

# Figures

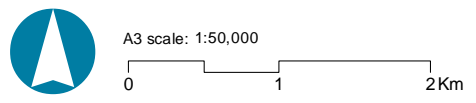


**Legend**

- Forrestfield-Airport Link
- Stations
- Major Roads
- Commonwealth Zoning

**PTA Rail System**

- Armadale / Thornlie Line
- Clarkson Line
- Fremantle Line
- Mandurah Line
- Midland Line

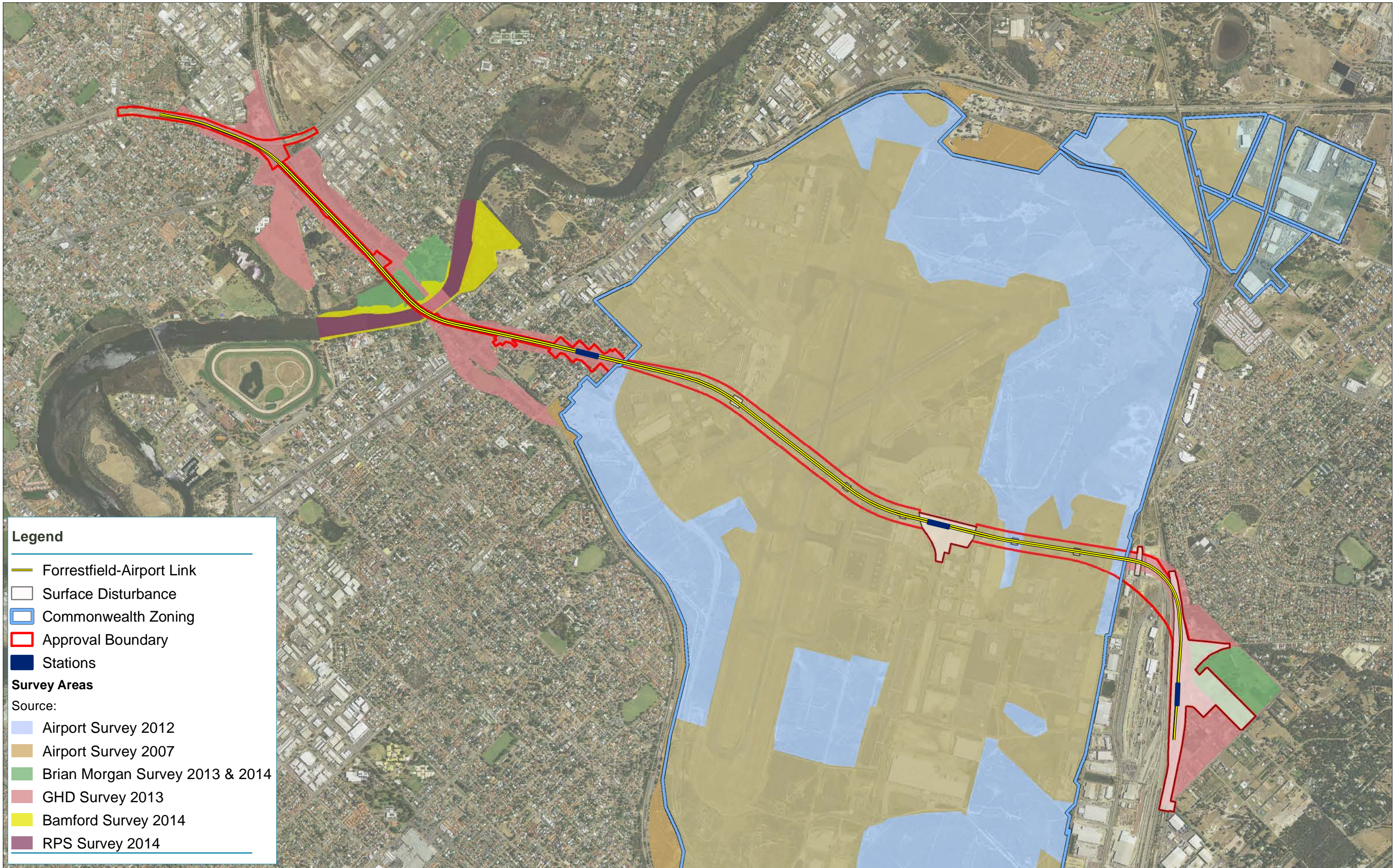


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 Datum: GDA 1994  
 Units: Meter

Date: 31/10/2014  
 Version: 0

**Forrestfield-Airport Link Environmental Impact Assessment**

Figure 1: FAL Alignment Location



**Legend**

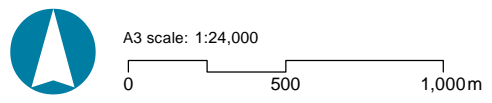
- Forreestfield-Airport Link
- Surface Disturbance
- Commonwealth Zoning
- Approval Boundary
- Stations

**Survey Areas**

Source:

- Airport Survey 2012
- Airport Survey 2007
- Brian Morgan Survey 2013 & 2014
- GHD Survey 2013
- Bamford Survey 2014
- RPS Survey 2014

Map by: MDN

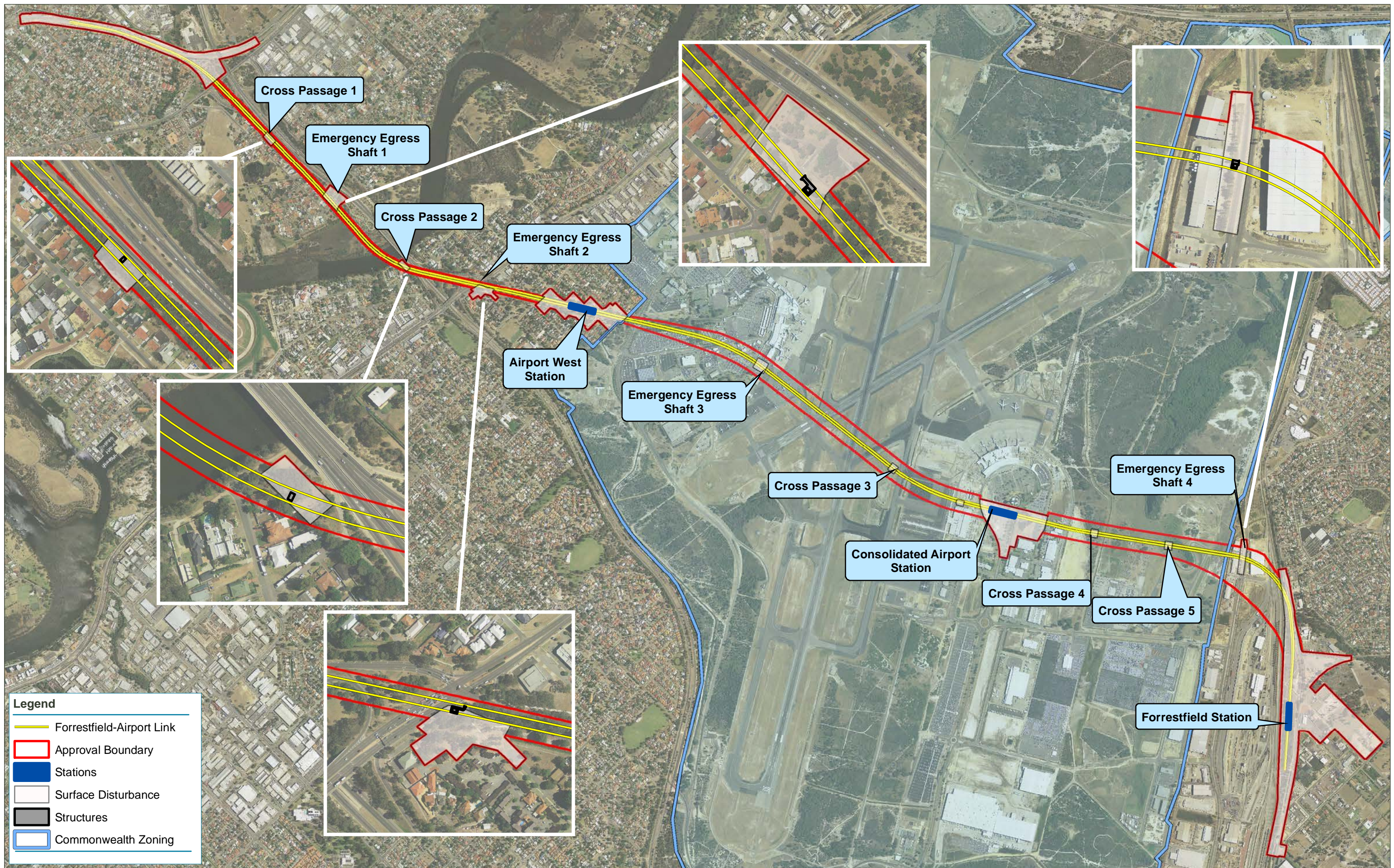


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Datum: GDA 1994  
Units: Meter

Date: 9/11/2014  
Version: 0

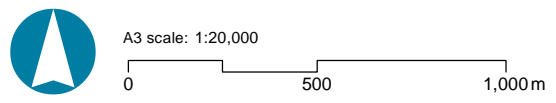
**Forreestfield-Airport Link Environmental Impact Assessment**

**Figure 2: Flora and Fauna Survey Areas**



**Legend**

- Forrestfield-Airport Link
- Approval Boundary
- Stations
- Surface Disturbance
- Structures
- Commonwealth Zoning

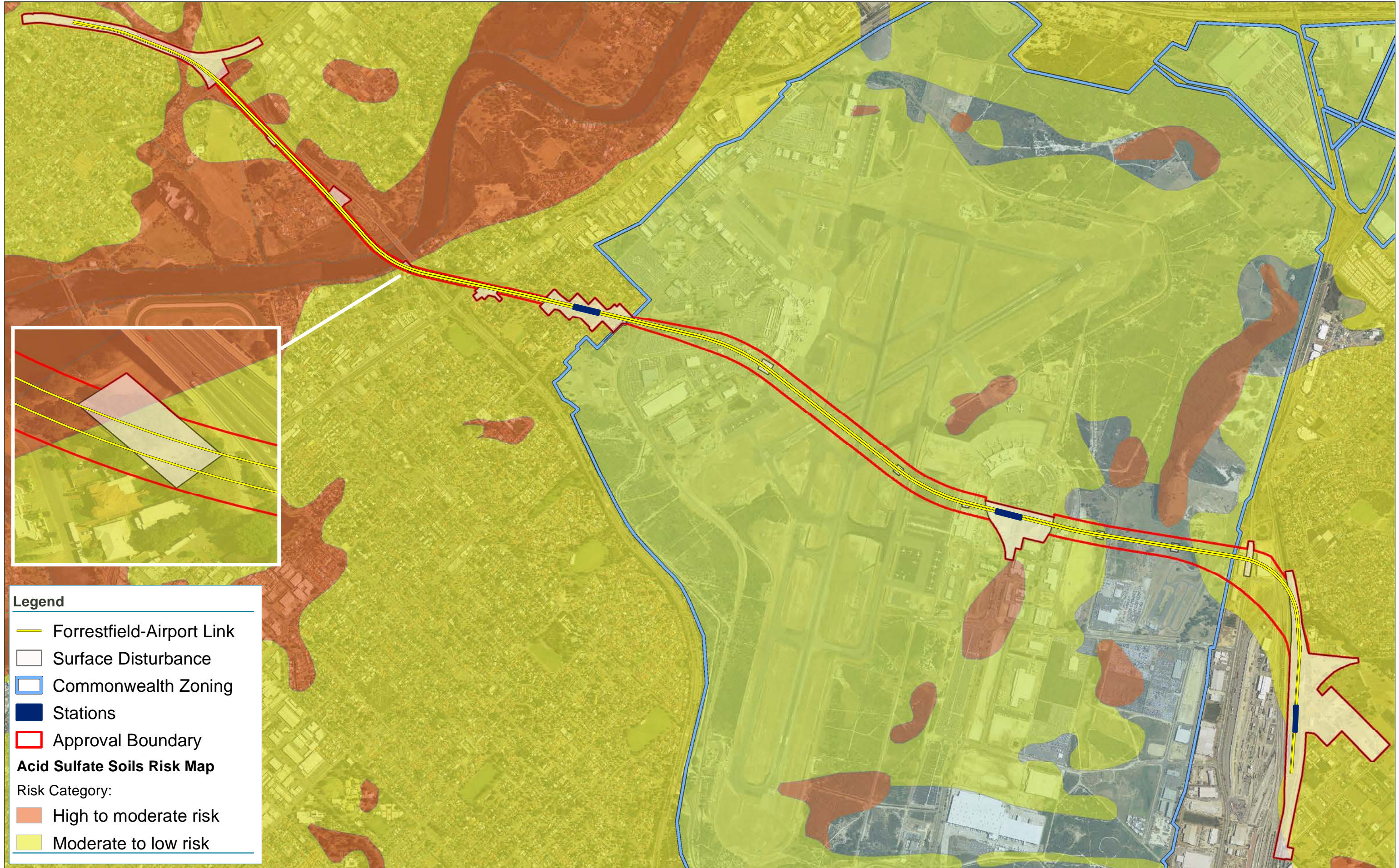


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 Projection: Transverse Mercator  
 Datum: GDA 1994  
 Units: Meter

Date: 9/11/2014  
 Version: 0

**Forrestfield-Airport Link Environmental Impact Assessment**

**Figure 3: FAL Concept Design**



**Legend**

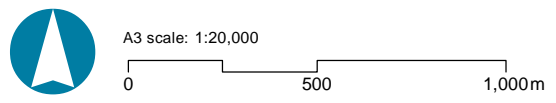
- Forrestfield-Airport Link
- Surface Disturbance
- Commonwealth Zoning
- Stations
- Approval Boundary

**Acid Sulfate Soils Risk Map**

Risk Category:

- High to moderate risk
- Moderate to low risk

Map by: MDN



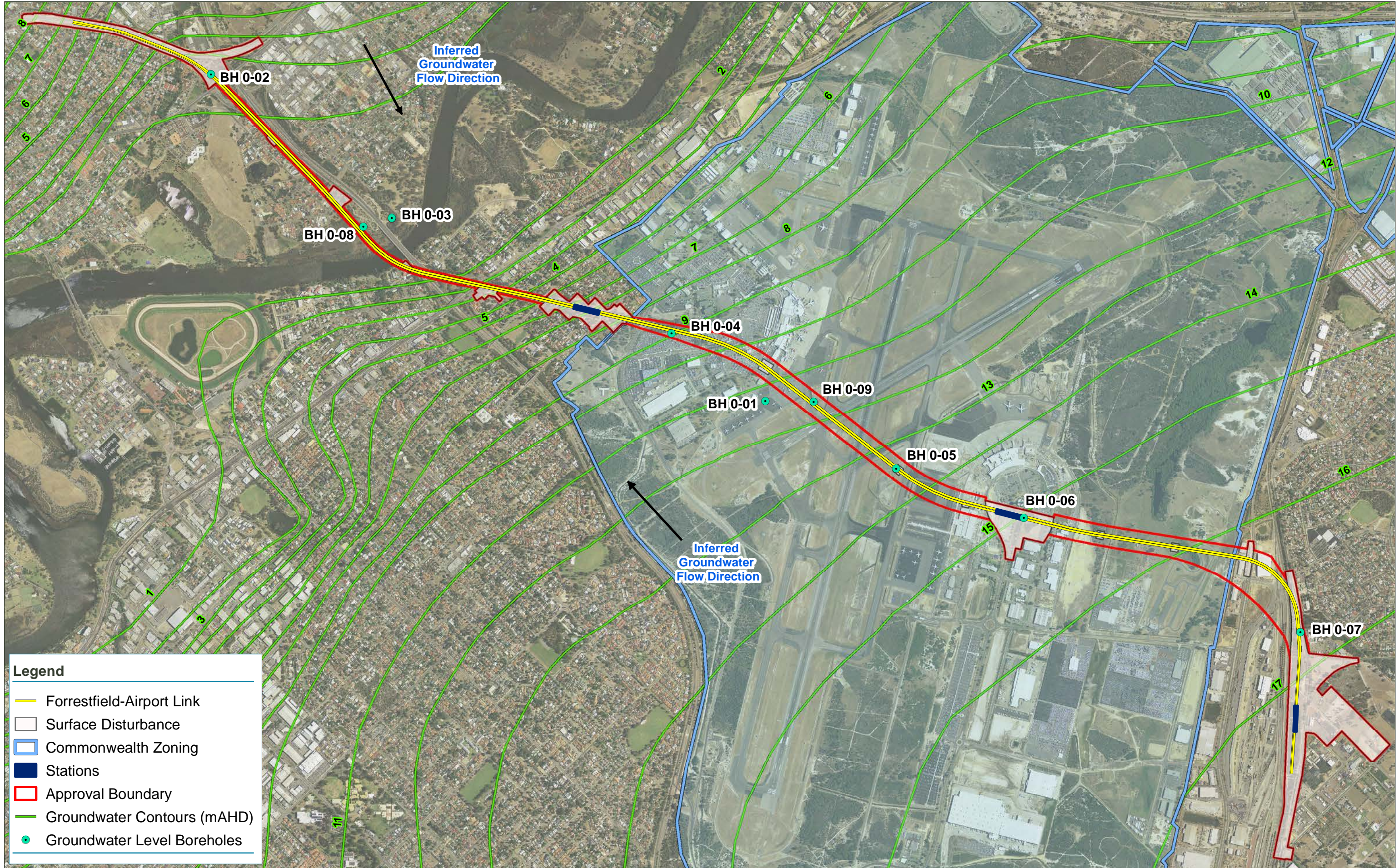
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Datum: GDA 1994  
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Date: 14/10/2014  
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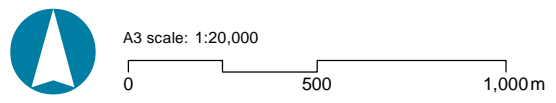
Data Source: Acid Sulfate Soils Risk Map (DER)

**Forrestfield-Airport Link Environmental Impact Assessment**

**Figure 4: Acid Sulfate Soils**



Map by: MDN



Coordinate System: GDA 1994 Perth Coastal Grid 1994  
Projection: Transverse Mercator  
Datum: GDA 1994  
Units: Meter

Date: 9/11/2014  
Version: 0

Source:  
Department of Water (Groundwater\_Contours\_Minimum May 2003)  
GHD 2014f

**Forrestfield-Airport Link Environmental Impact Assessment**

**Figure 5: Groundwater**



**Legend**

- Forrestfield-Airport Link
- Approval Boundary
- Commonwealth Zoning
- Surface Disturbance
- Stations
- Rivers and Drainage
- Swan River Trust - Development Control Area
- EPP Lakes

**Geomorphic Wetlands**

- Conservation
- Resource Enhancement
- Multiple Use

Map by: MA (RPS)

A3 scale: 1:20,000

0 500 1,000m

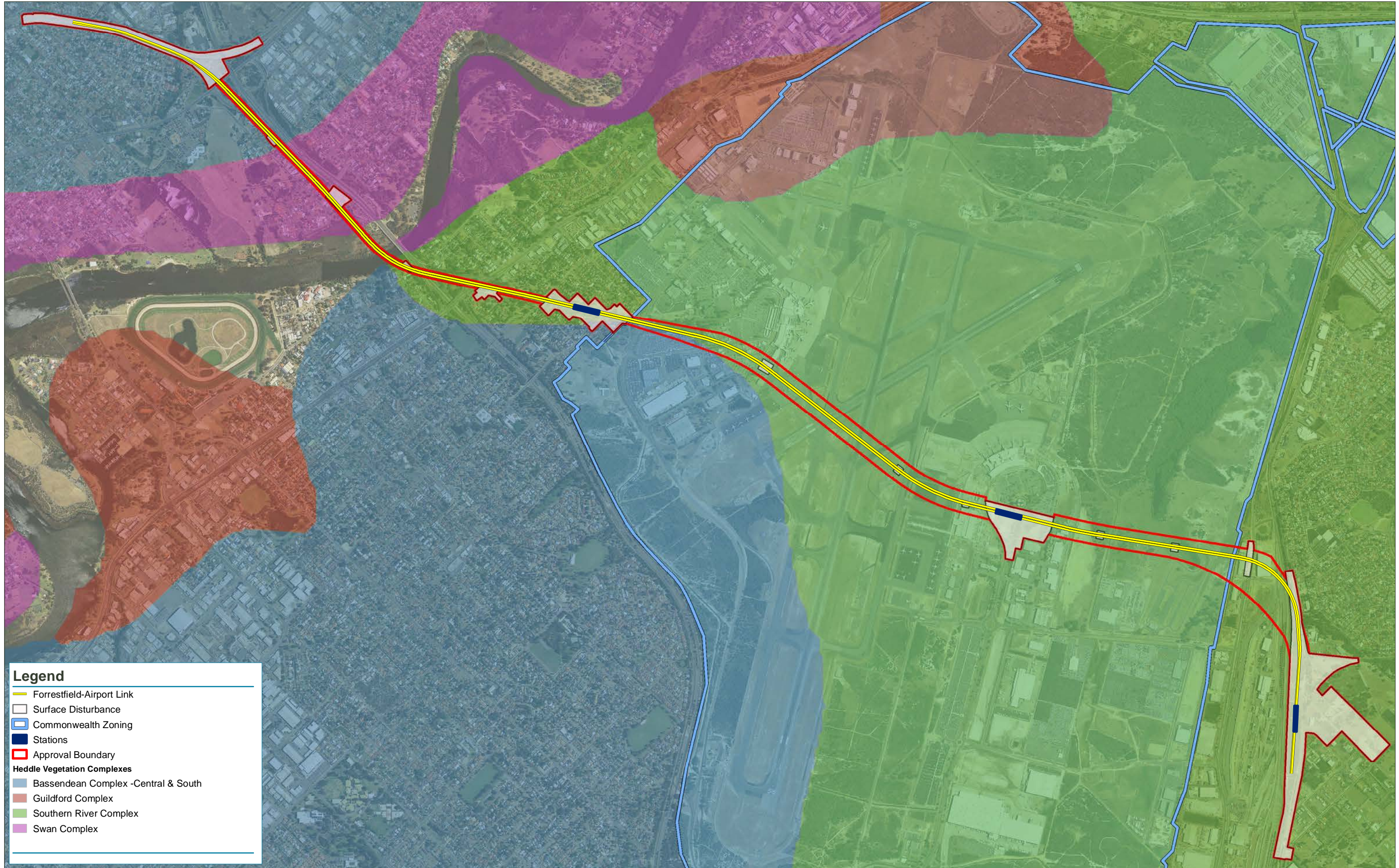
Coordinate System: GDA 1994 Perth Coastal Grid 1994  
Projection: Transverse Mercator  
Datum: GDA 1994  
Units: Meter

Date: 3/11/2014  
Version: 0

Source:  
Geomorphic Wetlands: DER (DEC\_004\_4283)  
SRT Management Area: DPaW, 2014 (SRT\_DCA\_boundary 140627.shp)  
EPP Lakes (epp\_1992\_scp\_lakes\_register\_boundaries, 1992)

**Forrestfield-Airport Link Environmental Impact Assessment**

**Figure 6: Surface Water**



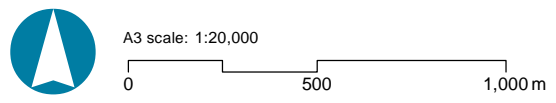
**Legend**

- Forrestfield-Airport Link
- Surface Disturbance
- Commonwealth Zoning
- Stations
- Approval Boundary

**Heddle Vegetation Complexes**

- Bassendean Complex -Central & South
- Guildford Complex
- Southern River Complex
- Swan Complex

Map by: MDN



Coordinate System: GDA 1994 Perth Coastal Grid 1994  
Projection: Transverse Mercator  
Datum: GDA 1994  
Units: Meter

Date: 9/11/2014  
Version: 0

Source: Heddle Vegetation Complexes (Heddle, Et. Al. - DEC, 1980)

**Forrestfield-Airport Link Environmental Impact Assessment**

**Figure 7: Heddle Vegetation Complexes**



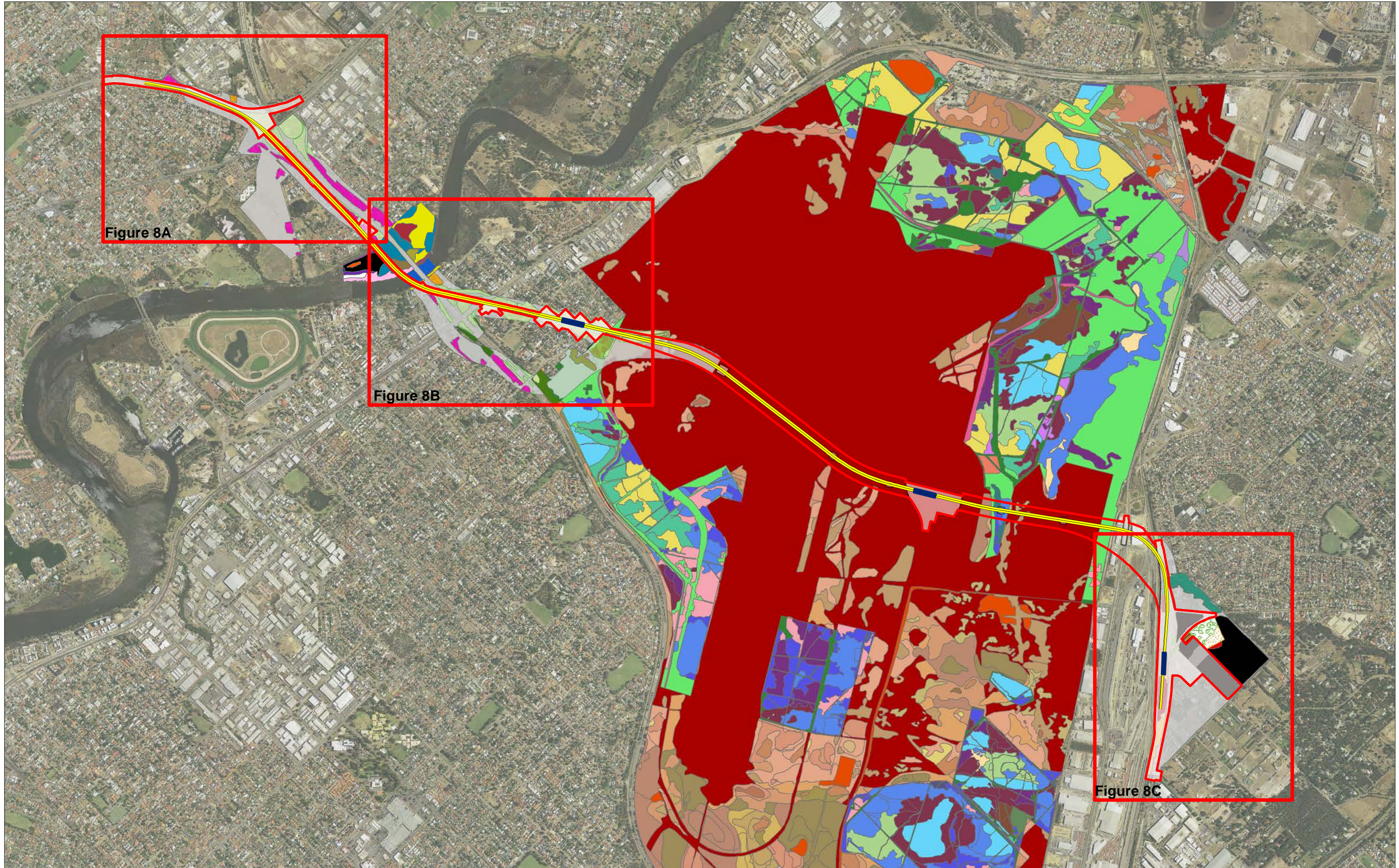
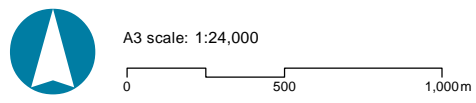


Figure 8A

Figure 8B

Figure 8C

Map by: MDN

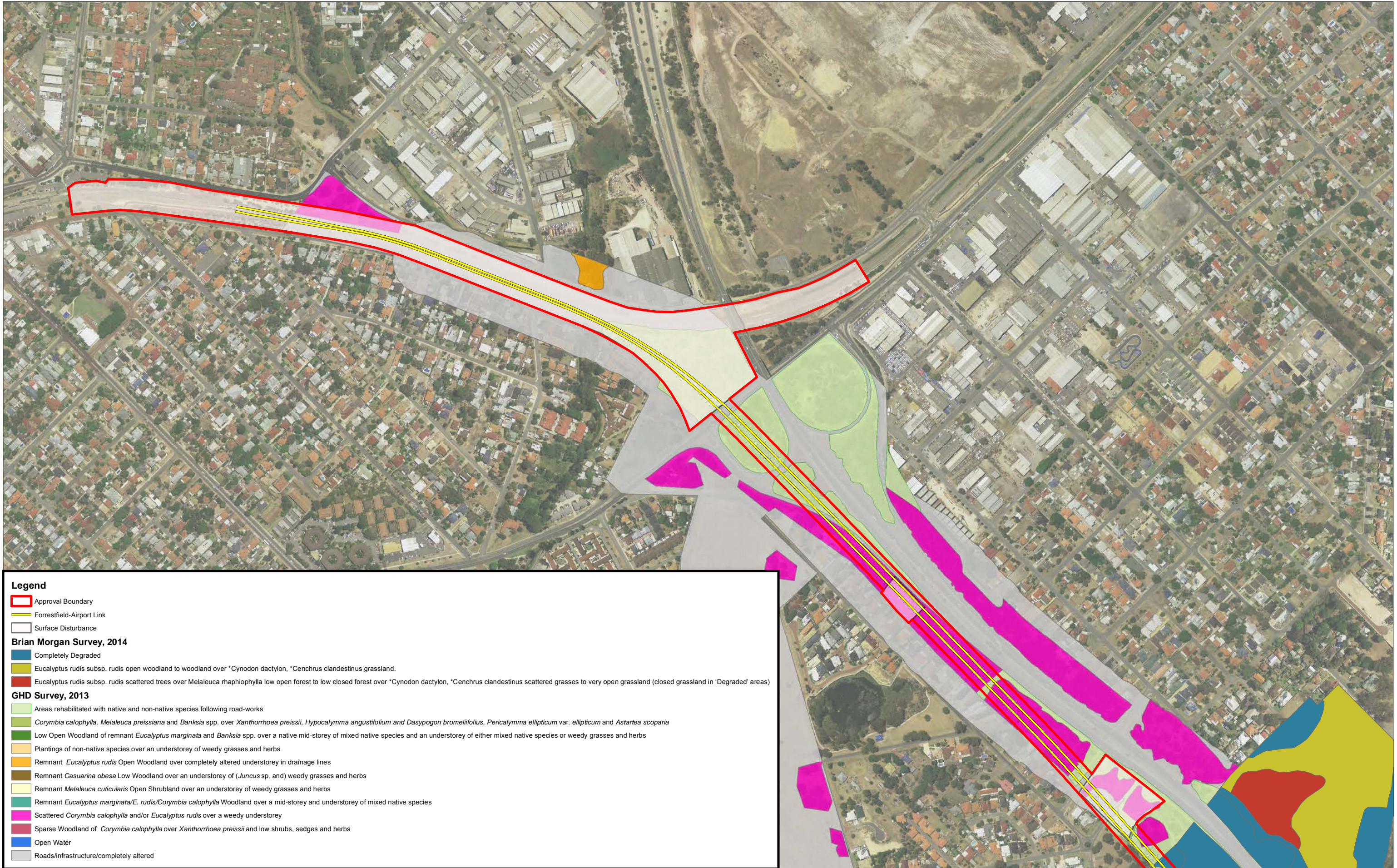


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Datum: GDA 1994  
Units: Meter

Date: 18/10/2014  
Version: 0

### Forrestfield-Airport Link Environmental Impact Assessment

Figure 8: Vegetation Types



**Legend**

- Approval Boundary
- Forrestfield-Airport Link
- Surface Disturbance

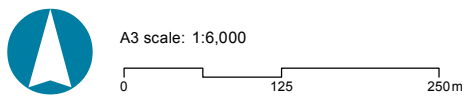
**Brian Morgan Survey, 2014**

- Completely Degraded
- Eucalyptus rudis subsp. rudis open woodland to woodland over \*Cynodon dactylon, \*Cenchrus clandestinus grassland.
- Eucalyptus rudis subsp. rudis scattered trees over Melaleuca raphiophylla low open forest to low closed forest over \*Cynodon dactylon, \*Cenchrus clandestinus scattered grasses to very open grassland (closed grassland in 'Degraded' areas)

**GHD Survey, 2013**

- Areas rehabilitated with native and non-native species following road-works
- Corymbia calophylla, Melaleuca preissiana and Banksia spp. over Xanthorrhoea preissii, Hypocalymma angustifolium and Dasypogon bromeliifolius, Pericalymma ellipticum var. ellipticum and Astartea scoparia
- Low Open Woodland of remnant Eucalyptus marginata and Banksia spp. over a native mid-storey of mixed native species and an understorey of either mixed native species or weedy grasses and herbs
- Plantings of non-native species over an understorey of weedy grasses and herbs
- Remnant Eucalyptus rudis Open Woodland over completely altered understorey in drainage lines
- Remnant Casuarina obesa Low Woodland over an understorey of (Juncus sp. and) weedy grasses and herbs
- Remnant Melaleuca cuticularis Open Shrubland over an understorey of weedy grasses and herbs
- Remnant Eucalyptus marginata/E. rudis/Corymbia calophylla Woodland over a mid-storey and understorey of mixed native species
- Scattered Corymbia calophylla and/or Eucalyptus rudis over a weedy understorey
- Sparse Woodland of Corymbia calophylla over Xanthorrhoea preissii and low shrubs, sedges and herbs
- Open Water
- Roads/infrastructure/completely altered

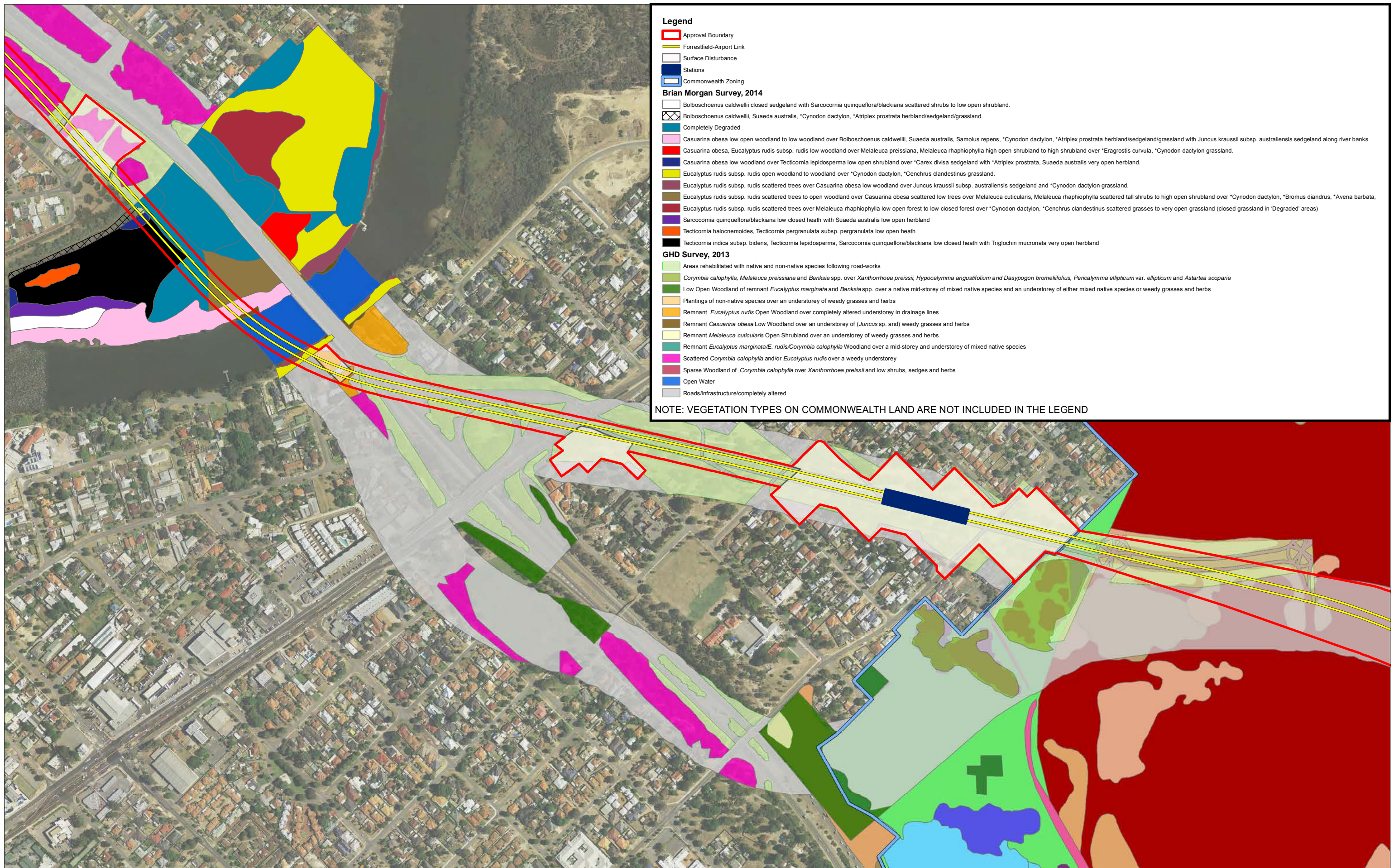
Map by: MDN



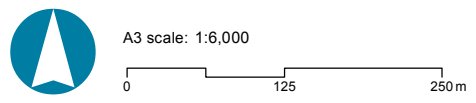
Coordinate System: GDA 1994 Perth Coastal Grid 1994  
Projection: Transverse Mercator  
Datum: GDA 1994  
Units: Meter

Date: 9/11/2014  
Version: 0

**Figure 8a: Vegetation Types**



Map by: MDN



Coordinate System: GDA 1994 Perth Coastal Grid 1994  
 Projection: Transverse Mercator  
 Datum: GDA 1994  
 Units: Meter

Date: 9/11/2014  
 Version: 0

### Forreestfield-Airport Link Environmental Impact Assessment

Figure 8b: Vegetation Types



**Legend**

- Approval Boundary
- Forrestfield-Airport Link
- Surface Disturbance
- Stations

**Brian Morgan Survey, 2013**

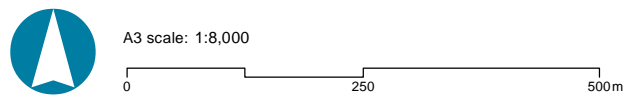
- Allocasuarina fraseriana low open woodland over Xanthorrhoea preissii open shrubland over Verticordia densiflora var. densiflora, Hibbertia hypercoides low shrubland over Alexgeorgea nitens, Caustis dioica, open sedgeland/herbland/grassland
- Completely Degraded
- Corymbia calophylla open woodland over Hypocalymma angustifolium, Verticordia densiflora var. densiflora low open shrubland to low open heath over Caustis dioica open sedgland/herbland
- Corymbia calophylla open woodland over Verticordia densiflora var. densiflora low open heath over Caustis dioica, Hypolaena exsulca very open sedgeland/herbland
- Degraded
- Not Assessed

**GHD Survey, 2013**

- Areas rehabilitated with native and non-native species following road-works
- Corymbia calophylla, Melaleuca preissiana and Banksia spp. over Xanthorrhoea preissii, Hypocalymma angustifolium and Dasypogon bromeliifolius, Pericalymma ellipticum var. ellipticum and Astartea scoparia
- Low Open Woodland of remnant Eucalyptus marginata and Banksia spp. over a native mid-storey of mixed native species and an understorey of either mixed native species or weedy grasses and herbs
- Plantings of non-native species over an understorey of weedy grasses and herbs
- Remnant Eucalyptus rudis Open Woodland over completely altered understorey in drainage lines
- Remnant Casuarina obesa Low Woodland over an understorey of (Juncus sp. and) weedy grasses and herbs
- Remnant Melaleuca cuticularis Open Shrubland over an understorey of weedy grasses and herbs
- Remnant Eucalyptus marginata/E. rudis/Corymbia calophylla Woodland over a mid-storey and understorey of mixed native species
- Scattered Corymbia calophylla and/or Eucalyptus rudis over a weedy understorey
- Sparse Woodland of Corymbia calophylla over Xanthorrhoea preissii and low shrubs, sedges and herbs
- Open Water
- Roads/infrastructure/completely altered

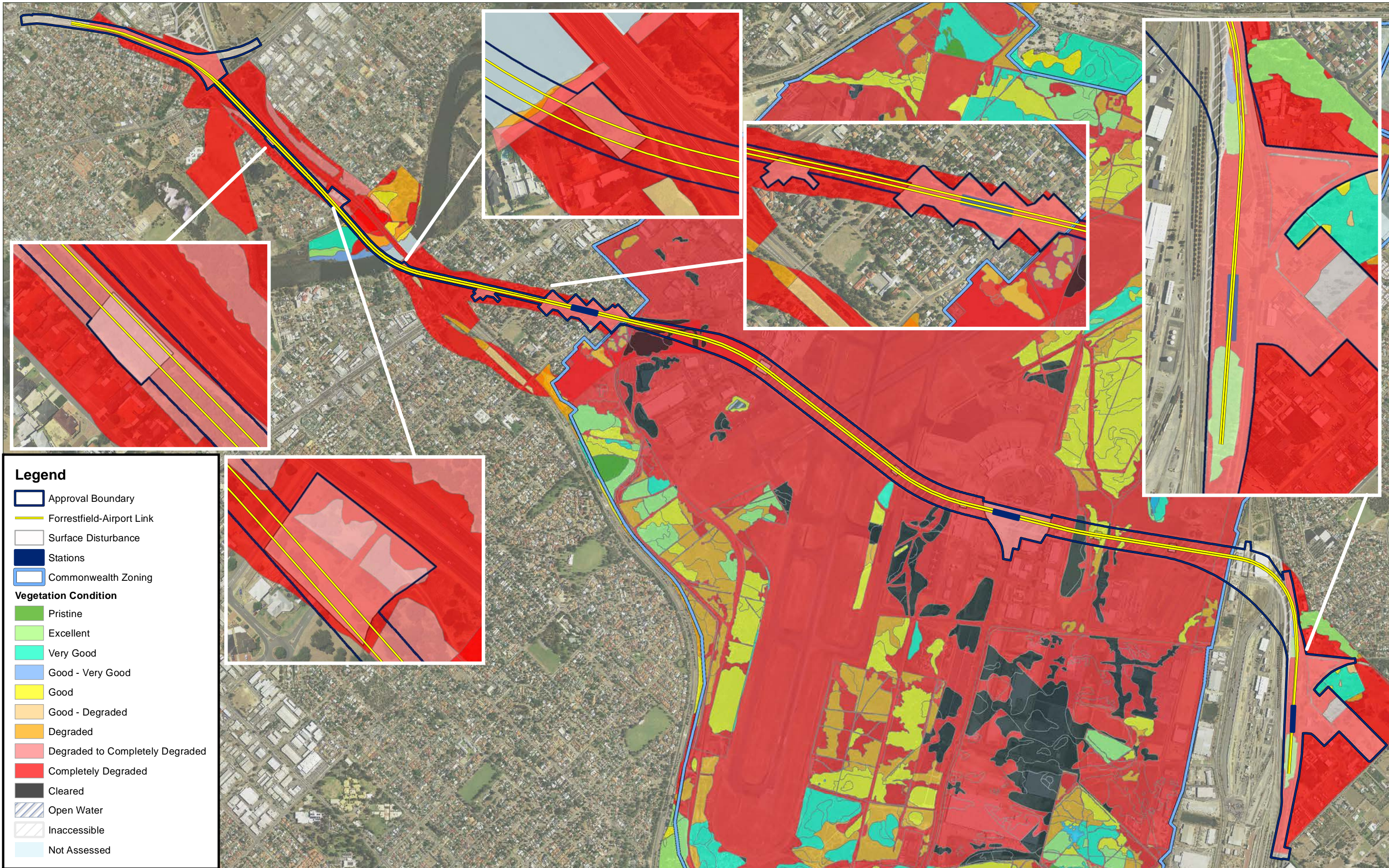
**NOTE: VEGETATION TYPES ON COMMONWEALTH LAND ARE NOT INCLUDED IN THE LEGEND**

Map by: MDN

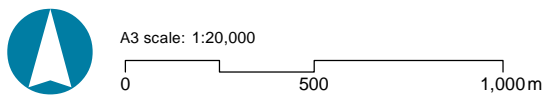


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Units: Meter

Date: 9/11/2014  
Version: 0



Map by: MDN



Coordinate System: GDA 1994 Perth Coastal Grid 1994  
Projection: Transverse Mercator  
Datum: GDA 1994  
Units: Meter

Date: 9/11/2014

Version: 0

Source:  
Brian Morgan, 2013 & 2014  
GHD, 2013  
Airport, 2007 & 2012

**Forrestfield-Airport Link Environmental Impact Assessment**

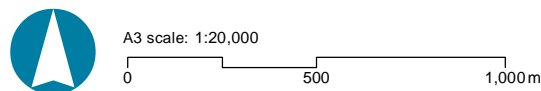
**Figure 9: Vegetation Condition**



**Forrestdfield-Airport Link Environmental Impact Assessment**

**Figure 10: Threatened and Priority Ecological Communities and Declared Rare Flora**

Map by: AA (RPS)



Coordinate System: PCG94  
Projection: Transverse Mercator  
Datum: GDA 1994  
Units: Meter

Date: 3/11/2014  
Version: 0

Source:  
GHD, 2014  
Brian Morgan (2013 - 2014)



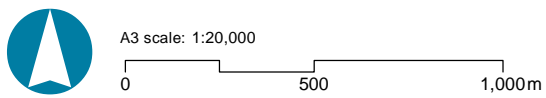
**Legend**

- Forrestfield-Airport Link
- Surface Disturbance
- Stations
- Commonwealth Zoning
- Approval Boundary

**Dieback Mapping:**

- Samples
- Uninfested
- Unmappable

Map by: MDN



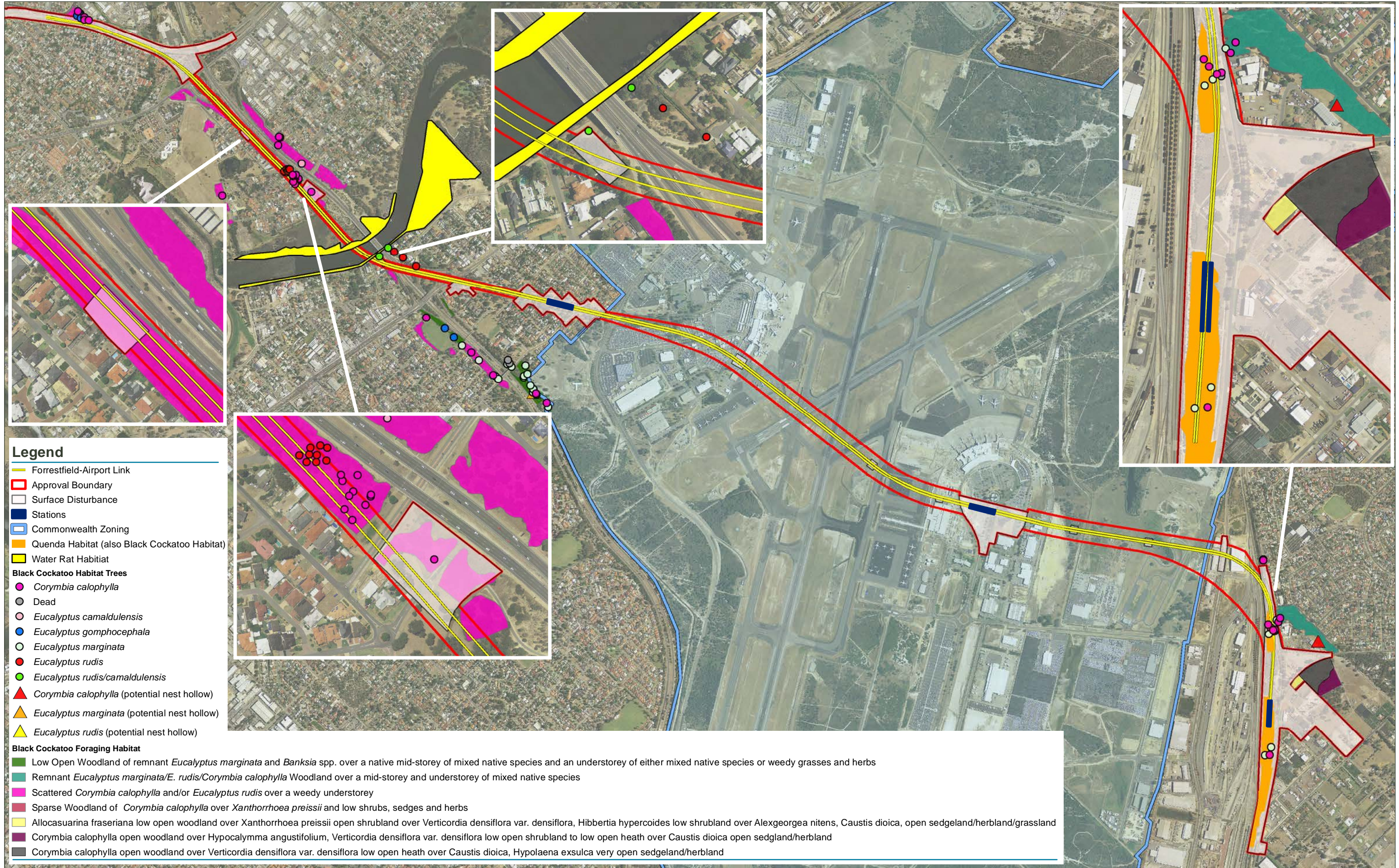
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Projection: Transverse Mercator  
Datum: GDA 1994  
Units: Meter

Date: 20/10/2014  
Version: 0

Source: Glevan Consulting (2014)

**Forrestfield-Airport Link Environmental Impact Assessment**

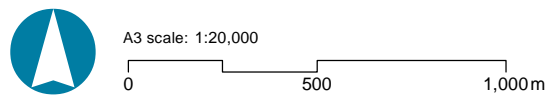
**Figure 11: Dieback Mapping**



**Legend**

- Forrestfield-Airport Link
- Approval Boundary
- Surface Disturbance
- Stations
- Commonwealth Zoning
- Quenda Habitat (also Black Cockatoo Habitat)
- Water Rat Habitat
- Black Cockatoo Habitat Trees**
- *Corymbia calophylla*
- Dead
- *Eucalyptus camaldulensis*
- *Eucalyptus gomphocephala*
- *Eucalyptus marginata*
- *Eucalyptus rudis*
- *Eucalyptus rudis/camaldulensis*
- ▲ *Corymbia calophylla* (potential nest hollow)
- ▲ *Eucalyptus marginata* (potential nest hollow)
- ▲ *Eucalyptus rudis* (potential nest hollow)
- Black Cockatoo Foraging Habitat**
- Low Open Woodland of remnant *Eucalyptus marginata* and *Banksia* spp. over a native mid-storey of mixed native species and an understorey of either mixed native species or weedy grasses and herbs
- Remnant *Eucalyptus marginata*/*E. rudis*/*Corymbia calophylla* Woodland over a mid-storey and understorey of mixed native species
- Scattered *Corymbia calophylla* and/or *Eucalyptus rudis* over a weedy understorey
- Sparse Woodland of *Corymbia calophylla* over *Xanthorrhoea preissii* and low shrubs, sedges and herbs
- Allocasuarina fraseriana low open woodland over *Xanthorrhoea preissii* open shrubland over *Verticordia densiflora* var. *densiflora*, *Hibbertia hypercoides* low shrubland over *Alexgeorgea nitens*, *Caustis dioica*, open sedgeland/herbland/grassland
- *Corymbia calophylla* open woodland over *Hypocalymma angustifolium*, *Verticordia densiflora* var. *densiflora* low open shrubland to low open heath over *Caustis dioica* open sedgeland/herbland
- *Corymbia calophylla* open woodland over *Verticordia densiflora* var. *densiflora* low open heath over *Caustis dioica*, *Hypolaena exsulca* very open sedgeland/herbland

Map by: MDN



Coordinate System: GDA 1994 Perth Coastal Grid 1994  
Projection: Transverse Mercator  
Datum: GDA 1994  
Units: Meter

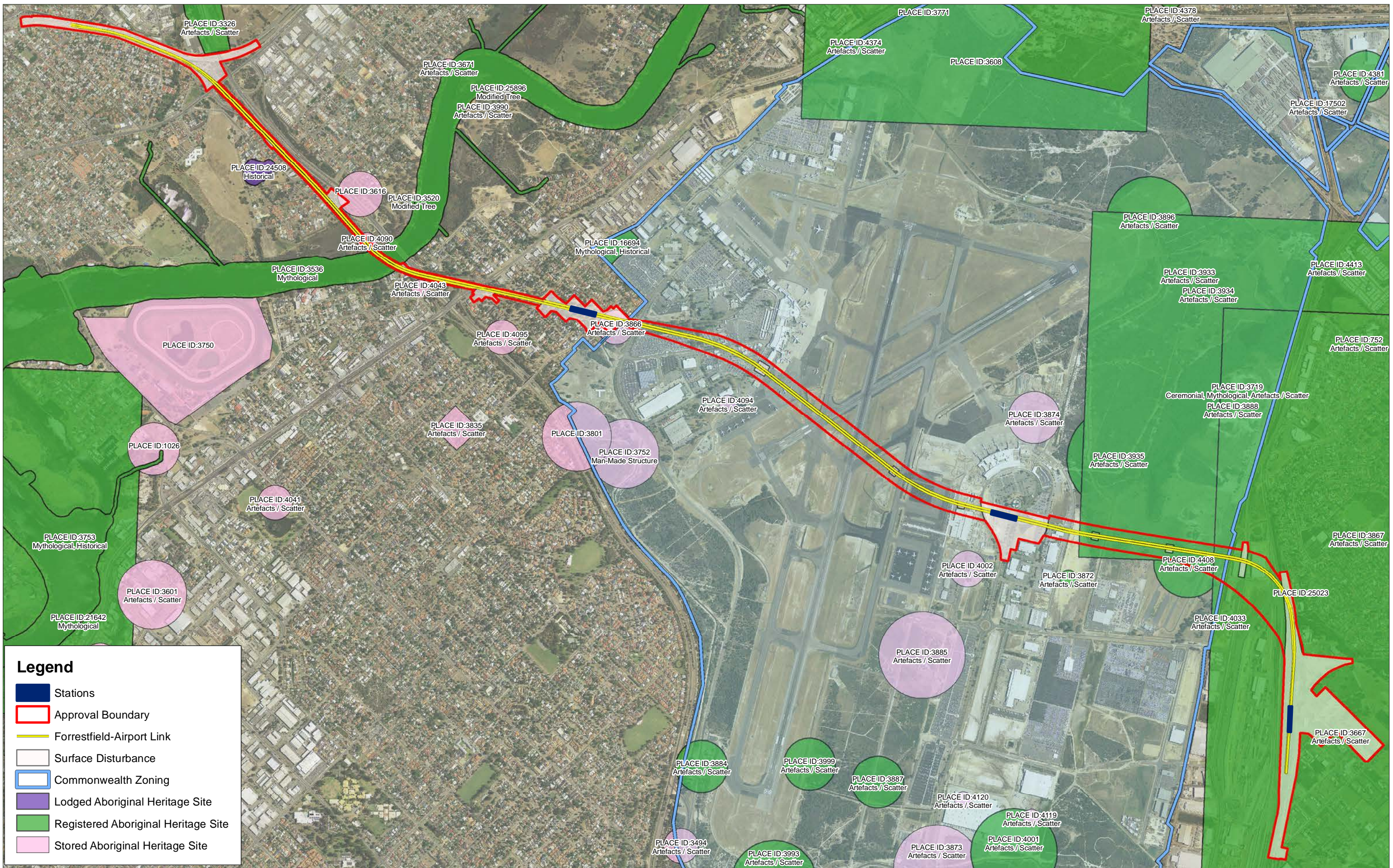
Date: 9/11/2014  
Version: 0

Source:  
GHD, 2013  
Brian Morgan, 2013  
Bamford, 2014

**Forrestfield-Airport Link Environmental Impact Assessment**

**Figure 12: Significant Fauna Habitat**

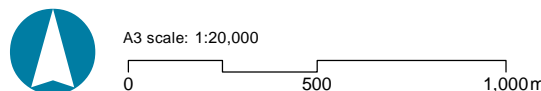




**Legend**

- Stations
- Approval Boundary
- Forrestdfield-Airport Link
- Surface Disturbance
- Commonwealth Zoning
- Lodged Aboriginal Heritage Site
- Registered Aboriginal Heritage Site
- Stored Aboriginal Heritage Site

Map by: MDN



Coordinate System: GDA 1994 Perth Coastal Grid 1994  
 Projection: Transverse Mercator  
 Datum: GDA 1994  
 Units: Meter

Date: 20/10/2014  
 Version: 0

Source: DAA, 2011

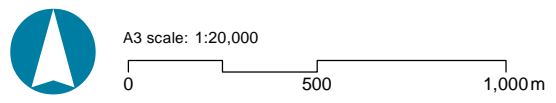
**Forrestdfield-Airport Link Environmental Impact Assesment**

**Figure 13: Aboriginal Heritage**



**Legend**

- Forrestdfield-Airport Link
- Surface Disturbance
- Commonwealth Zoning
- Approval Boundary
- Stations
- Bush Forever Sites
- Environmentally Sensitive Areas



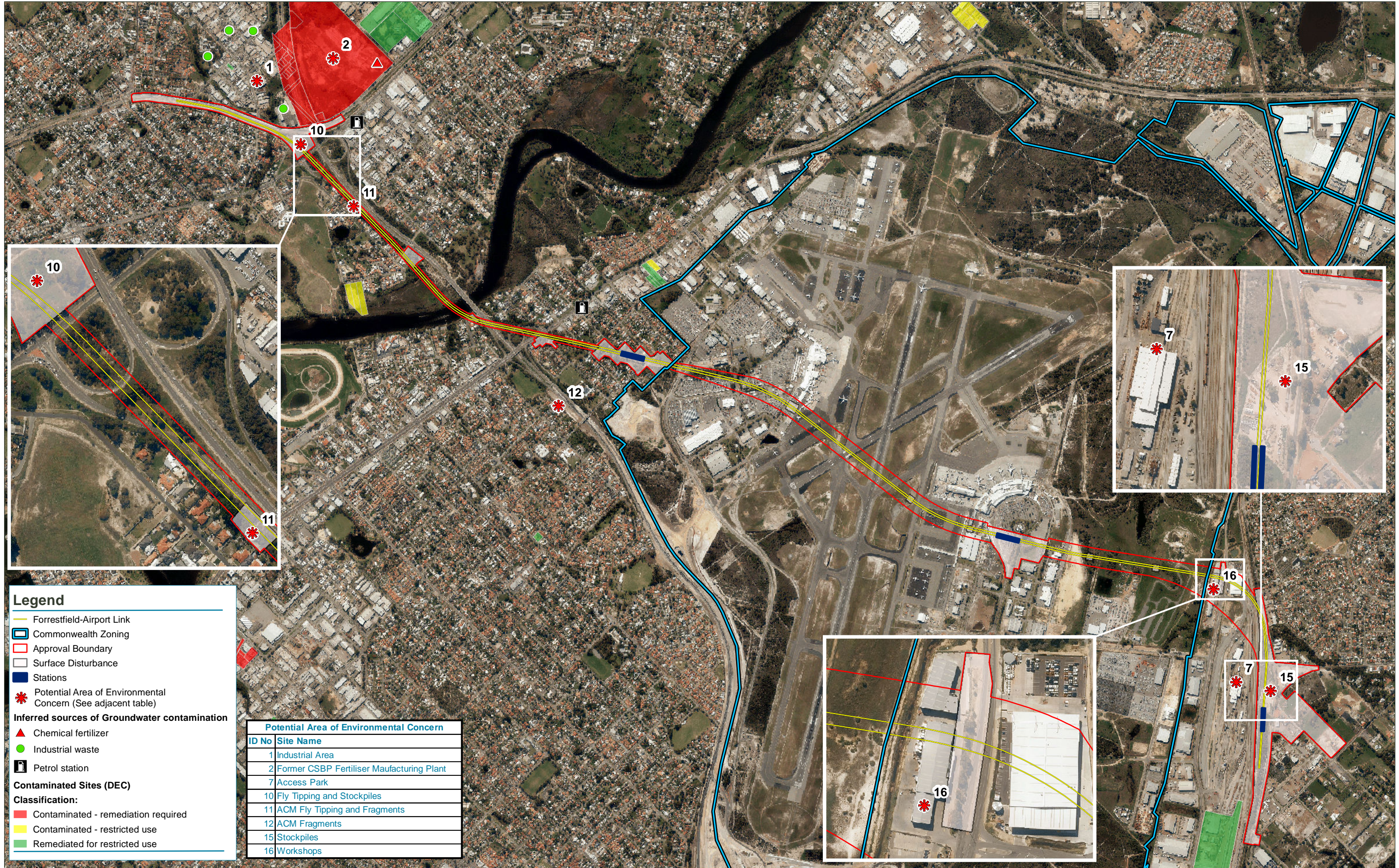
Coordinate System: GDA 1994 Perth Coastal Grid 1994  
Projection: Transverse Mercator  
Datum: GDA 1994  
Units: Meter

Date: 9/11/2014  
Version: 0

Source:  
DER (DEC\_038\_4283)  
DPI (bf\_sites, 2002)

**Forrestdfield-Airport Link Environmental Impact Assessment**

**Figure 14: Surrounding Land Uses**



**Legend**

- Forreestfield-Airport Link
- ▭ Commonwealth Zoning
- ▭ Approval Boundary
- ▭ Surface Disturbance
- Stations
- \* Potential Area of Environmental Concern (See adjacent table)

**Inferred sources of Groundwater contamination**

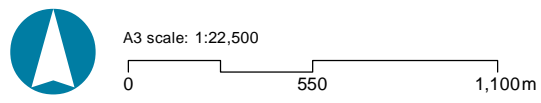
- ▲ Chemical fertilizer
- Industrial waste
- 🛢️ Petrol station

**Contaminated Sites (DEC)**

**Classification:**

- Contaminated - remediation required
- Contaminated - restricted use
- Remediated for restricted use

Potential Area of Environmental Concern	
ID No	Site Name
1	Industrial Area
2	Former CSBP Fertiliser Manufacturing Plant
7	Access Park
10	Fly Tipping and Stockpiles
11	ACM Fly Tipping and Fragments
12	ACM Fragments
15	Stockpiles
16	Workshops



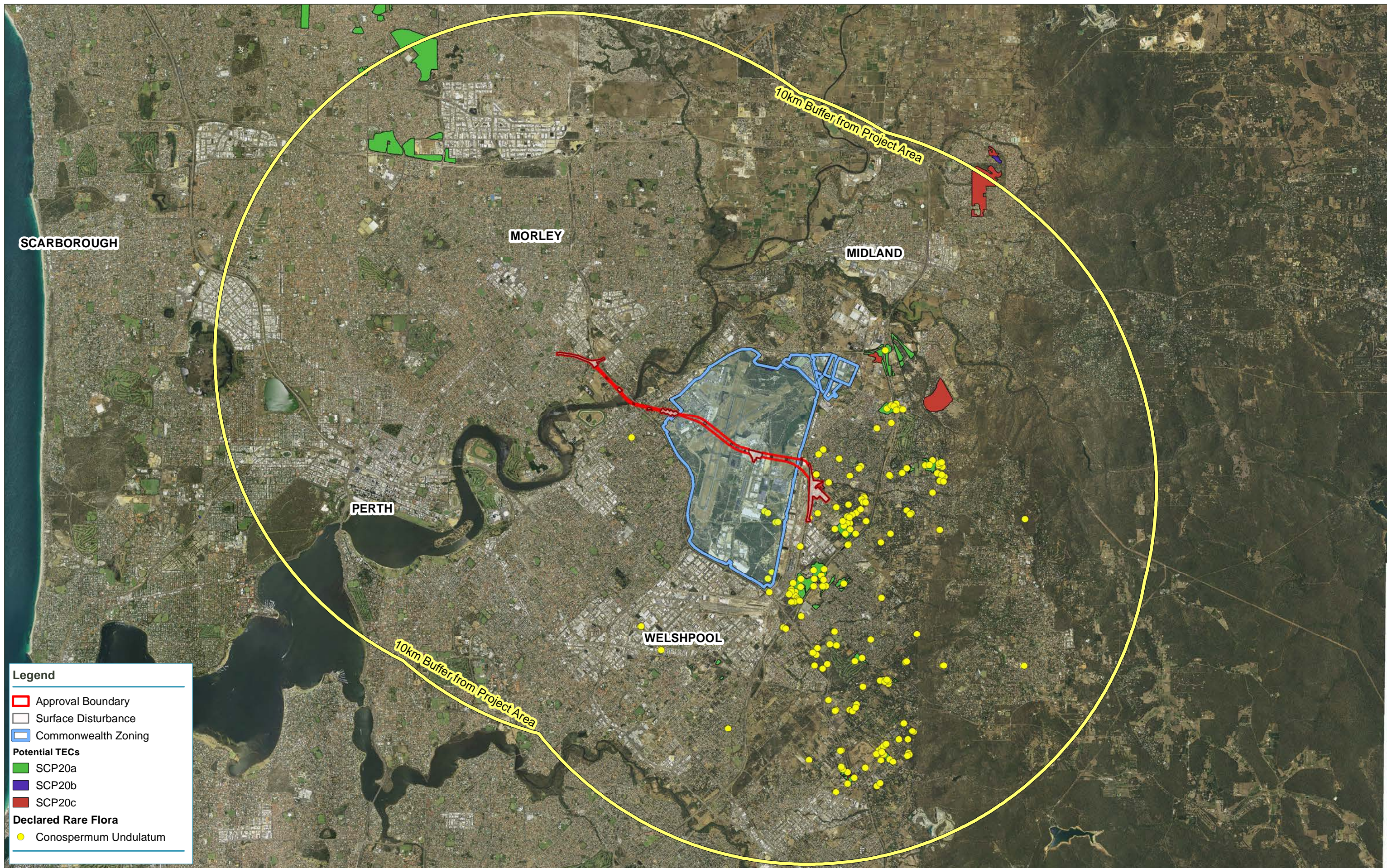
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Projection: Transverse Mercator  
Datum: GDA 1994  
Units: Meter

Date: 31/10/2014  
Version: 0

Source:  
DER Contaminated Sites (DEC\_032\_4283, 2006)  
GHD PSI (2013)

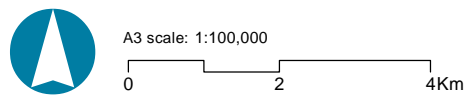
**Forreestfield-Airport Link Environmental Impact Assessment**

Figure 15: Potentially Contaminated Sites



**Legend**

- Approval Boundary
- Surface Disturbance
- Commonwealth Zoning
- Potential TECs**
- SCP20a
- SCP20b
- SCP20c
- Declared Rare Flora**
- Conospermum Undulatum*



Coordinate System: GDA 1994 Perth Coastal Grid 1994  
Projection: Transverse Mercator  
Datum: GDA 1994  
Units: Meter

Date: 20/10/2014  
Version: 0

Source: DPaW, 2014

**Forrestfield-Airport Link Environmental Impact Assessment**

**Figure 16: Regional Threatened Ecological Communities (TECs)**