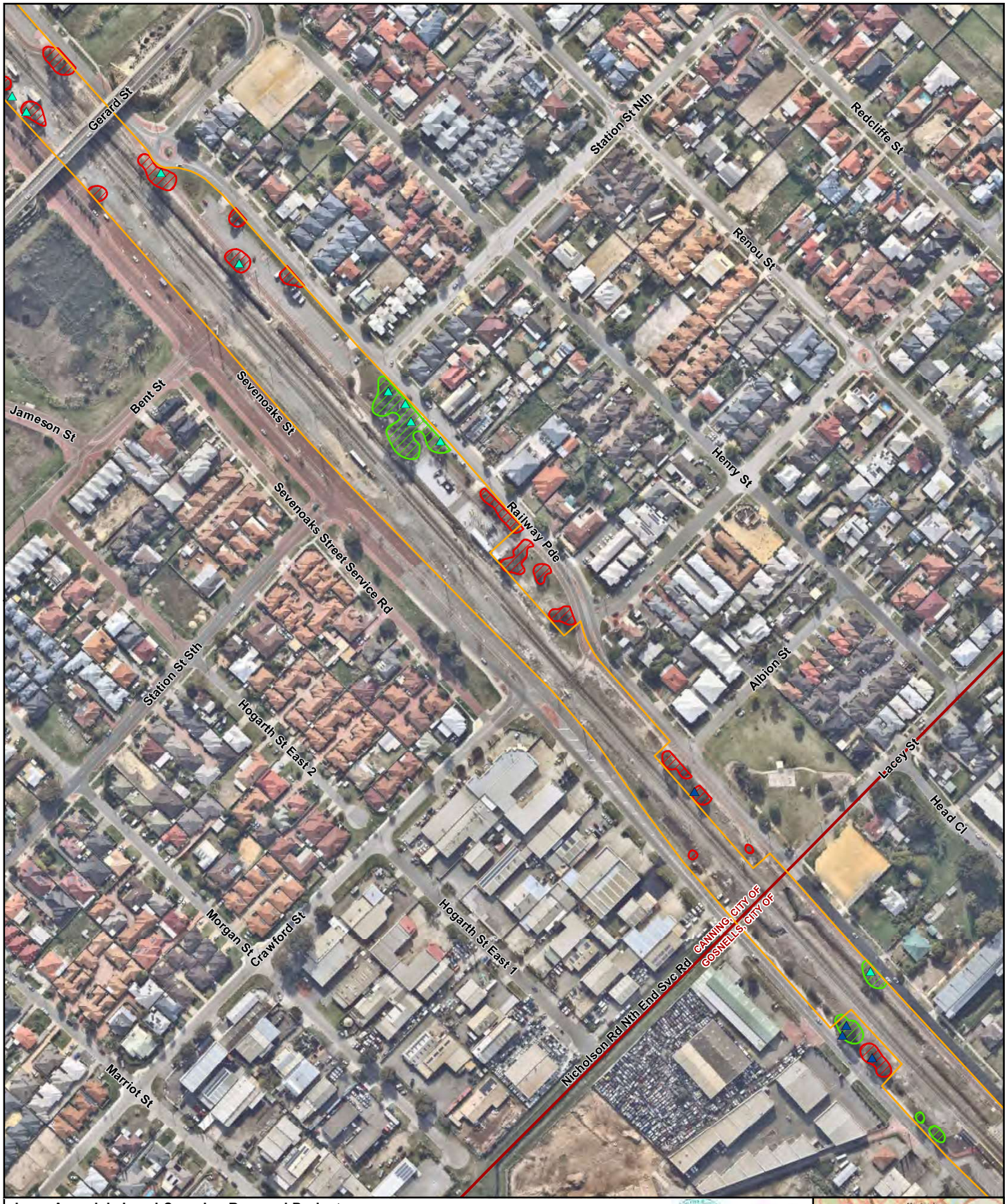


Inner Armadale Level Crossing Removal Project

NVCP Application Area - Native Vegetation Areas and Black Cockatoo Habitat Trees

Public Transport Authority

Legend

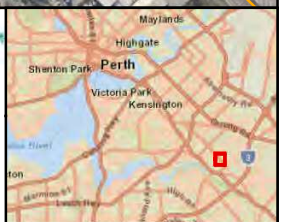
- NVCP Application Area
- LGA Boundaries *(Landgate, 2021)*

Black Cockatoo Habitat Trees *(Aurora, 2020)*

- Inside NVCP application area
- Outside NVCP application area

Vegetation *(PGV Environmental, 2020)*

- Native Vegetation
- Non-native Vegetation



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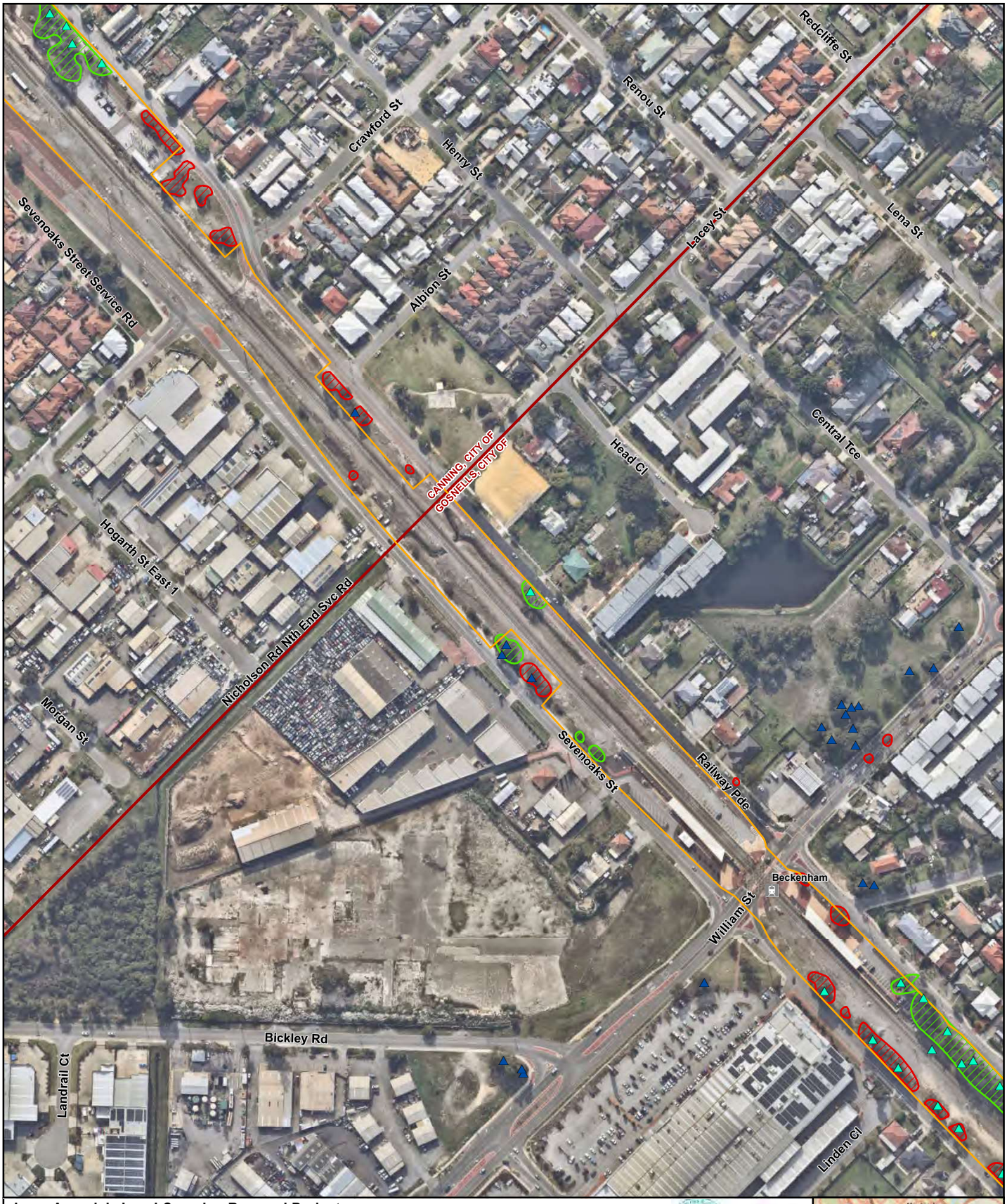


Inner Armadale Level Crossing Removal Project

NVCP Application Area - Native Vegetation Areas and Black Cockatoo Habitat Trees

Public Transport Authority

Legend

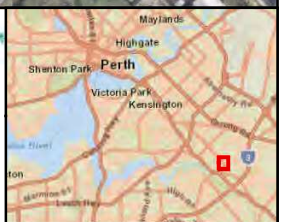
- Existing Rail Station
- NVCP Application Area
- LGA Boundaries *(Landgate, 2021)*

Black Cockatoo Habitat Trees *(Aurora, 2020)*

- Inside NVCP application area
- Outside NVCP application area

Vegetation *(PGV Environmental, 2020)*

- Native Vegetation
- Non-native Vegetation



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Approved by: P. Zuvela
File: PTA-GIS-LXR-0022-0001_v2
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Base Data: Nearmap 2019, Landgate 2019, Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

Inner Armadale Level Crossing Removal Project

NVCP Application Area - Native Vegetation Areas and Black Cockatoo Habitat Trees

Legend

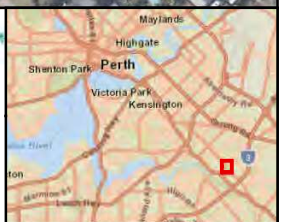
- Existing Rail Station
- NVCP Application Area
- LGA Boundaries *(Landgate, 2021)*

Black Cockatoo Habitat Trees *(Aurora, 2020)*

- Inside NVCP application area
- Outside NVCP application area

Vegetation *(PGV Environmental, 2020)*

- Native Vegetation
- Non-native Vegetation



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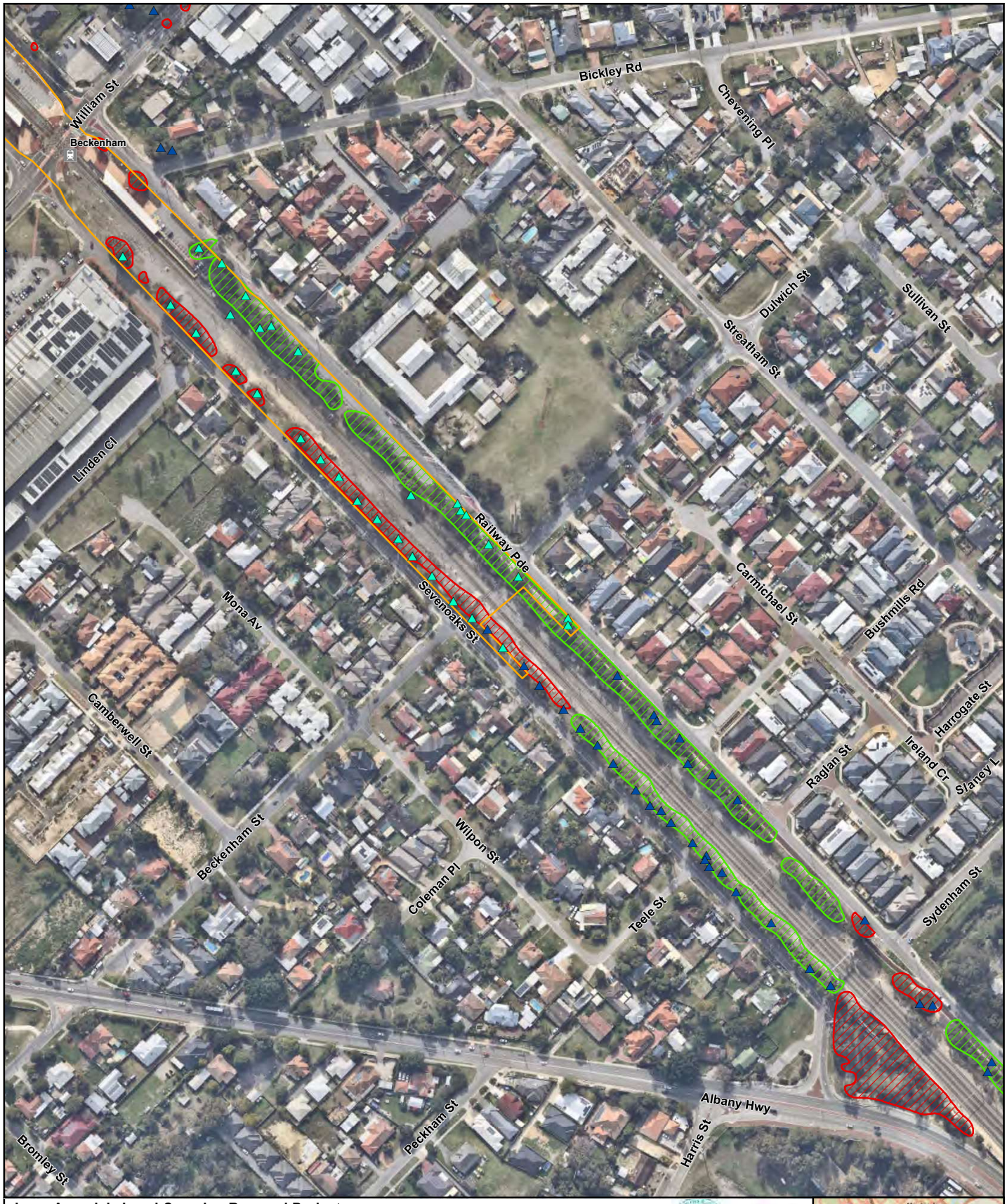
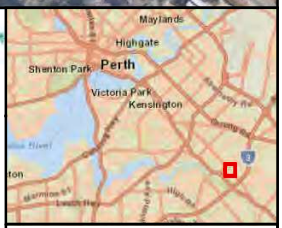


Inner Armadale Level Crossing Removal Project

NVCP Application Area - Native Vegetation Areas and Black Cockatoo Habitat Trees

Public Transport Authority



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