City of Karratha

Lot 4615 Turner Way Structure Plan

Date: October 2018. Rev 1.0

Veris Ref: 20404-01

DEVELOP WITH CONFIDENCE ™

CERTIFICATION OF APPROVED STRUCTURE PLAN

This Structure Plan is prepared under the provisions of the City of Karratha Town Planning Scheme No. 8 and in accordance with the *Planning and Development (Local Planning Schemes) Regulations 2015*

IT IS CERTIFIED THAT THIS STRUCTURE PLAN
WAS APPROVED BY RESOLUTION OF
THE WESTERN AUSTRALIAN PLANNING COMMISSION ON:

17/12/2018 .....Date

Signed for and on behalf of the Western Australian Planning Commission

.....

An officer of the Commission duly authorised by the Commission pursuant to section 16 of the *Planning and Development Act 2005* for that purpose, in the presence of:

.....Witness

17/12/2018 .....Date

17/12/2028 Date of Expiry of this Structure Plan

TABLE OF MODIFICATIONS TO STRUCTURE PLAN

Modification No.	Description of Modification	Date Endorsed by Council	Date Endorsed by WAPC

EXECUTIVE SUMMARY

This Structure Plan has been prepared for Lot 4615 Turner Way, Bulgarra (Karratha). The subject site is located approximately 1.5km east of Karratha town centre and is situated within the municipality of the City of Karratha.

This Structure Plan report provides the rationale, justification and planning framework to guide and facilitate the development of approximately 9.44 hectares of land for urban purposes. The Structure Plan has been prepared in accordance with the provisions of the *Planning and Development (Local Planning Schemes) Regulations 2015* Schedule 2 Part 4 'Structure Plans'. The City of Karratha Town Planning Scheme No. 8 (TPS 8) requires the preparation and approval of a Structure Plan for land zoned 'Urban Development'.

The subject site forms part of the Bulgarra area within the *Karratha Revitalisation Strategy*, which provides a guide for the future growth and development opportunities for Karratha townsite. The Strategy identifies the subject site as relatively unconstrained for future redevelopment as an urban infill site. The Structure Plan proposes to retain the existing Karratha Primary School and community centre fronting Bayview Road. There is approximately 4.24 hectares of surplus land, mainly in the western half of the site, which could accommodate future residential subdivision and development. The following table is a summary of the proposed Structure Plan.

Item	Data	Section number referenced within the Structure Plan Report
Total area covered by the Structure Plan	9.44 hectares	4.6
Area of each land use proposed - Residential - Public Open Space & Drainage	4.24 hectares 0.424 hectares (possibly as cash in lieu)	5.2
Total estimated lot yield	49 lots (based on conceptual subdivision plan)	4.3
Estimated number of dwellings	69 dwellings (based on conceptual subdivision plan)	5.2
Estimated residential site density	16 dwellings per site hectare	5.2
Estimated Population (average 2.8 people/household)	193 people	5.2
Estimated area and percentage of public open space given over to: - Local Park	Provision of required 0.424 ha (10% POS) to be negotiated at subdivision/ development approval stage	4.6

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PART ONE – IMPLEMENTATION

1. Structure Plan Area

This Structure Plan shall apply to Lot 4516 (Crown Reserve 30602) on Deposited Plan 193623, Bulgarra being the land contained within the inner edge of the line denoting the Structure Plan boundary on Plan 1 – Structure Plan.

2. Operation

(a) In accordance with Clause 22 of Schedule 2 of the *Planning and Development (Local Planning Scheme) Regulations 2015*, this Structure Plan shall come into operation on the day on which it is endorsed by the Western Australian Planning Commission (WAPC).

(b) In accordance with Clause 28 (1) of Schedule 2 of the *Planning and Development (Local Planning Scheme) Regulations 2015*, this Structure Plan has effect for a period of 10 years commencing on the day on which the WAPC endorses the Plan in accordance with 2(a) above.

3. Staging

The Structure Plan is proposed to be staged in multiple stages due to the different existing and future land uses. Staging is likely to occur as follows:

(i) Stage 1a – Subdivision of existing primary school to create balance Crown Reserve 30602. This would likely include creation/construction of an internal access road (within the Neighbourhood Connector 'B' road reserve), which will provide access to the primary school from Bayview Road. The design of the internal accessway to Bayview Road will be undertaken in consultation with City of Karratha. An easement in gross over the internal accessway would be required until formal access is provided, via a dedicated and constructed public street, which would occur during later stages.

(ii) Stage 1b – Subdivision of existing community (family centre) land use to provide for a separate lot with direct access and frontage to Bayview Road.

(iii) Stage 2 – Subsequent to Stages 1a & 1b, a separate title for the remaining land would be created for market disposal and sequential redevelopment consistent with this Structure Plan (notwithstanding the potential for future modifications via Structure Plan amendment process).

4. Subdivision and Development Requirements

4.1 Land Use and Permissibility

The Structure Plan Map outlines the Zones and Reserves applicable within the Structure Plan Area and these will guide future subdivision and development of the land.

Land use permissibility within the Structure Plan Area shall generally be in accordance with the corresponding Zone under the City of Karratha Town Planning Scheme No. 8 (TPS 8).

The zones in the Structure Plan will not have statutory effect as it is currently not included in TPS 8.

Pursuant to Clause 27 of Schedule 2 – Deemed Provisions for Local Planning Schemes under the *Planning and Development (Local Planning Schemes) Regulations 2015*:

a) A decision-maker for an application for development approval or subdivision approval in an area that is covered by a structure plan that has been adopted by the Commission is to have **due regard** to, but is not bound by, the structure plan when deciding the application.

4.2 Residential Density

Residential densities applicable to the Structure Plan Area shall be those residential densities shown on the Structure Plan Map.

4.3 Contamination Investigations

A Preliminary Site Investigation (PSI) is required to be provided as part of Structure Plan and Subdivision Approval. Where further Detailed Site Investigation (DSI) is deemed to be warranted as determined by Department of Water and Environmental Regulations (DWER), the recommendations and implementation of the DSI is required to be undertaken to the satisfaction of Western Australian Planning Commission, upon considering advice provided by DWER, prior to commencement of any subdivision and/or development.

4.4 Water Management Strategy (Including Storm Surge and Flood Risk)

(a) Future subdivision and/or development proposals are to address storm surge in accordance with State Planning Policy 2.6 – State Coastal Planning (SPP 2.6) and Local Planning Policy DP19 – Storm Surge Risk Policy.

(b) An Urban Water Management Strategy (UWMS) to be prepared that includes:

- The recommendations of the Local Water Management Strategy (LWMS) and the Department of Water and Environmental Regulation (DWER);
- Detailed consideration of potential impacts of flooding and storm surge; and
- Capacity of the existing drainage network to accommodate stormwater from the site.

4.4 Movement Network

(a) Applications for subdivision shall include, a Traffic Impact Assessment (TIA) to be prepared consistent with Volume 3 – Subdivision of the TIA Guidelines, bringing together relevant technical standards and policies in order to consistently and comprehensively assess the level of impact development will have on the transport network, whilst keeping in line with state planning policies and practices.

(b) The ultimate road network and configuration is to generally accord with the Structure Plan map. Final detailed design of intersections and roads including road hierarchy and classification shall be determined at the subdivision stage to the satisfaction of all relevant authorities and based on current traffic assessment.

(c) A Traffic Management Plan is also to be prepared at subdivision stage.

(d) The proposed north-south central distributor and resulting intersections with Turner Way and Bayview Road may require adjustments to the alignment that is shown on the Structure Plan to be to the satisfaction of the City of Karratha.

(e) Future investigations may be necessary to determine the demand and suitability of the existing internal road and associated parking on the northern extremity of the Karratha Primary School to provide for potential future link to the east (Hunt Way) and connection to the proposed north-south central link through the site.

(f) A minimum area of verge/open space be provided immediately south of the proposed northern boundary of the primary school site. The appropriate width is to be considered at subdivision stage and to be included within the lot to be created for the primary school or as otherwise considered appropriate by the City of Karratha and the Western Australian Planning Commission (WAPC).

(g) Pedestrian and cycle path linkages are to be undertaken to connect the site to the existing network to the east and west of the site to the satisfaction of the City of Karratha. Should this require land from the site to be included in existing or newly created land parcels, being road or drainage reserves, this is to be undertaken at the subdivision stage.

4.5 Public Purpose and Utility

The final dimensions and area required for the 'Public Purpose – Utility' shown on the Structure Plan shall be determined at subdivision or development approval stage in consultation with the utility service provider, to the satisfaction of the Western Australian Planning Commission or City of Karratha respectively.

4.6 Public Open Space

In determining any Public Open Space (POS) or cash in lieu contribution for subdivision and/or development within the Structure Plan for residential use, the following shall apply:

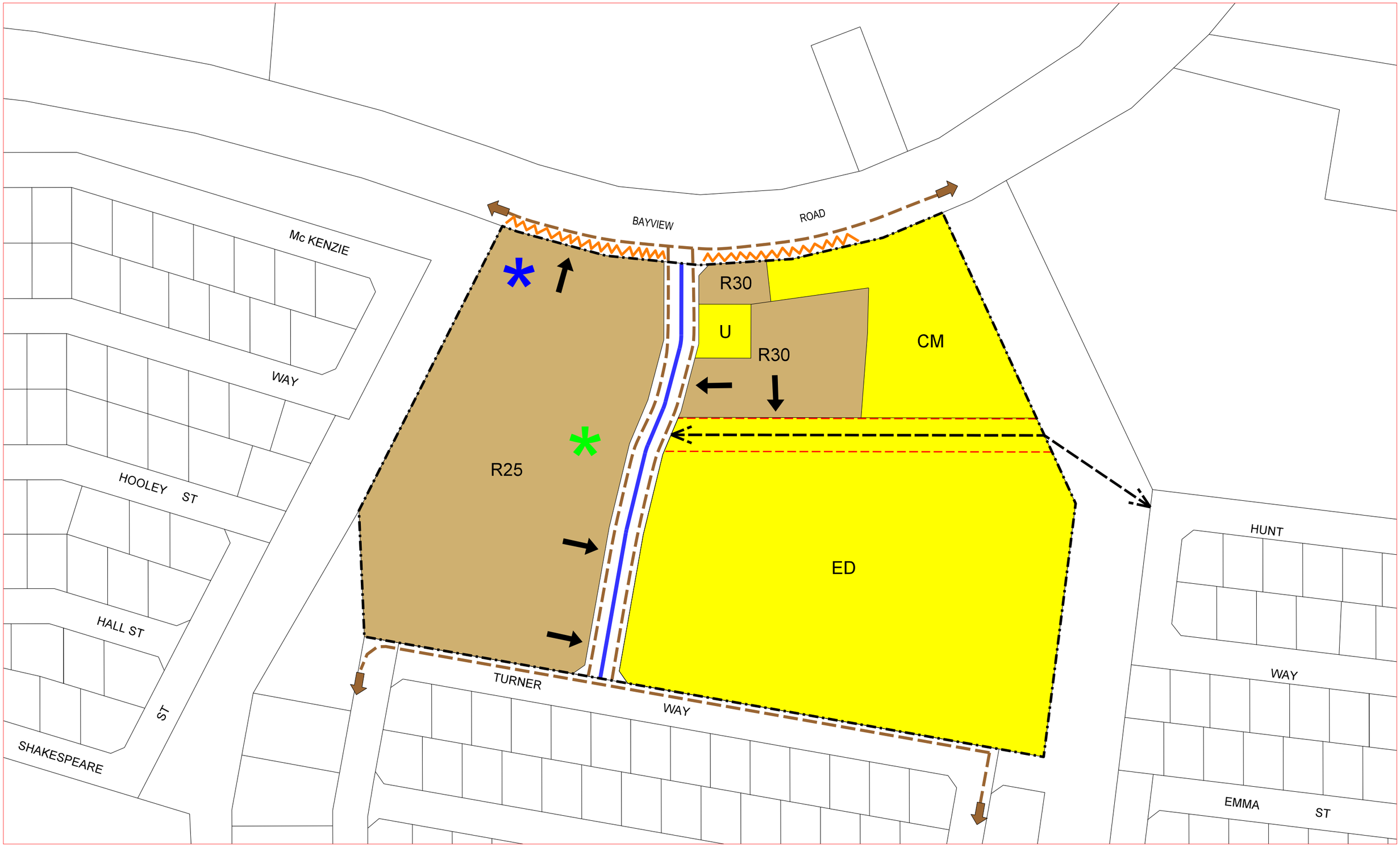
a) As part of any subdivision approval for residential land within the Structure Plan (excluding land subdivided to create the primary school and family centre), provision of public open space shall be satisfied by either providing a minimum

of 10% of land for public open space, or by a cash in lieu contribution to the satisfaction of the Western Australian Planning Commission.

b) As part of any development approval of land within the Structure Plan, provision of public open space shall be satisfied by either providing a minimum of 10% of land for public open space, or by a cash in lieu contribution to the satisfaction of the City of Karratha. This applies should the situation arise whereby the entire residential zoned component of the structure plan is approved under a single Development Application prior to subdivision of this land.

4.7 Local Development Plans

Local Development Plans are prepared and endorsed at the subdivision stage. These development plans are to include details pertaining to interface between varying land uses (streetscapes), retaining walls, setbacks, stormwater management and any other design element that is considered relevant to future proposed subdivision layouts.



Plan No. : 20404-5
Revision : REV.3
Scale :1:2000@A3

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Level 10, 3 Hasler Road Osborne Park WA 6017 www.veris.com.au

LEGEND

ZONES

- Residential
- ED — Public Purposes - Education
- CM — Public Purposes - Community
- U — Public Purposes - Utility

OTHER

- Structure Plan Boundary
- Neighbourhood Connector 'B'
- Pathways
- No vehiclar access
- Possible future east - west link
- Dwelling orientation (where practical)
- Provision of public open space to be determined at subdivision/development approval stage
- Future subdivision/development to address 100yr flood risk

STRUCTURE PLAN
LOT 4615 TURNER WAY
BULGARRA (KARRATHA)

DATE DRAWN: 21/02/2017
DRAWN BY: CdeL
CHECKED BY: JP

FILE: 181204 StructurePlan 20404-5.dgn
V DATUM: AHD
H DATUM: MGA94 (50)

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PART TWO – EXPLANATORY SECTION

1. Introduction

This report presents a proposal for a Structure Plan for Lot 4615 (Crown Reserve 30602) Turner Way, Bulgarra, which is zoned 'Urban Development' zone under the City of Karratha Town Planning Scheme No. 8 (TPS 8).

The Structure Plan has been prepared pursuant to *Planning and Development (Local Planning Schemes) Regulations 2015* Schedule 2 - Deemed provisions for local planning schemes Part 4 'Structure Plans'.

The report provides a description of the subject site, details of the proposal and planning rationale for the Structure Plan including indicative staging of development.

1.1. Location

Lot 4615 (Crown Reserve 30602) Turner Way, Bulgarra ("the subject site") is approximately 1.5km east of Karratha town centre. **Figure 1** shows the location of the subject land in relation to the town of Karratha. **Figure 2** shows the cadastral boundaries and early 2016 aerial image of the subject site, when the Karratha High School buildings and infrastructure were present. The subject site Certificate of Title is contained in **Appendix 1**.

1.2. Existing Use

Lot 4615 is set aside as Crown Reserve 30602 with a Management Order issued to the Minister for Education for use as 'Education' with power to lease, hence the separately developed and operated community centre. The former Karratha High School was formerly located in the western portion of the subject site, with school buildings in the south-west and the playing field in the north-west. In late 2016 the Karratha High School buildings and infrastructure were demolished and removed from the subject site.

Karratha Primary School is situated within the south-east portion of the site and has recently been upgraded. Access to the primary school is via Turner Way to the south and via internal access road connecting to Bayview Road to the north. The Primary School will continue to remain on the subject site and is planned to be retained in Reserve 30602.

Within the north-western portion of the subject site is a community family centre, which has recently undergone refurbishment including additional landscaping and parking upgrades. The centre will continue to remain on the subject site and is planned to be excised from Reserve 30602 as a separate lot with frontage to Bayview Road.

There is an existing Horizon Power substation adjacent to the internal (undedicated) school road off Bayview Road in the northern central portion of the subject site. The future of the substation would be determined as part of redevelopment of the surplus land area as shown in **Figure 4**.

1.3. Description & Land Ownership

The area of the subject site is approximately 9.44 hectares. Details of the land and ownership are as follows:

Lot Number	Land details		Registered Proprietor
4615 Reserve 30602	Certificate of Title	LR3110/961	Crown Land - State of Western Australia Management Order issued to Minister for Education with power to lease
	Plan/Diagram	Deposited Plan 193623	
	Lot Area	9.44ha	

1.4. Surrounding Land Uses

The subject site is bound on the western and eastern sides by 'Parks, Recreation and Drainage' reservation corridors (approximately 40m wide). 'Residential' zoned land is the predominant surrounding land use, with an R-Code density of R20.

Surrounding established residential development is predominantly detached single dwellings on 650m^2 – 750m^2 lots orientated north-south. Immediately to the north on the opposite side of Bayview Road is mostly undeveloped reserved land for 'Parks, Recreation and Drainage' and 'Conservation Recreation and Natural Landscapes', except for a Water Corporation wastewater pumping station and utility site opposite the community family centre.

Further north is an existing short and long-stay accommodation (Searipple Village) development. **Figure 3** provides an overview of the surrounding context.

2. Site Description

2.1. Topography & Landform

TOPOGRAPHY

The subject site is relatively flat, with gentle undulations throughout. In general, levels range between 7.0m AHD to 8.0m AHD across the site, with the highest point approximately 9.0m AHD in the south and the lowest point approximately 5.5m AHD adjacent to Bayview Road in the north-west. There are no significant topographical constraints impacting urban development of the subject site.

SOILS

A desktop review of soil type based on Dampier sheet of the 1:250,000 scale Environmental Geology series mapping indicates the predominant soil type found on the subject site is:

"Quaternary Qwb :Sand, silt and clay in distal outwash fans, with gilgai surface in areas of expansive clay".

In consideration of the former high school use of the site and existing development, the desktop review indicates that there are no soil type constraints to urban development. Further geotechnical investigations would occur at later stages of planning. Discussion will be made further on in this report regarding the potential of site contamination relating to asbestos from school building materials.

2.2. Vegetation and Flora

The subject site does not contain any significant environmental assets or values. The site has previously been completely cleared as part of the former Karratha High School and current education and community uses. Vegetation condition has been assessed to the following criteria (Keighery, 1993):

Classification	Vegetation Condition
Pristine	Pristine or nearly so, no obvious signs of disturbance
Excellent	Vegetation structure intact, disturbance affecting individual species and weds are non-aggressive species
Very Good	Vegetation structure altered, obvious signs of disturbance
Good	Vegetation structure significantly altered by very obvious signs of multiple disturbance. Retains basic vegetation structure or ability to regenerate to it
Degraded	Basic vegetation structure severely impacted by disturbance. Scope for regeneration but not to a state approaching good condition without intensive management
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 being 'parkland cleared' with the flora comprising weed or crop species with isolated native trees or shrubs

Keighery, B (1994) *Bushland Plant Survey, Guide to Community Survey for Community*

In classifying the existing vegetation condition using Keighery (1993), the vegetation within the subject site is classified as being 'Completely Degraded'. Virtually all original understorey has been cleared with scattered native and exotic trees. No rehabilitation of vegetation has been undertaken as part of remediation of the site post demolition and removal of the high school buildings and infrastructure. There are no significant flora, vegetation or fauna environmental constraints limiting urban redevelopment.

2.3. Hydrology

GROUNDWATER

No historical groundwater data for the site exists. Due to proximity to the coast groundwater is expected to generally be highly saline to brackish and groundwater would typically flow towards the ocean. The groundwater levels will need to be confirmed via geotechnical investigations and/or monitoring bores as part of further subdivision and development of the site. This would be considered as part of an **Urban Water Management Strategy** for future redevelopment proposals. Provision of adequate clearance to groundwater from future urban development would be a consideration during later stages of planning. It is considered that there is capacity for future development on the site to achieve sufficient separation from groundwater in the context of historic use of the site and surrounding development.

SURFACE WATER

There are no surface water assets within the subject site. Sheet drainage generally occurs from south towards Bayview Road, with infiltration generally at source due to filtration of the relatively sandy soils. The subject site is not significantly impacted by surface water features.

2.4. Acid Sulfate Soils

A desk top review indicates that generally the site has a low risk of Acid Sulfate Soils and the present and historical development of the site confirms this is not a significant constrain to urban development of the site. Notwithstanding, further geotechnical investigations would be undertaken at later stages of planning as part of subdivision and development approval.

2.5. Site Contamination

Memorial L103950 has been registered on the Crown Land Title (Appendix 1) with the site being identified as *Site No. 21826* '*possibly contaminated – investigation required*' in Department of Water and Environmental Regulation (DWER) contaminated sites database. The site is suspected to contain contamination based on a previous geotechnical study which found a piece of asbestos cement material in uncontrolled fill, approximately 1 metre below ground level near the northern boundary of the primary school. **Plan 6** shows the approximate location of the possible contaminated uncontrolled fill. DWER has determined that further soil investigations are required to determine the nature and extent of the uncontrolled fill. Subsequently the need for this Preliminary Site Investigation (PSI) is included in the Part One section of the Structure Plan and needs to be addressed at later stages of planning.

In addition, the site was formerly used as the Karratha High School, of which the building contained asbestos material. With the relocation of the high school, the school buildings and infrastructure have been subsequently demolished and removed, including removal of asbestos materials.

Accordingly the surplus land within the subject site can be sequentially redeveloped for urban use. A PSI can be undertaken at the subdivision and/or development approval stage to confirm there are no residual asbestos within the soil where the high school infrastructure was formerly located.

2.6. Servicing

A Preliminary Engineering Servicing Report (**Appendix 2**) has been prepared which indicates that the site is suitable and viable for urban development and can readily be connected to the necessary services. Subdivision and/or development for urban use would be subject to consultation with service providers and the necessary upgrades to existing infrastructure to support development.

WATER AND SEWER SERVICES

There are 150mm water mains within the road reserves of Bayview Road, McKenzie Way and Turner Way. Water Corporation advises that connections into these mains will service future urban development of the surplus land within the site with reticulated water supply.

An existing deep gravity reticulated sewer is located within the northern side of Bayview Road reserve, which discharges into a pump station opposite the north-east corner of the site. There is also a 430mm sewer pressure main on the western boundary of the site. Water Corporation advises that the site can potentially be readily serviced by reticulated gravity sewer.

POWER & GAS

There are high and low voltage overhead cables on the western boundary of the site and in Turner Way. Underground power is also available via mains in Bayview Road. Horizon Power advises that the subject site can be adequately serviced by reticulated power. The existing Horizon Power substation, currently located within the site, would require further investigation as part of redevelopment of the surplus land, to determine its retention, relocation or otherwise. There is no reticulated gas within Karratha.

TELECOMMUNICATIONS

Telecommunications can be made available to the site via extension of existing infrastructure in consultation with Telstra. There is existing telecommunications infrastructure in Bayview Road and Turner Way.

2.7. Access

The site has direct frontage and is readily accessible via Bayview Road and Turner Way, both of which are bitumen sealed roads. Future planning for road connections with the proposed internal Neighbourhood Connector ‘B’ road, as shown on the Structure Plan map, will be discussed in further detail in this report.

2.8. Flooding

The subject site is not directly impacted by flooding of any natural surface water features. However, Karratha is affected by major flood events typically associated with storm surge and tropical cyclones which may impact the subject site.

COASTAL HAZARD ASSESSMENT

The *Karratha Coastal Vulnerability Study (August 2012)* assessed the potential impacts of future climate change, assessment of shoreline stability and modelled flooding scenarios from storm surge and riverine flooding. The study indicated that the shoreline location is predicted to change as a result of sea level rise and climate change.

The subject site is within the eastern portion of Karratha townsite, which the Study found will not be as susceptible to coastal erosion and shoreline retreat as the western portion of Karratha townsite. This is because the eastern portion has a narrow fringe of mangroves fronting a thin section of low lying sandy foreshore and backed by rocky hinterland. The mangroves will be destabilised due to rising sea levels, however the rock structure will provide a significant constraint to potential shoreline movement. The Study projected shoreline location, impacted by the 100 year to 500 year storm surge events, will not impact the subject site, nor will the site be affected by the '*limit of marine influence*'.

The Study 2110 flood mapping shows some areas of the northern portion of the site being affected by 100 year ARI flood event and 500 year ARI flood event. The 100 Year ARI flood event scenarios are shown in **Figure 5 - Figure 8**. The 500 year ARI flood event is shown in **Figure 9**.

For large scale urban infill development (such as for the subject site), it is recommended that general fill levels be determined based on acceptable risk level design criteria. As a minimum, finished floor levels would need to be 0.5 metres above the required design water level, providing a suitable 'free-board' for development. It is likely that some filling (in the order of up to 1.5m) within the northern portion of the subject site will be required to accommodate future urban development, but this will primarily be required to service lots, rather than to achieve the necessary flood level clearance. Retaining walls are likely to be required to account for final finished filling and lot levels across the site, with all proposed residential lots having a finished floor level 500mm above the 100 year flood level. This will be further discussed in this report under 'Earthworks'.

2.9. Indigenous and European Heritage

A search of the Department of Indigenous Affairs 'Aboriginal Heritage Inquiry System' indicates that no Indigenous Heritage sites exist on the land. There are no outstanding Native Title claims affecting the subject site. There are no places or sites of cultural significance within the subject site under the City of Karratha Municipal Heritage Inventory and State Heritage Register.

2.10. Bushfire Management

A desktop review indicates that the subject site is not impact by bushfire hazard risk. The site is not affected by the Department of Fire and Emergency Services bushfire prone mapping. The drainage reserves on the western and eastern boundaries of the subject site are not considered significant bushfire hazard risk and contain low fuel vegetation (i.e. predominantly scattered groundcover scrub/grass) within a swale. Future urban development of the surplus land is not considered to be impacted by threat of significant bushfire hazard risk.

3. Key Planning Framework

REGIONAL & SUB-REGIONAL PLANNING

3.1. State Planning Policy 2.6 'State Coastal Planning'

SPP 2.6 provides guidance in decision making in relation to development in proximity to the coast and/or which is impacted by coastal processes and the provision of adequate coastal planning infrastructure and mitigation measures to reduce coastal hazards.

As detailed in this report, the subject land is potentially impacted by flooding as a result of predicted sea level rise (100 year and 500 year). However, this does not preclude development from occurring but that development needs to provide appropriate mitigation to address SPP 2.6. The finished levels of development would be considered as part of later stages of planning once a detailed subdivision design (and/or form of development) is proposed.

3.2. State Planning Policy 3.4 'Natural Hazards and Disasters'

SPP 3.4 provides guidance in decision making in relation to natural hazards and disasters, including severe storms, flooding, storm surges and coastal processes which have the potential to impact the subject site. As the townsite of Karratha is subjected to cyclonic activity, storms and storm surge and given its topographical characteristics, planning consideration needs to be given to address SPP 3.4. In this instance, there is general overlap with the requirements in SPP 2.6 as it relates to the subject site.

LOCAL PLANNING

3.3. City of Karratha Town Planning Scheme No. 8

Lot 4615 (Reserve 30602) Turner Way, Bulgarra is currently zoned as 'Urban Development' under TPS 8. The provisions of TPS 8 require a Development Plan (or Structure Plan) to be prepared and approved pursuant to *Planning and Development (Local Planning Schemes) Regulations 2015* Schedule 2 - Deemed provisions for local planning schemes Part 4 'Structure Plans'. Future subdivision and/or development also needs to consider Clause 7.4 and Clause 7.5 in relation to planning of development that addresses flooding and storm surge.

3.4. City of Karratha Local Planning Strategy

The City of Karratha Local Planning Strategy identifies the future growth options for Karratha townsite. However, the Strategy does not specifically identify the future redevelopment land use options for the subject site. Notwithstanding, the proposed structure plan is consistent with the Strategy in terms of the site being deemed as an urban infill site, in addition to the continued use of the site for education (primary school) and community (family centre).

3.5. Karratha Revitalisation Strategy

The *Karratha Revitalisation Strategy* provides a guide for the future growth and development opportunities for Karratha townsite.

The Strategy identifies the subject site as relatively unconstrained for future redevelopment, with retention of the existing primary school. The Structure Plan is generally based on the conceptual redevelopment scenario for the subject site contained in the Strategy.

4. Structure Plan

4.1. Land uses

The Structure Plan Map outlines the Zones and Reserves applicable within the Structure Plan Area which will guide future subdivision and development of the land.

Land use permissibility within the Structure Plan Area shall generally be in accordance with the corresponding Zone under the City of Karratha Town Planning Scheme No. 8 (TPS 8). The zones in the Structure Plan will not have statutory effect as it is currently not included in TPS 8.

Pursuant to Clause 27 of Schedule 2 – Deemed Provisions for Local Planning Schemes under the *Planning and Development (Local Planning Schemes) Regulations 2015, a* decision-maker for an application for development approval or subdivision approval in an area that is covered by a structure plan that has been adopted by the Commission is to have **due regard** to, but is not bound by, the structure plan when deciding the application. The zones and reservations in the Structure Plan have no statutory weight, being limited by the above.

4.2. Retention of Existing Primary School & Community Centre

A Subdivision Concept Plan (SCP) (**Plan 2**) has been prepared as an indicative development option for the surplus land (as referred to in Figure 4), primarily as a reference to identify one possible development scenario. The SCP is based on key parameters and essential planning outcomes, which will influence the future redevelopment of the site and which will also define the proposed surplus land area for redevelopment.

The key planning parameters and outcomes include:

a) Retention of the existing Primary School for its continued use;

b) Provision of a suitable curtilage around the primary school to enable the school to continue its operations. For instance, northern carpark is retained as well as necessary land requirements west of primary school for school bus pick-up/drop-off and access.

   In this regard a Crown Subdivision will be undertaken to excise the primary school from the redevelopment site (surplus land) for retention as balance Crown Reserve. The exact boundary for the primary school will be determined via feature survey and detailed subdivision design (i.e. Stage 1a of the Structure Plan staging implementation refer to Clause 3(i) of Part One section);

c) Retention of the existing community (family centre) in north-east portion of subject site. A Crown Subdivision will create a separate lot for the family centre (i.e. Stage 1b of the Structure Plan staging implementation refer to Clause 3(ii) of Part One section). An indicative subdivision concept plan for the family centre new lot is shown in **Plan 3.** The shape and area of the family centre lot has been determined based on the land area requirements of the primary school and family centre and necessary carparking for each land use**;** and

d) Provision of a new road connection between Bayview Road and Turner Way to provide the primary school (and redevelopment site) with frontage to a public street for improved access and permeability. This road is essential for the primary school operations as the school bus and access to the northern carpark relies on the current internal accessway.

The balance area for redevelopment (being surplus land in Figure 4) is generally identified in the Structure Plan for 'Residential' zone. The final area will be determined once the necessary Crown Subdivision has been completed to create the primary school and community (family centre) sites.

Once the primary school site and community site have been created, these land uses can be *normalised* via Amendment to the Town Planning Scheme No. 8, with the 'surplus land' remaining as 'Urban Development' zone.

STRUCTURE PLAN FLEXIBILITY

The Structure Plan intentionally does not show the local access roads as provided for in the SCP scenario. The aim of the Structure Plan is to delineate the current land uses that are to continue to operate, namely the primary school and community (family centre), whilst providing the framework to ensure planning considers the need for provision of a neighbourhood connector road between Bayview Road and Turner Way. The neighbourhood connector road is critically important for the continuing operations of the primary school.

The Structure Plan therefore provides a broad and flexible 'Residential' zone area over the surplus land which, once title has been created, will be offered on the market for disposal. An R25 base coding and R30 area has been identified to provide flexibility for a mix of housing typologies (as per SCP scenario).

Planning for local access roads within the R25 (and R30 area as necessary) would be subject to further consideration by a prospective purchaser. Where considered necessary, an application for Amendment to the Structure Plan can be made in line with a particular development proposal, to modify the Structure Plan to accommodate the desired development.

4.3. Residential Densities and Yield

The SCP (Plan 2) provides one option for the urban redevelopment of the surplus land with density coding of R25 on western side of the internal neighbourhood connector road and R30 on eastern side of the road. The SCP indicatively shows 47 residential lots that could accommodate single dwellings within the R25 area. The proposed R25 density provides opportunity for a mix of single dwellings on lot sizes ranging 398m^2 – 639m^2.

Under an R30 density (within two strata parent lots) up to 22 grouped dwellings could be accommodated within the R30 area. Typically R30 lots would be strata grouped dwellings serviced by common property with lot sizes averaging 300m^2.

The SCP scenario if fully developed (totally 69 dwellings) would equate to 16 dwellings per site hectare and could accommodate up to approximately 193 people, based on an average household of 2.8 persons. The 'Utility' lot shown in the SCP would require further investigation as to its required curtilage and buffer from residential lots, if it were to be retained. This would be determined as part of detailed subdivision at later stages of planning.

4.4. Lot Orientation

The SCP shows the preferred orientation of lots (which is also shown on the Structure Plan map) as follows:

Preferred Orientation	Rationale
Bayview Road and Turner Way	Passive surveillance of public street and streetscape amenity (i.e. no solid walls) consistent with McKenzie Way (slip road) and lots in Turner Way.
Primary School	Passive surveillance of primary school and streetscape amenity for neighbourhood connector road (i.e. no secondary street boundary fencing). For R30 development neighbouring to the north, wherever possible lots to orientate towards the school or preferably as a minimum, address the school with major openings and/or visually permeable fencing.
Drainage Reserve	No lots to front drainage reserve neighbouring to the west due to low amenity and preferred passive surveillance of local access roads. This is consistent with established residential lots on western side of drainage reserve.
Neighbourhood Connector Road	Grouped housing sites to have direct access from this road with lots, wherever possible, fronting the road.
Community (Family Centre)	R30 lots are not required to orientate to address the family centre site as preference would be for grouped housing to orientate internally to create a strata community 'sense of place'. A Local Development Plan may be required for R30 development as a condition of subdivision approval.

4.5. Proposed Movement Network

EXISTING ROADS

Bayview Road will be the main access to the site. Currently there is a full movement intersection with the internal school access road and Bayview Road. The proposed Neighbourhood Connector 'B' road intersection is shown at the same location as this current access point. This intersection will also provide formal access for the redevelopment site. No upgrading of Bayview Road is considered necessary for the redevelopment as shown in the SCP. Further consideration of any necessary upgrading (and/or widening) of Bayview Road can be undertaken once a more formal detailed and specific development proposal for the surplus land is known.

The current internal access road from Bayview Road generally terminates at the southern carpark of the primary school. However the southern carpark has a secondary access/egress point onto Turner Way. The proposed Neighbourhood Connector 'B' road proposes to rationalise the connection points of the site between Bayview Road and Turner Way.

Turner Road is a local access road to the south and will be the secondary access point to the development. No road widening or upgrading is required for Turner Way and there is already existing on-street parking embayments provided on the northern side of the road in association with the primary school and former high school.

Both Turner Way and Bayview Roads are anticipated to be able to accommodate the forecast traffic volume generated by the Structure Plan land uses. Further consideration of traffic impacts can be undertaken once a specific development application for the surplus land is formally lodged.

PROPOSED ROADS

The width of the proposed internal Neighbourhood Connector 'B' road is shown on the SCP as 20m road reserve. Liveable Neighbourhoods encourages primary schools to be located on one or more neighbourhood connector road/s. The 20m road reserve width will provide sufficient area of on-street parking, bus embayment and pathways on either side of the road. The exact road reserve width would be determined at subdivision stage and could be reduced to 19.4m consistent with Liveable Neighbourhoods recommended cross sectional width for Neighbourhood Connector 'B' road.

No intersection treatments are planned for the Neighbourhood Connector road connections with Bayview Road and Turner Way. This is due to the relatively low volumes of traffic on either of these roads. The connection point of the neighbourhood connector road with Turner Way, as shown on the SCP, aims to minimise the impact to existing lots by locating the road opposite dividing lot side boundaries.

The primary school will have frontage to Turner Way and the proposed neighbourhood connector road. The existing family centre will continue to have direct access to Bayview Road.

Local access roads (typically 15m wide road reserve) and laneways (6m wide) for waste services and vehicle circulation, as shown on the SCP scenario, are not identified on the Structure Plan as these can potentially change, subject to a formal development proposal being prepared by a prospective purchaser.

PATHWAYS

Vehicle speeds on local access roads and the neighbourhood connector road will be limited through detailed road design measures including reduced pavement width appropriate to traffic volume and slow points/signage (school zone 40km/hr) at either end of the neighbourhood connector road.

Pathways would be provided for within proposed local access roads and the neighbourhood connector road. The Structure Plan shows the location for proposed paths linking with the surrounding pathway network. The SCP shows indicative pathways within local access roads for the SCP scenario.

The exact location of pathways will be determined in liaison with the City at the subdivision stage once a more specific form of development for the surplus land is known. In general, pathways are proposed to be provided on all streets in accordance with the requirements of Liveable Neighbourhoods.

4.6. Public Open Space

At this stage no public open space is proposed in the Structure Plan as the subject site is within 400m of a substantial district recreation and sporting ground to the east (Bulgarra Oval and Recreational Centre). The recreational facilities includes playgrounds, active open space, hard courts and recreational centre (including squash courts) and incidental facilities.

Although not formally included as public open space, the existing primary school oval is also available (after hours) to the public for recreation.

The City's adjacent open drainage reserve (and surrounding extensive open drainage network) also provides for a multiple use function (drainage and recreation) which contain numerous tracks and pathways available for the public to walk and cycle. The drainage reserves which are generally wide open swales, do not contain permanent water and for the most time are dry and sparsely vegetated.

The 10% POS requirement for the Structure Plan surplus land proposed for future urban development is 0.424 hectares as shown in Table 1. Rather than create a separate park within the Structure Plan area, which will require water supply for irrigation and on-going maintenance, another option is to utilise the required 10% POS as cash in lieu for capital improvements on existing public open space infrastructure in the area.

Alternatively, the Structure Plan does not preclude a developer providing public open space in consultation with the City at later stages of planning.

Table 1. Public Open Space Schedule

Calculation of Required POS Provision		
Lot 4615 **Total Site Area (ha)**	9.44	9.44
Deductions Utility (substation) site Community (Family Centre) Primary School	 0.093 0.932 4.170	
Total Deductions		5.195
Gross Subdivisible area (total area minus deductions)		4.245
Required POS (10%)		**0.424**
Breakdown of POS Provided May comprise: - minimum 80 per cent unrestricted POS - Maximum 20 per cent restricted use POS	 0.340 0.084	
Total Restricted POS Credited to a maximum of 20%		N/A
Total Unrestricted POS		N/A
Public open space provision provided as cash in lieu		**0.424**
POS Provision as Percentage of Gross Subdivisible Area		**10.0%**

Table Notes: N/A – provision of public open space as notated on Structure Plan map to be determined at subdivision/development approval stage

4.7. Water Management

A Preliminary Stormwater Assessment has been undertaken for the SCP scenario (Plan 2), which is included in Appendix 2. The stormwater assessment indicates that the majority of stormwater generated from the SCP scenario could be discharged into the existing local authority open swale drainage network neighbouring to the west. Stormwater flows would be directed towards the main drainage system via overland flow within the road reserve. In addition a Local Water Management Strategy (**Appendix 4**) has been prepared for the Structure Plan

A separate Karratha Primary School Stormwater Assessment (**Appendix 3**) has been undertaken to determine stormwater management necessary for the western portion of the primary school.

PRIMARY SCHOOL & FAMILY CENTRE

Stormwater management for the existing primary school and family centre will generally be contained on-site. Any further expansion of these existing developments will need to consider stormwater disposal for any additional stormwater generated.

The western portion of the primary school requires separate addressing of stormwater. Specifically, stormwater from school hardstand areas currently drains via existing subsurface pipes through the former high school land [surplus land] site and into the City's open drain to the west. This current method of stormwater disposal will require modification to enable disposal of the surplus land on a separate title.

Currently there are two 600mm subsurface stormwater drainage pipes that run east-west, from the north-west corner of the primary school, discharging stormwater into the City's swale drain reserve for the hardstand areas (i.e. carpark and access roads) in the western portion of the primary school. The location of the existing pipes and approximate discharge point into drainage reserve is shown in **Plan 4**. It is noted that for the balance of the primary school stormwater is contained on-site.

The Primary School Stormwater Assessment (Appendix 3) calculated that the approximate 3,100m2 of primary school hardstand area generates approximately 40m3 (1:1yr ARI event) and 95m3 (1:100yr ARI event), which is currently being discharged via the pipes into the City's drain.

If the pipes were removed, in order to contain this amount of stormwater on-site (within the primary school) a minimum land area of approximately 260m2 would be required to accommodate a 1:1yr ARI event. There is currently limited area within the western portion of the primary school which can provide for the 260m2 area necessary to accommodate stormwater infrastructure. A significantly larger area would be required to accommodate a 1:100yr ARI event, necessitating an area of approximately 1,700m2.

There are two general options to address the primary school drainage, being:

(a) Creation of a new temporary drainage basin north of primary school, which would be decommissioned and removed as part of an overall stormwater management strategy for redevelopment of the surplus land; or

(b) Status quo leaving the existing pipes which would then be decommissioned and removed as part of an overall stormwater management strategy for redevelopment of the surplus land.

In either of the above options an easement for drainage would be required over the affected area of the surplus land.

Preferred Stormwater Strategy

1 Existing drainage pipes be retained as status quo until future developer subdivides the surplus land. In this instance, the necessary primary school drainage infrastructure can be incorporated into the new development.

2 Plan 4 shows potentially the primary school drainage flow within future subdivision roads, making the existing pipes redundant.

3 Prospective Purchaser would be made aware of primary school drainage requirements. The existing drainage pipes (as status quo) would need to be protected by temporary easement in favour of primary school when land is transferred.

4 The option to set aside land and construct a temporary drainage basin north of the primary school is not a favourable option as this would be an unnecessary cost to the primary school and it is preferable to maintain the existing flow path to drain into City's open drain to the west, which is capable of accommodating 1:1yr and 1:100yr volumes.

LOCAL WATER MANAGEMENT STRATEGY

The LWMS (Appendix 4) demonstrates that urban stormwater generated by development undertaken in accordance with the Structure Plan can be adequately accommodated and addressed. In accordance with the City's *Stormwater Design Guidelines for Residential Developments*, post development flows should not exceed pre-development flows. It is possible that some compensation areas will be required, but considering the relatively small urban infill redevelopment area, the current semi-developed nature of the site and that the site is at the downstream end of the overall district drainage catchment, indications are that the City will accept stormwater to be discharged directly into the adjacent swales without compensation. Stormwater flows would be directed towards the main drainage system via overland flow within the road reserve. The stormwater discharge outlets would incorporate rock protection for the City's drains.

It is anticipated that once a formal subdivision (or development) application is lodged for the surplus land, outlining the specific form and type of proposed development, that an Urban Water Management Plan would be prepared and approved for the development, consistent with the general principles of the LWMS.

4.8. Earthworks

Preliminary investigations indicate the site currently grades from south to north with approximate fall across the site of 3.0m. Site works will be required to create level, free draining lots for dwelling construction and provision of roads and services. Level sites that are terraced reflect the ideal building site to reduce housing cost and create more affordable housing. Retaining walls will be used to provide terraced lots and absorb level differences. Wherever possible, the height of retaining walls will be kept to a minimum and may vary due to natural ground level differences. All retaining walls will be constructed to the City's satisfaction.

It is anticipated that the site will contain reactive soils, based on other sites in Karratha, however the level of reactiveness would need to be confirmed by geotechnical investigation. Given the former use of the site this is not considered to be a significant constraint to urban development.

A preliminary Earthworks Plan (**Plan 5**) has been prepared for the SCP scenario to demonstrate that the site is capable of development, that lots can be adequately serviced and that the finished level of lots can achieve the minimum clearance (0.5m above the 100 year flood levels) of forecast 2010, 2060 & 2110 flood mapping as contained in the *Karratha Coastal Vulnerability Study (August 2012)*.

The forecast flood levels on the northern side of Bayview Road for 2010, 2060 & 2110 are 5.5m AHD, 5.6m AHD and 5.8m AHD respectively for the 100 year flood mapping in the Study. Filling and retaining walls will be required for lots shown in the SCP in the northern portion of the site as shown in Plan 5. Low retaining walls (< 1.0m) will be required to account for the fall across the site.

4.9. Staging

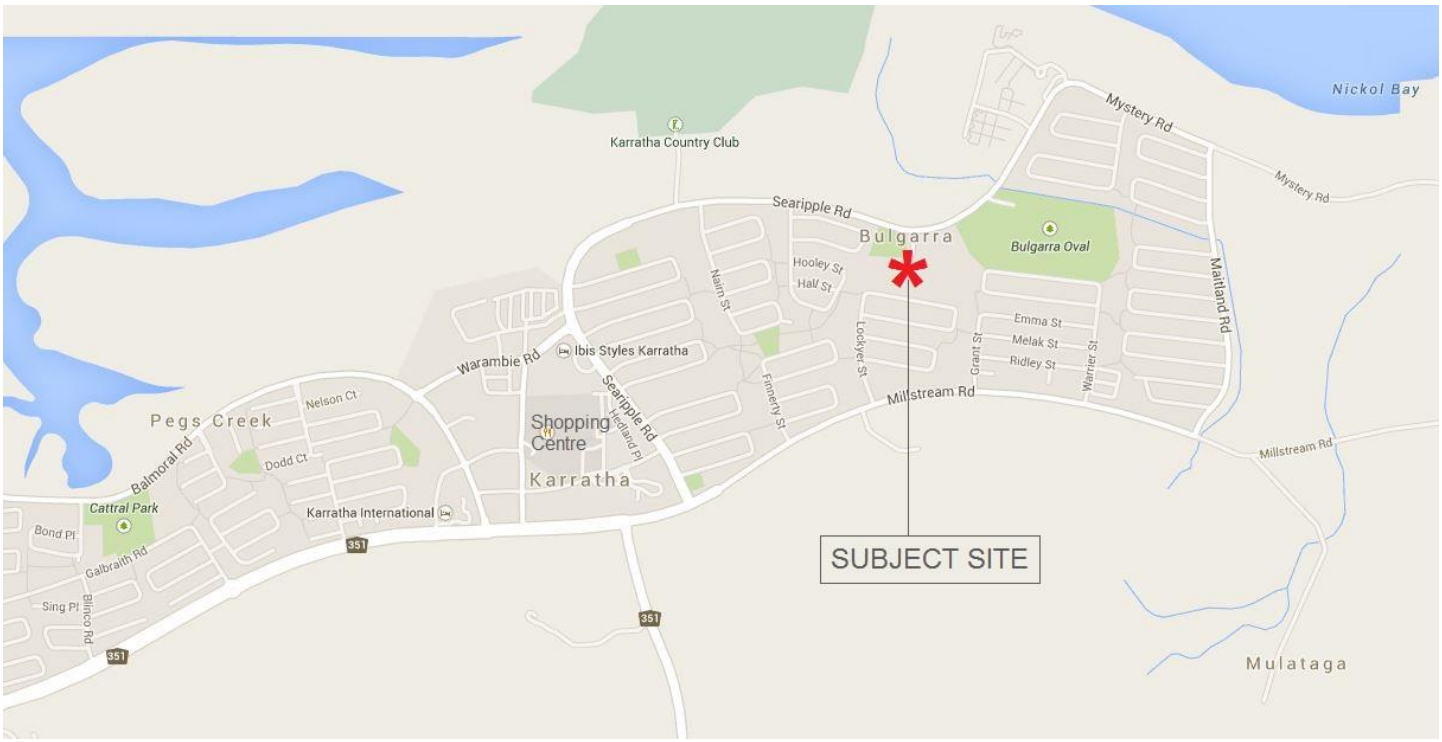
Lot 4615 (Crown Reserve 30602) is managed by Department of Education for the purpose of education (with power to lease). The Department has no intention of undertaking redevelopment of the former Karratha High School site (the surplus land). The Department of Education (in conjunction with Department of Lands) intends to create separate titles for (i) the primary school (ii) the community (family centre); and (iii) the surplus land for market disposal.

Accordingly the Structure Plan is proposed to be staged in multiple stages due to the different existing and future land uses. Staging is likely to occur as follows:

Table 2. Indicative Staging

Stage	Description
1a	Subdivision of existing primary school to create balance Crown Reserve 30602. This would likely include creation/construction of an internal access road (within the Neighbourhood Connector 'B' road reserve), which will provide access to the primary school from Bayview Road. Initially the type of internal access to Bayview Road would be a sealed two-way road with an easement in gross, until formal access is provided via a dedicated and constructed public street.
1b	Subdivision of existing community (family centre) use to provide separate lot with access and frontage to Bayview Road.
2	As part of Stages 1a & 1b a separate title for the surplus land would be created for market disposal. A Prospective Purchaser would then undertake future subdivision (and/or development) of the surplus land title for urban use either consistent with this Structure Plan, or propose any modifications via Structure Plan amendment.

Figures



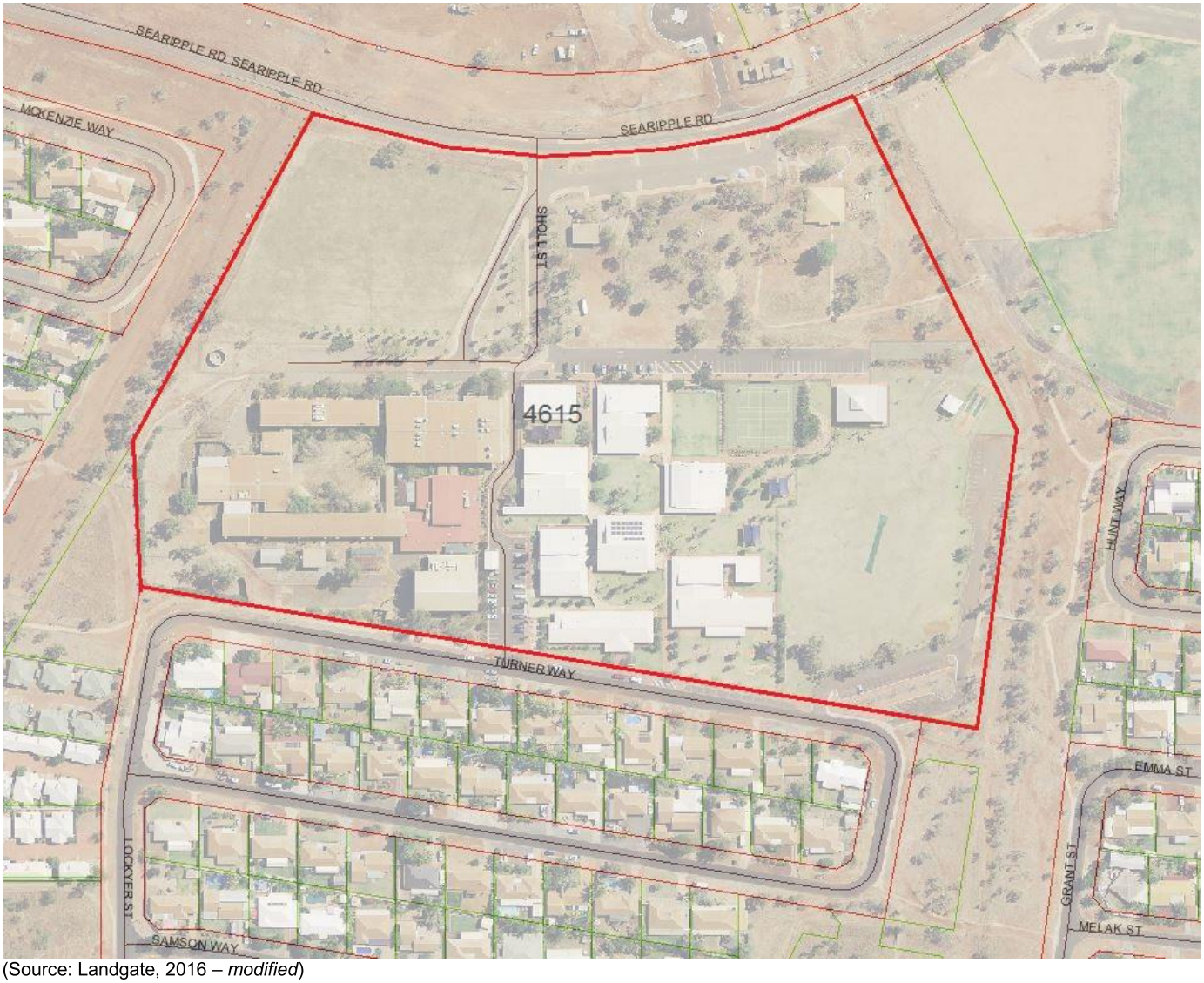
(Source: Google Maps, 2016 – *modified*)

FIGURE 1
LOCATION PLAN

Perth
Level 1, 4/40 Hasler Road
PO BOX 99
Mt Hawthorn WA 6915
Australia

T 08 9317 0600
F 08 9317 0611
mail@veris.com.au
veris.com.au

DEVELOP WITH CONFIDENCE



(Source: Landgate, 2016 – *modified*)

FIGURE 2
SUBJECT SITE

Perth
Level 1, 4/40 Hasler Road
PO BOX 99
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Australia

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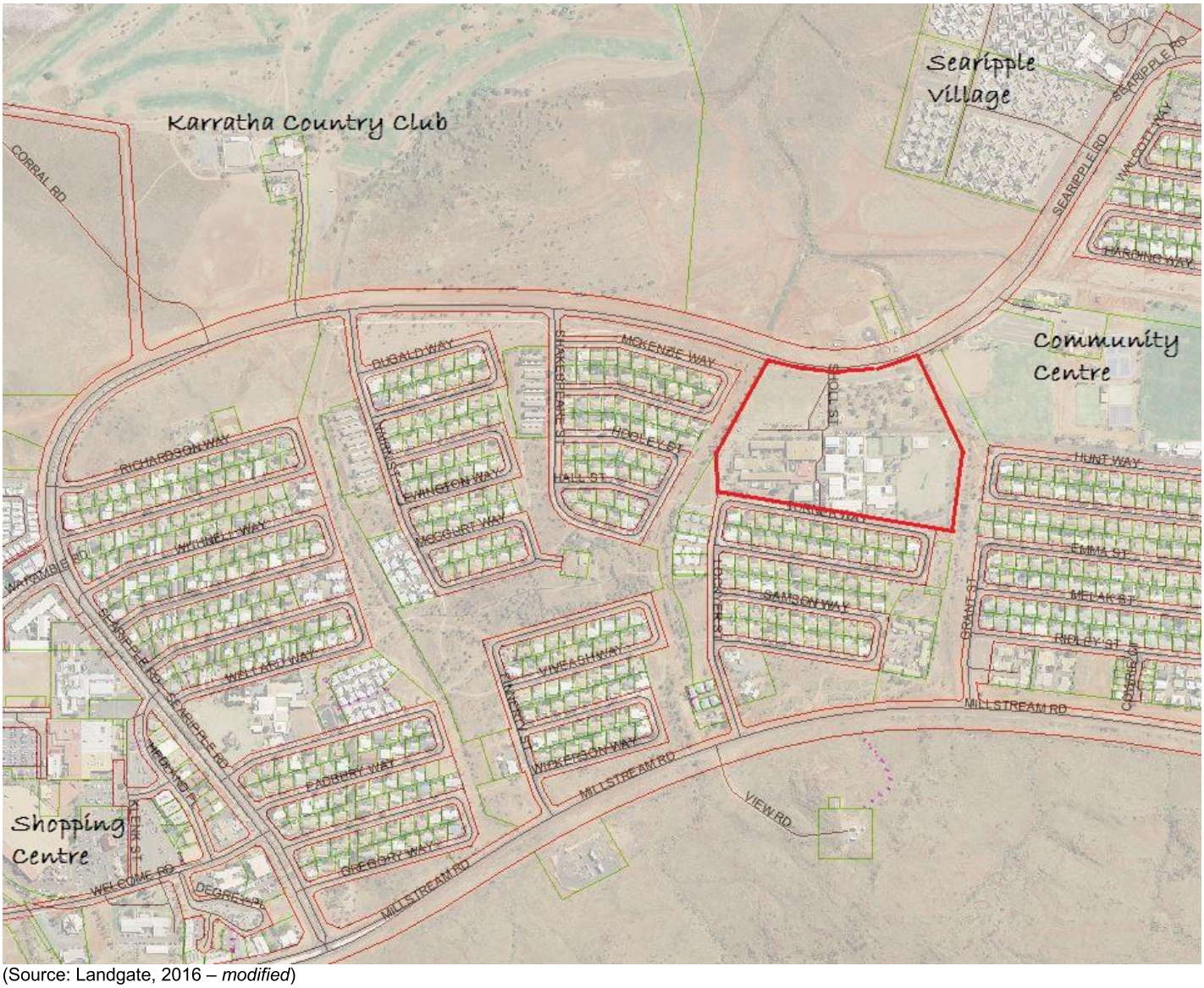

(Source: Landgate, 2016 – *modified*)

FIGURE 3
SURROUNDING CONTEXT

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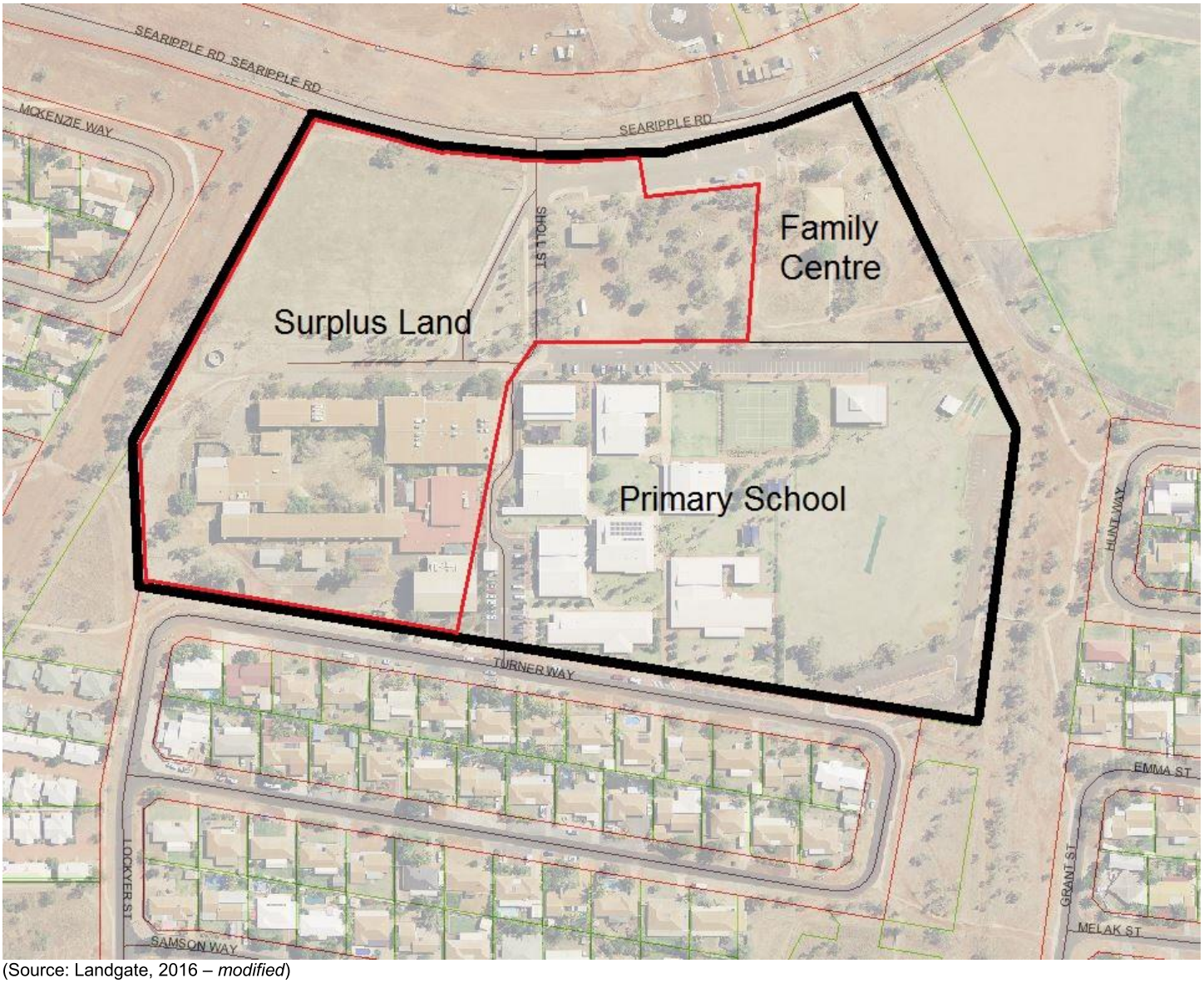

(Source: Landgate, 2016 – *modified*)

FIGURE 4
SURPLUS LAND

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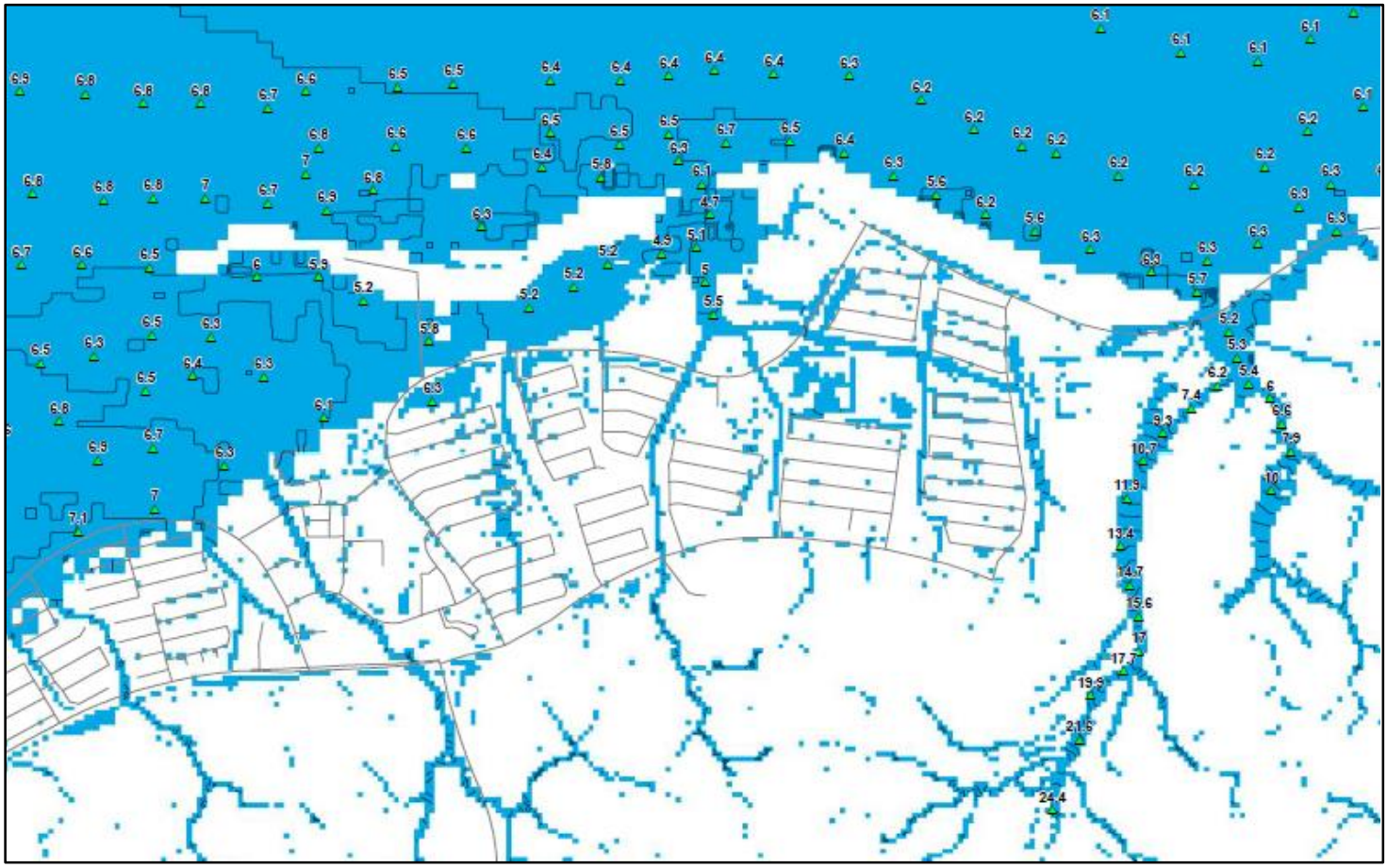

Legend

	100 Year ARI Flood Event

(Source: Karratha Coastal Vulnerability Study, JDA et al August 2012 – *modified*)

FIGURE 5

100 Year ARI Event - 2010

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Level 1, 4/40 Hasler Road
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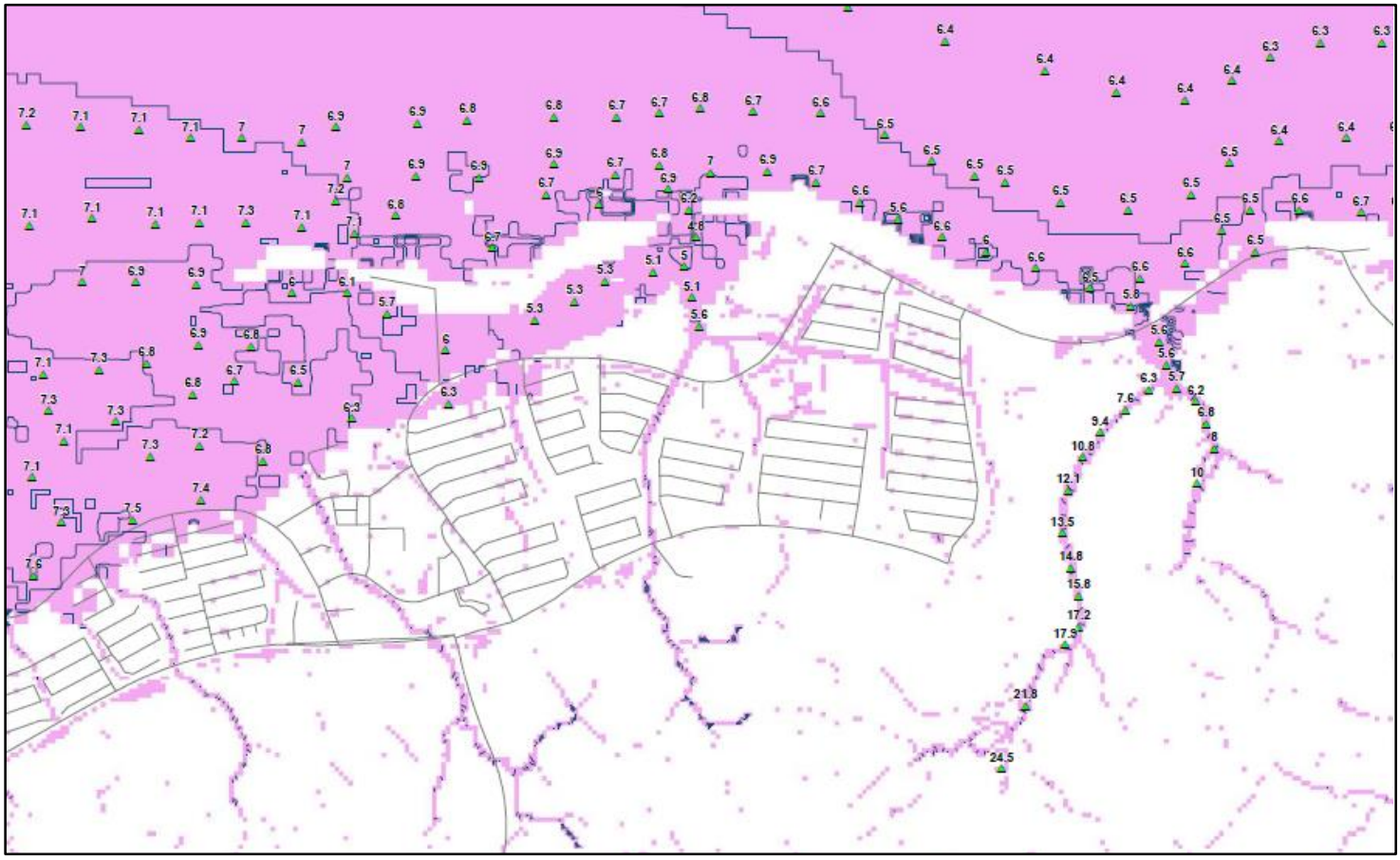

Legend

	100 Year ARI Flood Event

(Source: Karratha Coastal Vulnerability Study, JDA et al August 2012 – *modified*)

FIGURE 6
100 Year ARI Event - 2060

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Level 1, 4/40 Hasler Road
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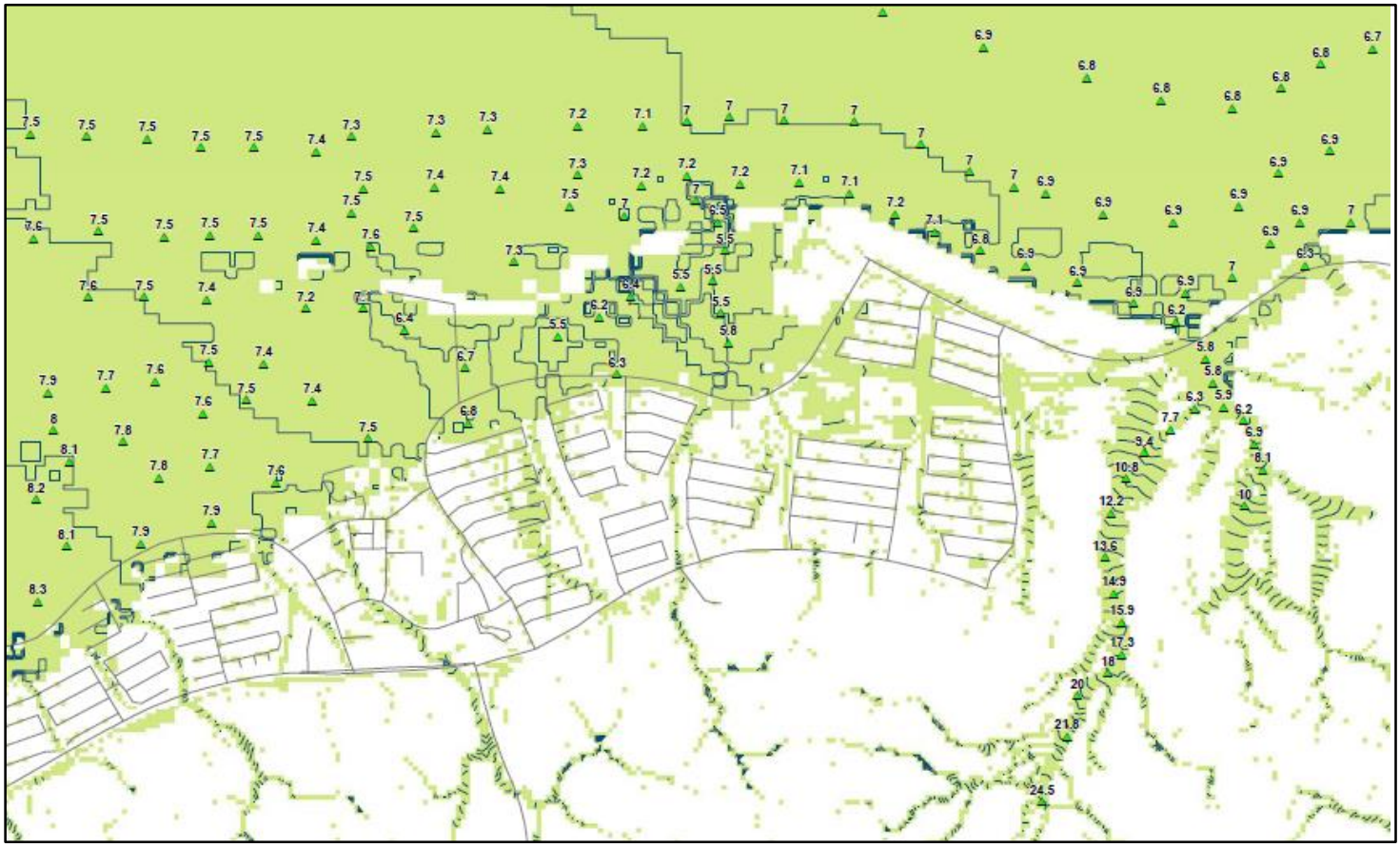

Legend

	100 Year ARI Flood Event

(Source: Karratha Coastal Vulnerability Study, JDA et al August 2012 – *modified*)

FIGURE 7
100 Year ARI Event - 2110

Perth
Level 1, 4/40 Hasler Road
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Australia

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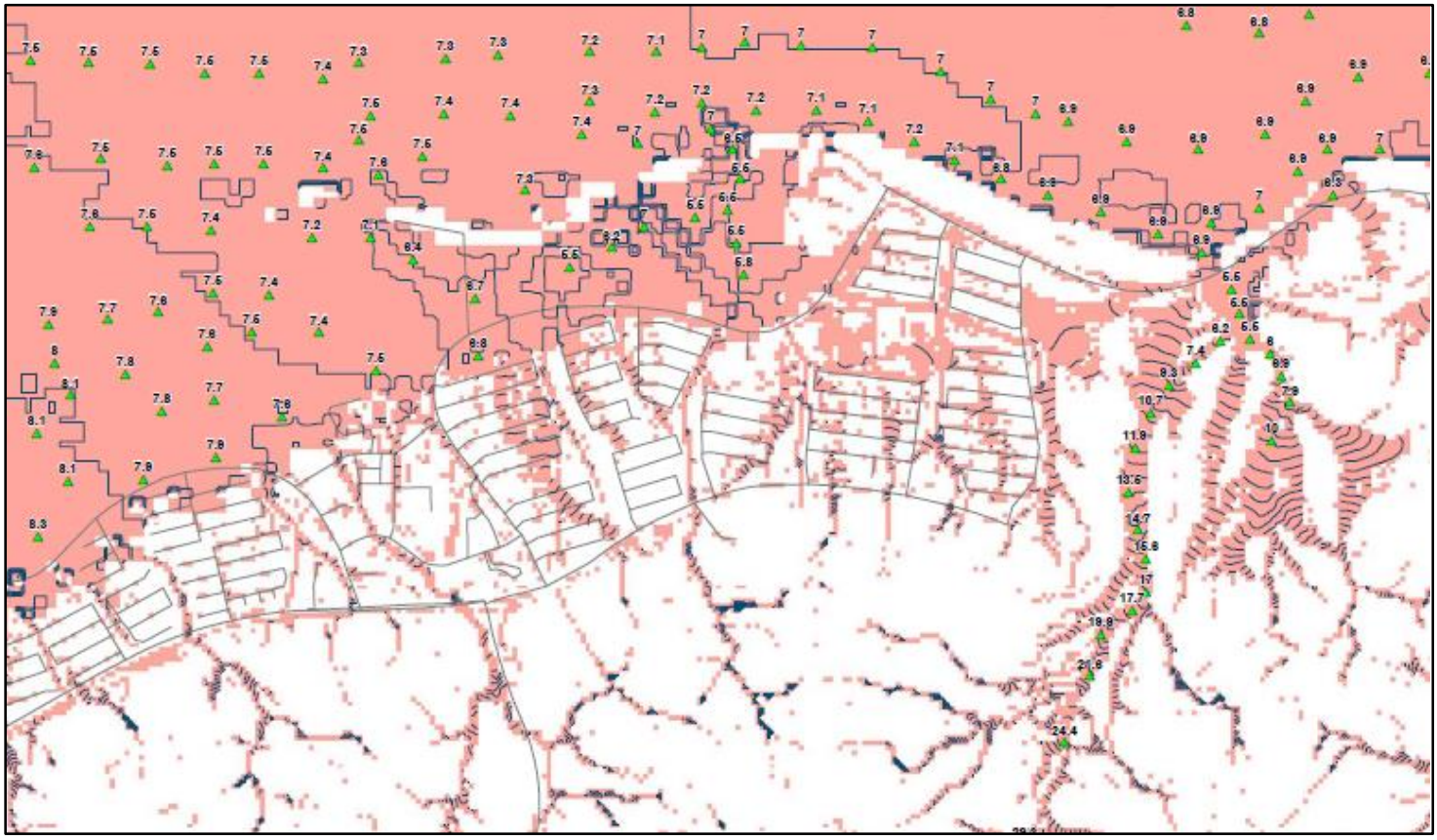

Legend

	100 Year ARI Flood Event (2010) & 2110 Surge Storm Scenario

(Source: Karratha Coastal Vulnerability Study, JDA et al August 2012 – *modified*)

FIGURE 8

100 Year ARI Event – 2010 & 2110 Storm Surge Scenario

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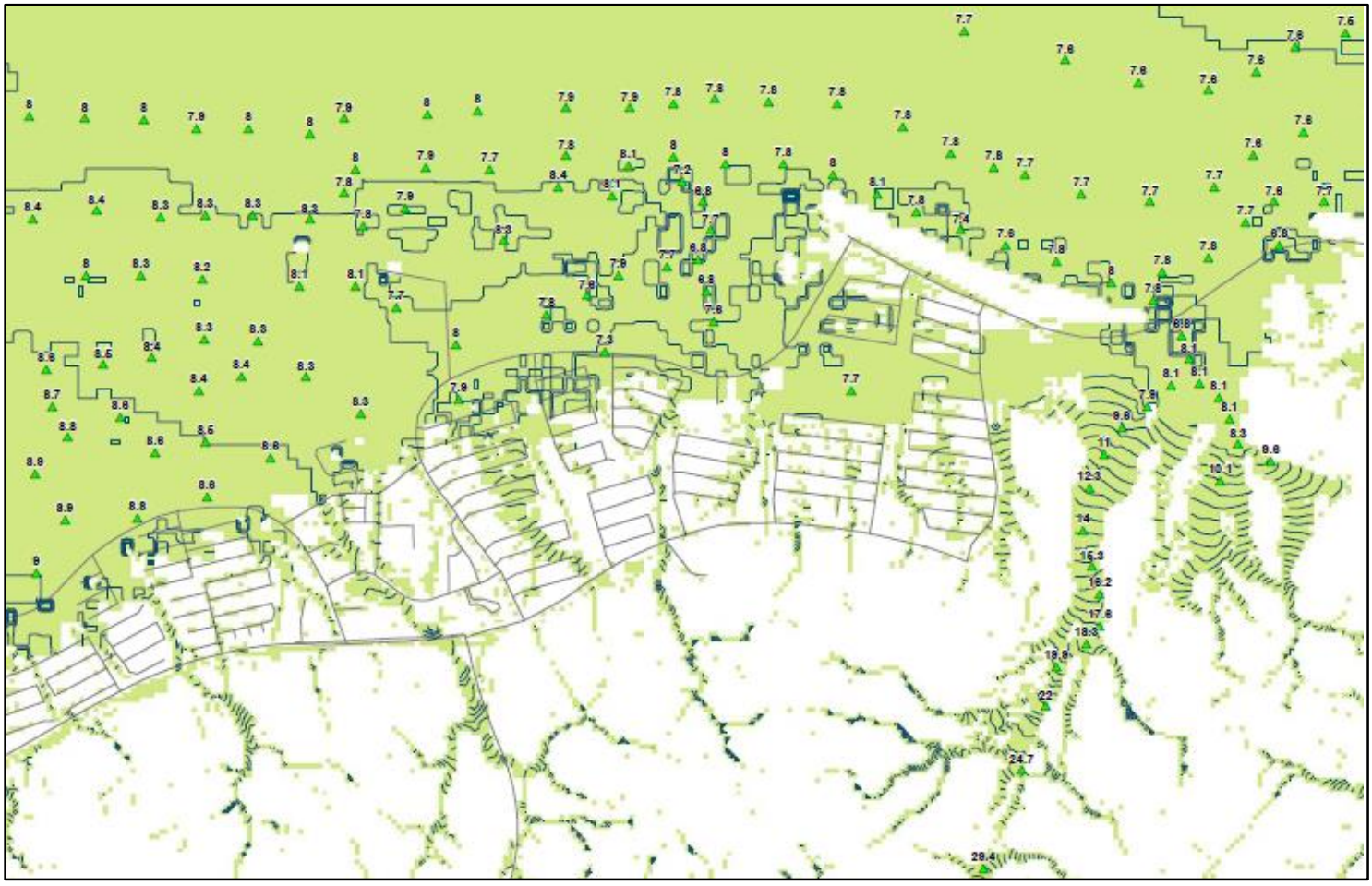

Legend

	500 Year ARI Flood Event

(Source: Karratha Coastal Vulnerability Study, JDA et al August 2012 – *modified*)

FIGURE 9

500 Year ARI Event - 2110

Perth
Level 1, 4/40 Hasler Road
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Australia

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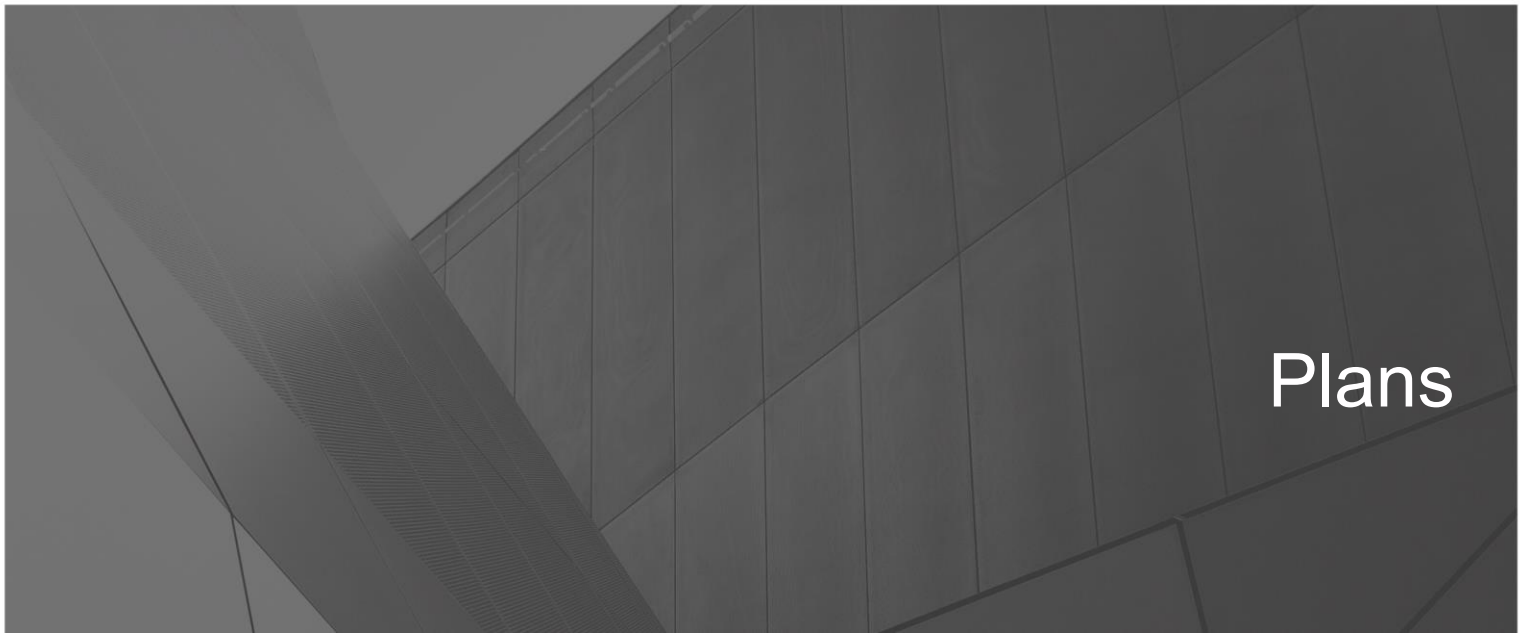
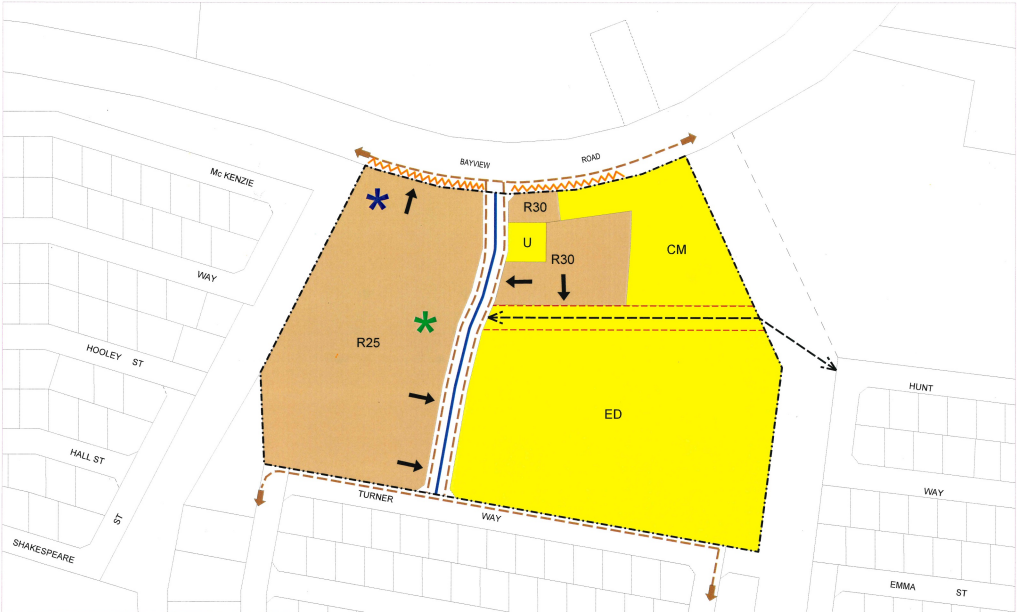


Plans



N

Plan No. : 20404-5
Revision : REV.3
Scale : 1:2000@A3

LEGEND

ZONES

- Residential
- ED — Public Purposes - Education
- CM — Public Purposes - Community
- U — Public Purposes - Utility

OTHER

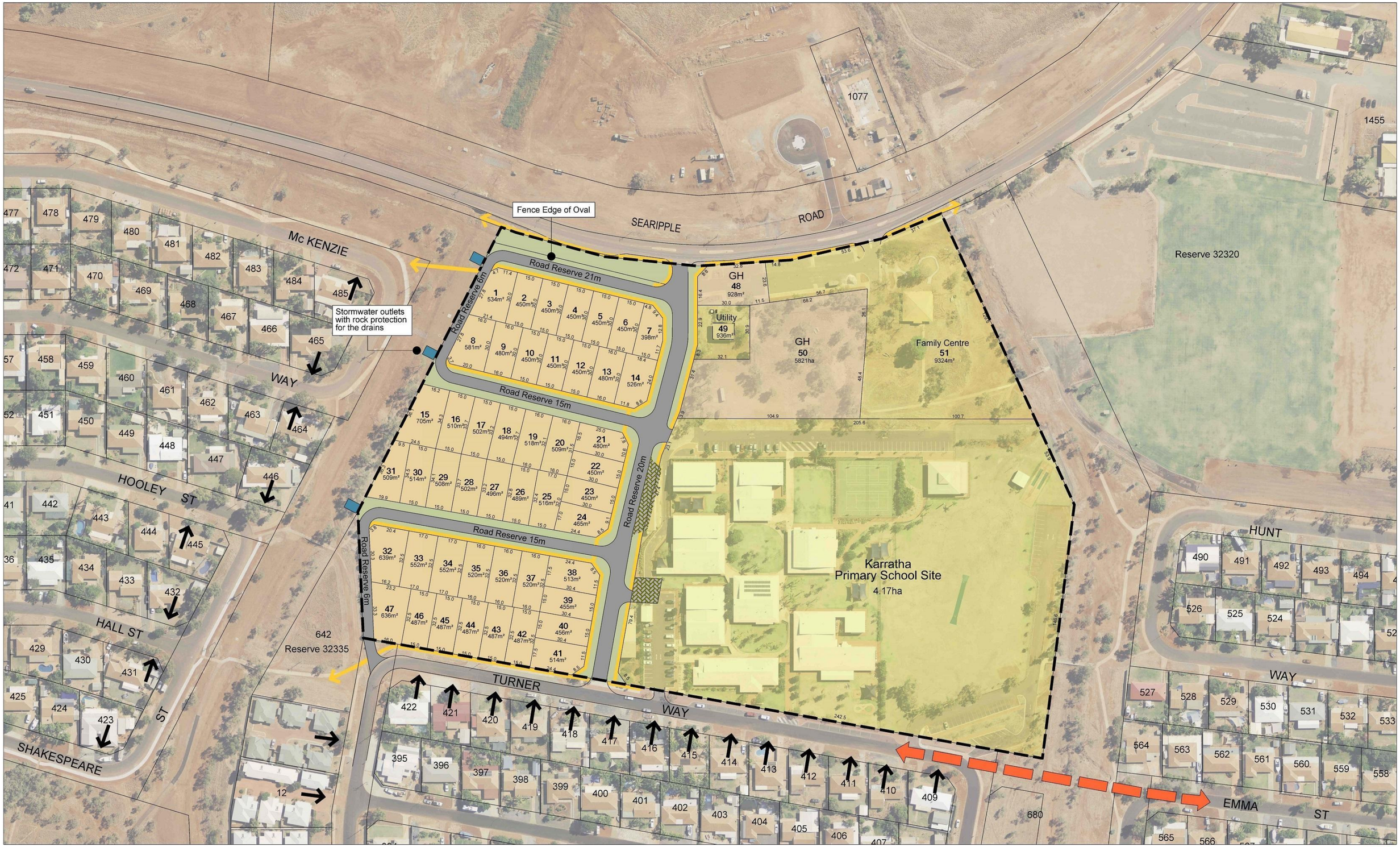
- Structure Plan Boundary
- Neighbourhood Connector 'B'
- Pathways
- No vehicular access
- Possible future east - west link
- Dwelling orientation (where practical)
- Provision of public open space to be determined at subdivision/development approval stage
- Future subdivision/development to address 100yr flood risk

STRUCTURE PLAN

LOT 4615 TURNER WAY
BULGARRA (KARRATHA)

PLAN 1

veris



Plan No. : 20404-3
Revision : REV.2
Scale :1:2000@A3

0 20 40 60

Member Practice
Suite 4 First Floor 40 Hasler Road Osborne Park WA 6017 www.whelans.com.au

Green Title Lots
Public Purposes
Existing Dwelling Orientation
Stormwater outlets
Indicative Landscaping
Proposed Future Link Road
Pathways
School Bus Embayments

SUBDIVISION CONCEPT PLAN KARRATHA HIGH SCHOOL

Plan 2

DATE DRAWN: 18/08/2015
DRAWN BY: CdeL
CHECKED BY: JP
FILE: 141028 development concept plan redesign 20404-3 rev 2.dgn
V DATUM: AHD
H DATUM: MGA94 (50)

whelans TOWN PLANNING

IMAGE SOURCED FROM NEARMAP
OCTOBER 2015

SCALE 1:1000

10 0 10 20 30 40 50

ALL DISTANCES ARE IN METRES

Rev.	Description	Drawn	Date	Chkd

Survey Date: N/A
Surveyed By: N/A
Drawn Date: 25/02/2016
Drawn By: TVW
Scale (A4): 1:1000
Checked By: RGB
Hor Datum: MGA50
Vert Datum: AHD

Data File:
CAD File: 160224-KarrathaHS_Sketch.dgn
Path: S:\Projects\15\15315\items\Item-39 Karratha HS

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Suite 4, First Floor, 40 Hasler Road, Osborne Park WA 6017
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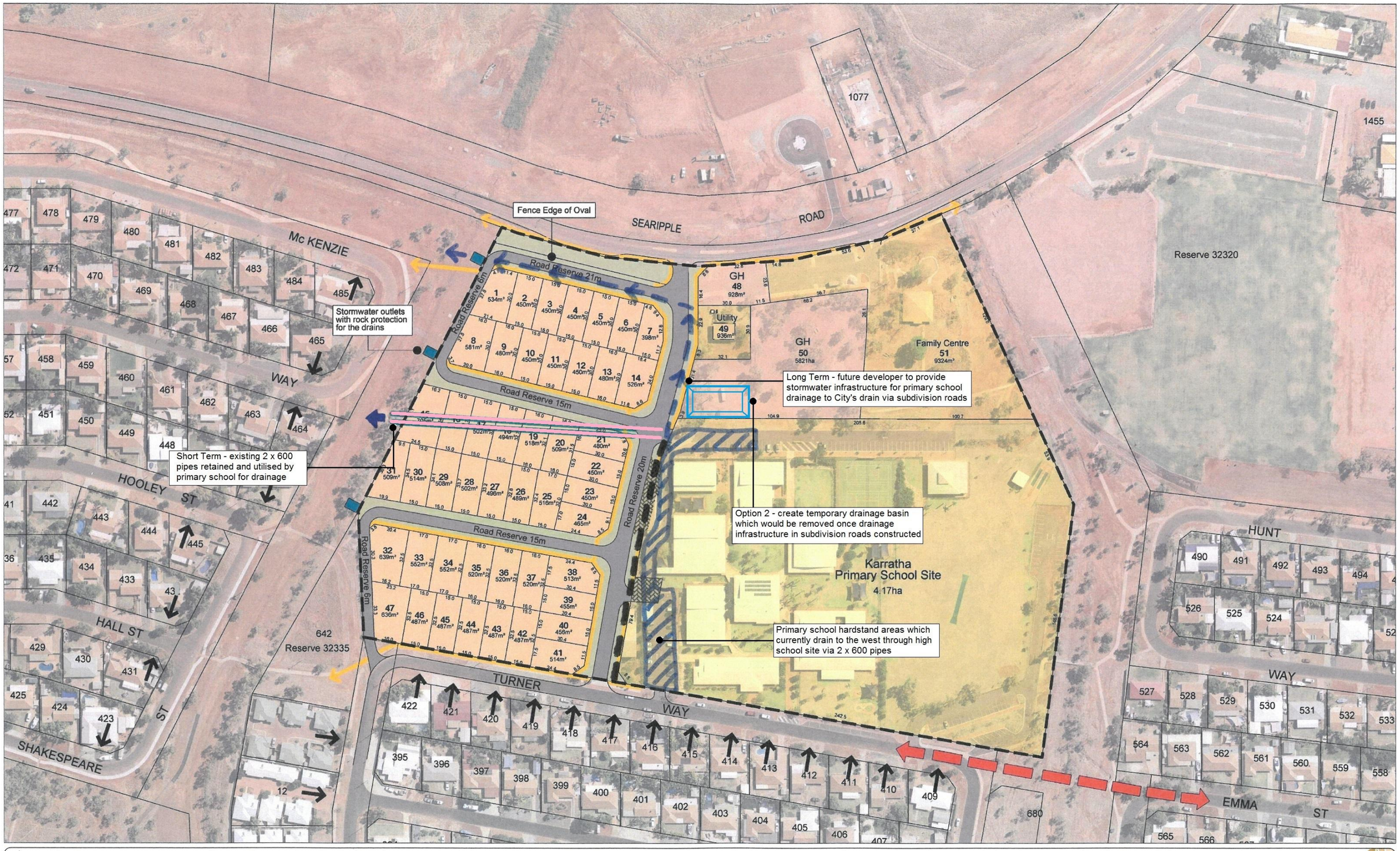
E: whelans@whelans.com.au W: www.whelans.com.au

Client: DEPARTMENT OF EDUCATION

KARRATH HIGH SCHOOL LOT A

LOT 4615 RESERVE 30602 ON DP 193623
SEARIPPLE ROAD
KARRATHA

PLAN 3



Plan No. : 20404-3
Revision : REV.2
Scale :1:2000@A3

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Member Profile

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Green Title Lots
Public Purposes
Existing Dwelling Orientation
Stormwater outlets
Indicative Landscaping
Proposed Future Link Road
Pathways
School Bus Embayments
Primary school hardstand areas draining through high school site
Existing primary school stormwater discharge 2 x 600mm pipes
Proposed future overland route for stormwater drainage as part of future subdivision
Approximate alignment of recycled high school garrison fencing

STORMWATER STRATEGY
KARRATHA PRIMARY SCHOOL
RESERVE 30602 SEARIPPLE ROAD, BULGARA

OPTION 1

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DRAWN BY: CdeL
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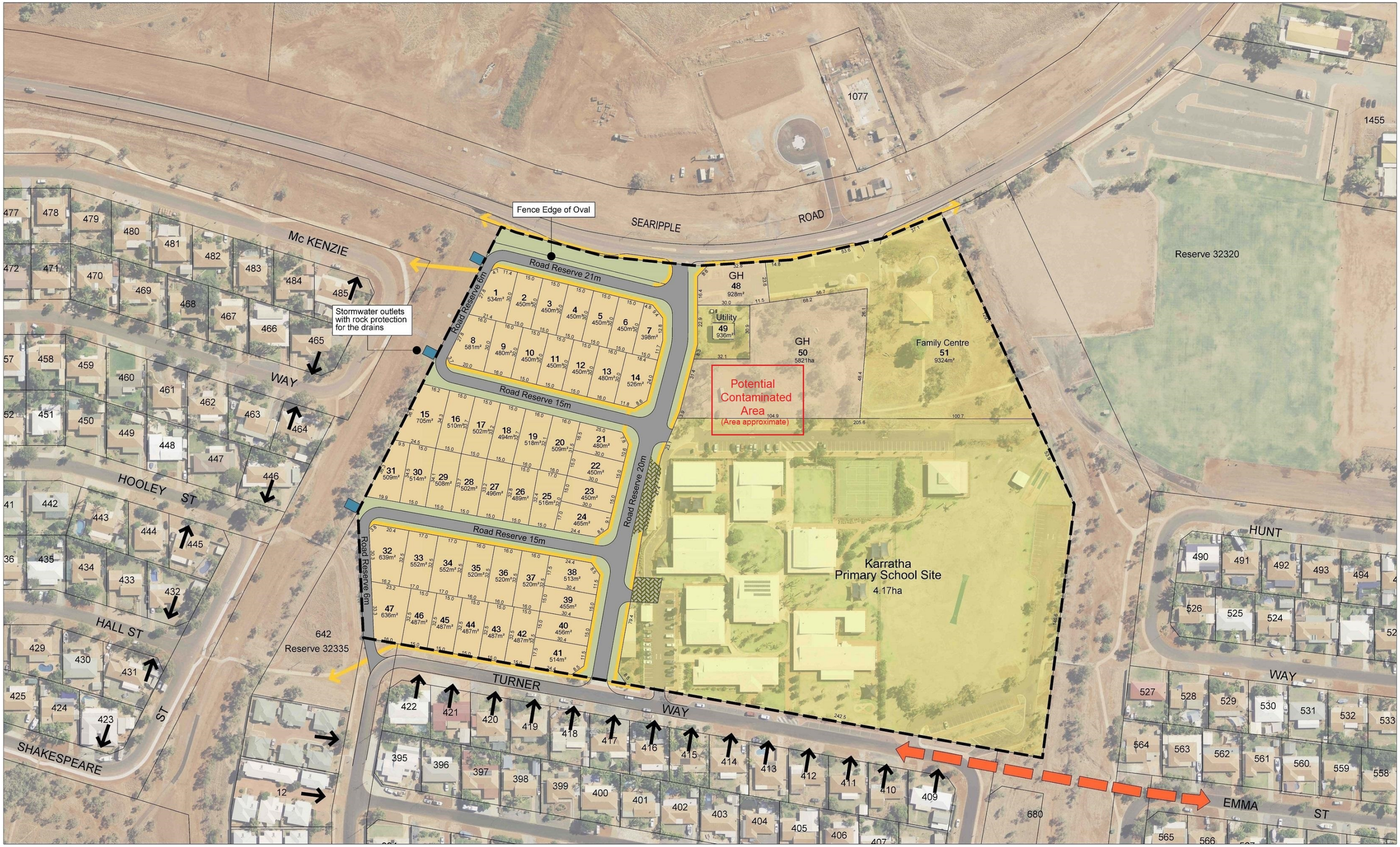
FILE: 141028
V DATUM: AHD
H DATUM: MGA94 (50)

Plan 4

whelans TOWN PLANNING

Preliminary Earthworks Plan
Lot 4615 Searipple Road
Bulgarra

Plan 5



Plan No. : 20404-3
Revision : REV.2
Scale :1:2000@A3

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Member Practice
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Green Title Lots
Public Purposes
Existing Dwelling Orientation
Stormwater outlets
Indicative Landscaping
Proposed Future Link Road
Pathways
School Bus Embayments

AREA POSSIBLE CONTAMINATION

Plan 6

DATE DRAWN: 18/08/2015
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CHECKED BY: JP
FILE: 141028 development concept plan redesign 20404-3 rev 2.dgn
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