
PART C: BACKGROUND

- Discusses:
 - The project methodology;
 - The strategic planning elements;
 - The stakeholder consultation;
 - The NELDAP options; and
 - The NELDAP option analysis.

6. Project methodology

6.1 Stages and milestones

The key stages and milestones of the NELDAP process are presented in Figure 27. The planning has been progressed at the direction of, and in close consultation with Moreton Bay Regional Council, and has regularly involved engagement with relevant branches internal to Council. Furthermore, the State government has been engaged regularly throughout the planning process.

Stage 1: Project inception and mobilisation

At project inception, a workshop was held to confirm the scope and process for the preparation of the NELDAP. The workshop provided an opportunity to share knowledge between different technical disciplines regarding major known opportunities and constraints both within and surrounding the area and to identify major information gaps. Initial advice from relevant State agencies was also discussed at the inception stage to highlight State interests. The outcomes of this stage included the commissioning of detailed technical studies that were required to fill information gaps ensuring that sufficient data was available to inform the project.

Stage 2: Technical studies

Stage 2 of the project involved a detailed review of the site and its physical, social and environmental characteristics.

Technical studies were undertaken to identify ecological and flooding constraints to confirm land that should be maintained in an undeveloped state. Technical studies were also completed to determine the social servicing, transportation, water, sewer and stormwater infrastructure required to support future development. The technical studies included:

- Demographics analysis;
- Housing needs analysis;
- Ecological field assessment;
- Green space network;
- Employment and economic development;
- Land use analysis;
- Transport options;
- Water and sewerage pre-feasibility;
- Stormwater drainage; and
- Community infrastructure needs.

The first community and stakeholder consultation was also undertaken during the drafting of the technical studies on 16 April 2010. The community feedback was used throughout the preparation of technical studies and in the development of the options for the NELDAP.

Stage 3: Scenario development and identification of preferred scenario

Stage 3 of the project incorporated the NELDAP scenario development and identification of the preferred scenario/option. The options were developed based on the outputs of a full day workshop held on June 2010 when Moreton Bay Regional Council convened the Narangba East Local Development Area Plan 'Options Workshop'. Attendees included representatives of Moreton Bay Regional Council, State agencies and consultants.

The purpose of the 'Options Workshop' was:

- To provide stakeholders with a brief on the key findings undertaken by specialist consultants, and brief stakeholders on the community's feedback from the consultation session;
- For State agencies to provide feedback and input into the planning process; and

- To consider various land use and infrastructure strategies to guide development of land use options.

At this workshop, participants were presented findings from technical studies and collectively developed urban design principles that would be appropriate. Participants then implemented these principles through the preparation of two land use options that responded to the area's physical opportunities and constraints. The outcomes of the workshop included urban design principles, a number of land use options and a series of associated land use strategies.

The release of the State Planning Policy 5/10: Air, Noise and Hazardous Materials 2010, during this stage, altered the ultimate outcomes of the developed scenarios, effectively placing approximately half of the study area "on hold" until more detailed planning investigations outside of the scope of this project are completed. This area is along the eastern side of NELDA and is contained within the 1,500 metre trigger for further investigation.

The release of the scenarios for consideration by the public and stakeholders was through a community consultation strategy that involved a thorough engagement process. The consultation strategy included the release of the two revised scenarios (options) on the website and through a newsletter sent to all residents and homeowners within and around the immediate NELDA. The newsletter was also accompanied by Questions and Answers (Q&A's) regarding the NELDAP and further details on the "Meet the Project Team" sessions, in which both PSA Consulting and Council provided a number of session times in which community and stakeholder members could engage with the project team through a one-on-one meeting.

Community and stakeholder feedback identified a number of issues as well as a preferred outcome that would result in a combination of the two scenarios (options). These findings were presented at a second Steering Committee workshop where the workshop attendees were briefed on community feedback and the development of the preferred scenario. The Steering Committee endorsed the findings and the preferred scenario allowing the further development of a number of infrastructure networks and the drafting of the NELDAP report to commence.

Stage 4: Drafting of the Narangba East Local Development Area Plan

To complete Stage 4, further detailed assessments and analysis was completed on major infrastructure networks. The outputs provided:

- All planning assumptions including population and housing projections, industry projections, household densities etc;
- The desired standards of service;
- The trunk water supply infrastructure to service various precincts;
- The trunk sewers to service various precincts;
- The identification of new road links to establish an efficient network;
- Indicative lane configurations of the arterial and sub-arterial road network; and
- The sequenced delivery of infrastructure to service the NELDA.

Stage 5: Finalise Narangba East Local Development Area Plan

Stage 5 sees the finalisation of the NELDAP. This will involve the Steering Committee considering community and stakeholder feedback on the draft report. Any modifications of the NELDAP report requested by the Steering Committee will be undertaken and the final report issued to Council.

Stage 6: Implementation plan

Stage 6 will deliver the Implementation Plan for the NELDAP.

Stage 7: Finalisation

This is the final stage of the project in which the final NELDAP report will be released to the community and stakeholders.

Figure 27: NELDAP Project Methodology



6.2 Statutory planning framework

This section outlines the legislative background and the key drivers, influences and considerations in the development of the NELDAP.

6.2.1 Sustainable Planning Act 2009

The Sustainable Planning Act 2009 (SPA) is the key legislative tool for implementing the planning and development process. SPA aims to provide for sustainable planning outcomes through the implementation of clear and effective State and local planning instruments and coordination of planning assessment throughout Queensland. The principles enshrined in SPA for sustainability and effective and efficient plan making have guided the preparation of the NELDAP.

6.2.2 State Planning Legislation and Policy

The NELDAP must comply with all requirements that may be triggered by SPA and other State legislation. The primary pieces of legislation concerning the drafting of NELDAP (other than SPA) are outlined in subsequent sections of this report.

6.2.3 South East Queensland Regional Plan 2009-2031

The primary purpose of the South East Queensland Regional Plan 2009-2031 (SEQRP 2031) is to provide a sustainable growth management strategy for SEQ to the year 2031. This encompasses principles for:

- Determining appropriate developable land to meet future population growth;
- Providing timely and cost-effective infrastructure and services;
- Establishing sound urban development principles that support a compact, well-serviced and efficient urban form;
- Protecting and enhancing the region's natural environment, biodiversity and natural resources;
- Maintaining and enhancing the quality of life for the existing and future communities; and
- Supporting a viable and diverse economy with well-located employment opportunities and economic activity centres.

The SEQRP 2031 sets out a number of policies contained in the sub-regional narratives for each local government in managing growth. The subregional narrative for Moreton Bay Region:

- Forecasts the region's population will increase from 333,000 people (in 2006) to 513,000 by 2031;
- Forecasts the region will need 84,000 additional dwellings by 2031; and
- Designates a number of Regional and Local Development Areas, and Investigation Areas to accommodate for future projected growth. This includes both broadhectare and existing urban areas to accommodate for future growth within the region.

Further discussion on SEQRP 2031 is provided in subsequent sections of this report.

6.2.4 Development areas

Narangba is identified as an existing urban area that has been designated a Local Development Area in SEQRP 2031. The SEQRP 2031 identifies Narangba as suitable rural residential land that displays significant infill opportunities while being ideally located near the Brisbane – Sunshine Coast rail corridor and to the Bruce Highway. Narangba is also identified to contain business and industry employment opportunities to diversify the range of employment and business opportunities whilst also increasing the level of self containment in the region.

Development Areas designated by the SEQRP 2031 are fundamental to the delivery of dwelling and employment targets within South East Queensland. The SEQRP 2031 has the following principal regarding Development Areas:

"Development Areas, in addition to regional activity centres and other suitable established urban areas, are the focus for accommodating regional dwelling and employment targets, and require comprehensive planning to coordinate future development with infrastructure delivery".

Development Areas within the Urban Footprint are determined as either:

- Regional Development Areas - areas that are likely to require substantial state infrastructure and are expected to yield regionally significant dwelling and employment yields; or
- Local Development Areas - areas that are significant in the delivery of dwelling targets and employment for particularly local government areas, in this case Moreton Bay Regional Council.

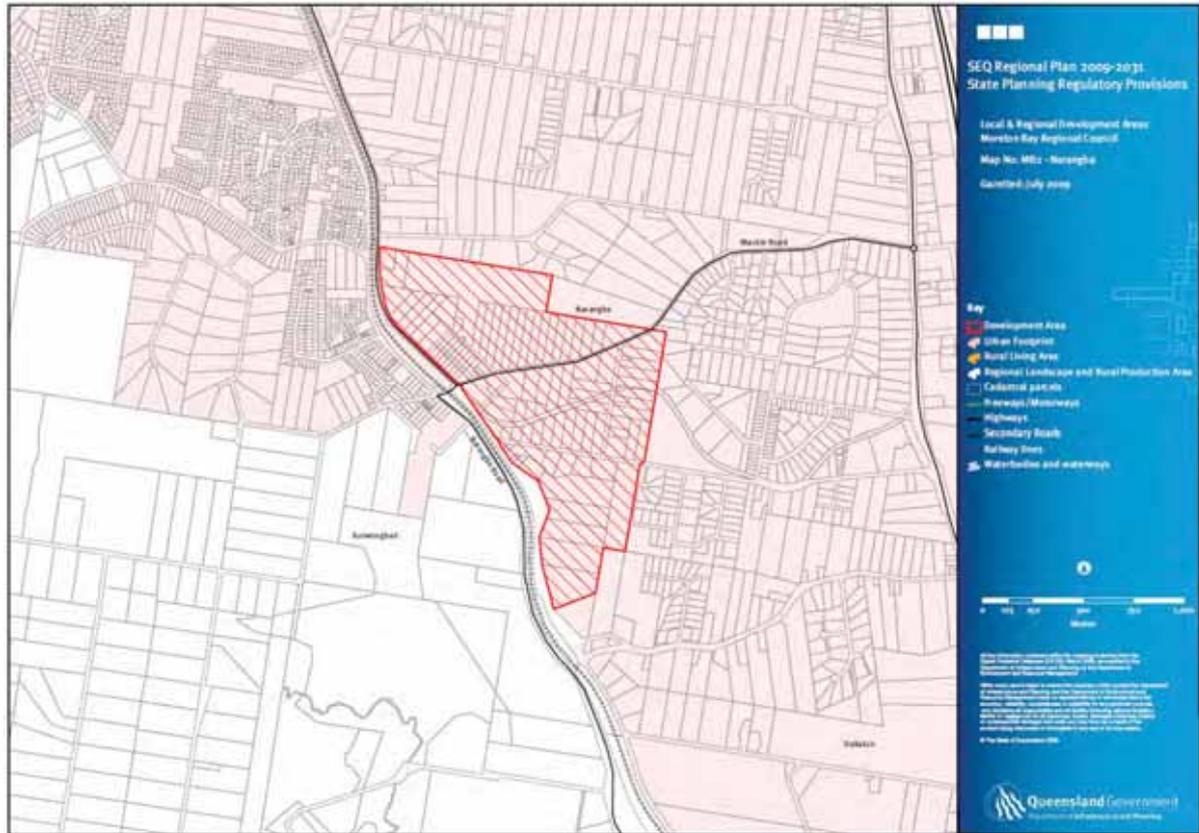
The SEQRP 2031 outlines requirements for the preparation of Local Development Area plans. SEQRP 2031 also specifies that plans for Local Development Areas can be:

- Prepared and approved formally as a Structure Plan under the Integrated Planning Act 1997 (IPA) [now SPA] – where the Minister declares the an area as a master plan area; or
- Prepared informally and then used as a basis for submitting a proposed Caboolture ShirePlan amendment or an application for preliminary approval.

In this case of Narangba East, the NELDAP will be delivered through a planning scheme amendment to either the current Caboolture Shire Planning Scheme (Caboolture ShirePlan) or, the amalgamated Moreton Bay Region Planning Scheme (currently in the early stages of preparation).

Note that the NELDA is larger than the Local Development Area gazetted in the SEQRP 2031, State Planning Regulatory Provisions (Figure 28). Moreton Bay Regional Council, in response to the SEQRP 2031, commenced planning for the projected growth in the area by extending the boundaries of the Local Development Area identified in SEQRP 2031 to include additional potential developable land. The extended boundaries included generally broadhectare land and larger lots that are all within the SEQRP 2031 urban footprint

Figure 28: NELDA (SEQ Regional Plan 2031: State Planning Regulatory Provisions)



6.2.5 Local planning framework

The development potential of Narangba East has been recognised dating back to as early as the 1988 Strategic Plan prepared by Caboolture Shire Council. However, development and growth within the Narangba area has since occurred predominantly only in surrounding greenfield areas (Narangba Valley and North Lakes). Whilst much of the NELDA has maintained its zoning for low density residential purposes, current and previous provisions dating back to the mid-1990s have limited opportunity for further large lot subdivision.

The local planning for Narangba is currently guided by the Caboolture Shire Planning Scheme (Caboolture ShirePlan). The Caboolture ShirePlan commenced on 12 December 2005 and includes both broad and detailed planning requirements in relation to the study area. Caboolture ShirePlan will remain in force until a new scheme is prepared for the Moreton Bay Regional Council.

The NELDAP has been informed by Caboolture ShirePlan's Desired Environmental Outcomes (DEO's), zoning and overlays which has further provided policy and statutory intent relevant to the NELDAP process. According to the DEO's relevant to the land use within the NELDAP:

- The ecological qualities of areas of local, regional and State ecological significance including waterways, coastlines, areas of remnant vegetation and wildlife are protected and enhanced;
- Commercial uses are consolidated in centres and are located in accordance with the centres hierarchy which include higher order commercial, retail and administrative uses are located in the Caboolture-Morayfield Metropolitan Centre, middle order commercial uses are located in the Bellara, Burpengary

and Deception Bay District Centres, and single or a small number of convenience uses are located in the various local centres dispersed throughout the Shire;

- Industrial uses are consolidated in industrial areas and are located in accordance with the industrial hierarchy in which large scale, high impact industries are located in the Regional Industry Zone at Narangba, medium scale low impact industrial uses are located in the District Industry Zone at Caboolture (Bribie Island Road/Bruce Highway interchange) and Morayfield (Nolan Drive) and small, low impact industrial uses are located in the Local Industry Zone dispersed throughout the Shire;
- The valuable features, built environment and land use pattern of new development, and the growth or redevelopment of existing communities provides areas with a distinct sense of place and local identity;
- The standards and range of housing, businesses, services and facilities reflect community needs; and
- Residential uses are consolidated within the existing urban areas and in particular, the Caboolture-Morayfield-Burpengary-Narangba corridor.

The Desired Environmental Outcomes (DEO's) of the Caboolture ShirePlan reflect a clear overall intent for appropriately allocating land uses and accommodating future growth within a preferred sustainable land use pattern including NELDA.

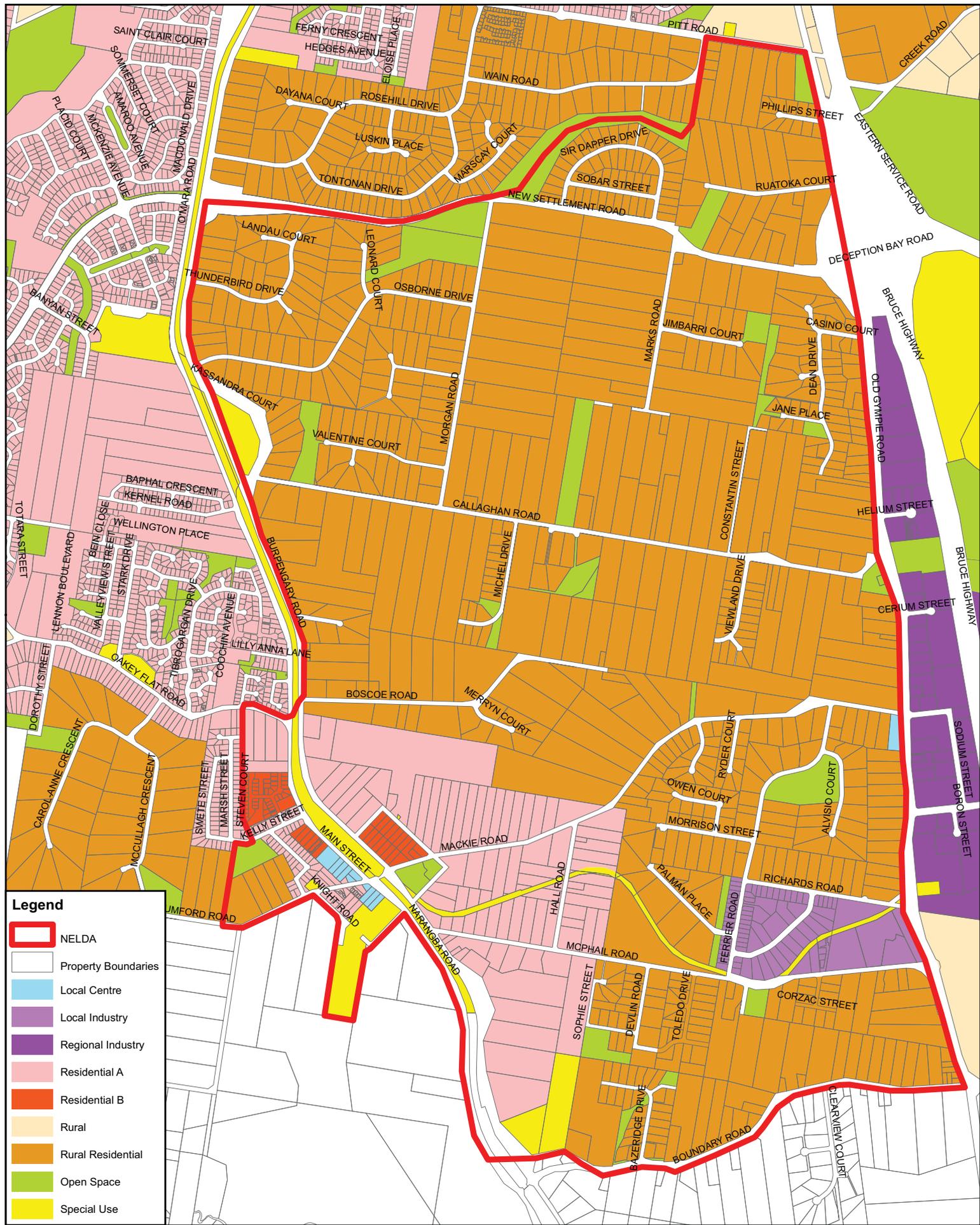
6.2.6 Caboolture ShirePlan Zoning

The Narangba East Local Development Area is currently influenced by the following zoning under Caboolture ShirePlan (Figure 29):

- Residential A: land designated within an approximate 800 metre catchment east of the Narangba Rail Station with the exception of a few immediate lots adjacent to the Narangba Rail Station, between Burpengary Road, Wheaton Street and Walmsley Street (zoned as Residential B).
- Residential B: land immediately adjacent to the Narangba Rail Station specifically including:
 - Approximately 18 lots east of the Narangba Rail Station bordered by Wheaton Street, Mackie Road and Burpengary Road;
 - 6 lots west of the Narangba Rail Station north of the local centre fronting Main Street; and
 - An area recently subdivided west of the Narangba Rail Station north off Kelly Street on Desmond Street.
- Rural Residential: the most predominant zone within the Narangba East area and are lots that are generally fragmented and range from 3000m², to up to 5 hectares in size. Rural Residential areas are further classified as precincts under Caboolture ShirePlan (Figure 30). These precincts and their Specific Outcomes for these in regards to reconfiguration of a lot include:
 - Buffer Areas Precinct : the impact of other land uses on rural residential development is minimised and the impact of the rural residential development on sensitive environmental and rural areas is minimised;
 - Park Residential Precinct : the development provides for rural residential style living on land that is of a sufficient size to ensure environmental considerations have not been compromised and that adequate land is available for both effluent disposal and private recreation purposes;
 - Restricted Precinct: the existing size and shape of lots is maintained; and
 - Transition Precinct: Land within the Transition Area designation is retained in large lot sizes and is not developed for purposes that might conflict with or constrain possible future urban development.
- Special Use: Allocated to land/corridors currently or proposed for the provision of community services and community infrastructure. Within the study area this includes the Narangba Primary School, the Narangba Rail Station and rail line, a parcel of land east of the rail line at the junction of Callaghan and Burpengary Roads (owned by Queensland Rail), a parcel of land in the far most south-west corner of the study area (currently a water reservoir).
- Local Centre: Allocated to the lots immediately west of Narangba Rail Station and also to a smaller centre located at the south-west junction of Mackie and Old Gympie Roads.
- Industry: Allocated to a small pocket of general industry uses around McPhail, Ferrier and Richards Roads. There is also a large regional industry area designated to the east of the study area (Narangba Industrial Estate).

-
- Green space areas: numerous allocated sites throughout the study area that are generally well vegetated or have other environmental characteristics. The Caboolture Shire Planning Scheme – Planning Scheme Policy 21 C – Trunk Infrastructure Contributions – Open Space and Community Purpose identifies:
 - 12 hectares of Recreational Parklands; and
 - 4 hectares of future Recreational Parklands.

In summary, the need to plan NELDA has also arisen in response to acknowledging the requirement to convert a significant number of rural residential approvals and developments into a greater number of urban residential allotments, which would cater for more appropriate and economically sustainable rates of growth within NELDA. Existing and future rural residential development is an underutilisation of land, considering the proximity of the Narangba Rail Station and the opportunity to establish a significant Transit Oriented Development.



Legend

- NELDA
- Property Boundaries
- Local Centre
- Local Industry
- Regional Industry
- Residential A
- Residential B
- Rural
- Rural Residential
- Open Space
- Special Use



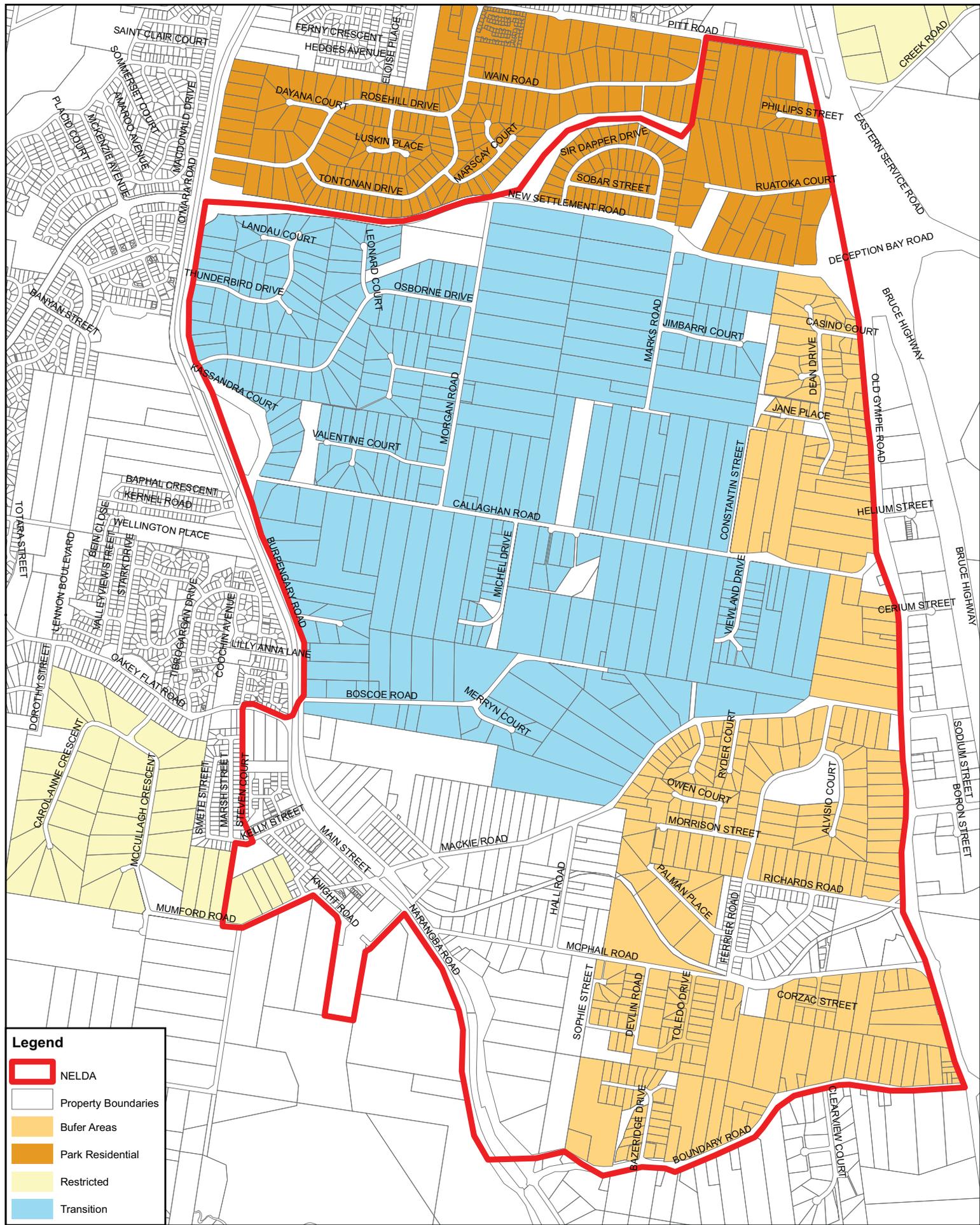
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Figure 29
NELDA Caboolture
ShirePlan Zoning

DATUM GDA 1994, PROJECTION MGA ZONE 56

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Legend

-  NELDA
-  Property Boundaries
-  Bufer Areas
-  Park Residential
-  Restricted
-  Transition



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Figure 30
NELDA Caboolture ShirePlan
Rural Residential Area

N

0 0.2 0.4 0.8 km

 DATUM GDA 1994, PROJECTION MGA ZONE 56

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6.2.7 Caboolture ShirePlan Overlays

The Caboolture ShirePlan contains a number of overlays that detail existing constraints on existing allotments in NELDA. An overview of the Caboolture ShirePlan Overlays follows:

- Acid sulfate soils: 'Acid Sulfate Soils' areas are present within the north-east corner of NELDA according to Caboolture ShirePlan's Overlay Map CO1 Acid Sulphate Soils;
- Bushfire hazard: A number of areas are identified as 'Low Bushfire Hazard', 'Medium Bushfire Hazard' and 'High Bushfire Hazard' under Caboolture ShirePlan's Overlay Map CO2 Bushfire Hazard;
- Catchment protection: NELDA contains a number of 'Catchment Protection Minor Waterways' within the area. There are no Major Waterways identified. However, the area located west of the rail line is within the Potable Water Catchment under Caboolture ShirePlan's Overlay Map CO3 Catchment Protection;
- Cultural heritage: The NELDA does not have any specific sites of culture heritage significance designated under Caboolture ShirePlan Overlay Map CO5 Cultural Heritage;
- Electricity and gas infrastructure overlay: The NELDA is not impacted by 'Electricity and Gas Infrastructure', however there is a site to the east of Old Gympie Road (between McPhail and Mackie Roads) identified as an area potentially affected by Energex substations;
- Extractive resources: The NELDA has a number of areas identified as 'Extractive Resource Areas'. These include:
 - The designated Narangba Hardrock Haulage Corridor that runs west to east along the south of the area;
 - A large dedicated Resource Area with a mining lease over it located just north east of the Narangba Rail Station; and
 - A transport corridor along New Settlement Road, north of the NELDA;
- Good quality agricultural land overlay: The NELDA does not contain any 'Good Quality Agricultural Land' areas under Caboolture ShirePlan's Overlay Map CO7 Good Quality Agricultural Land;
- Koala conservation overlay: The NELDA does not reflect any 'Koala Conservation Areas' under Caboolture ShirePlan's Overlay Map CO8 Koala Conservation;
- Landslide hazard: The NELDA does not contain any 'Landslide Hazard' areas under Caboolture ShirePlan's Overlay Map CO9 Landslide Hazard;
- Nature conservation overlay: The NELDA contains a number of 'Nature Conservation Areas' that contains values of 'Biodiversity Significance' and requires a 20 metre buffer around these known values. There are no identified 'Conservation Estate Areas' or 'Ecological Corridors' under Caboolture ShirePlan's Overlay Map CO10 Nature Conservation;
- Scenic amenity overlay: The NELDA does not contain any 'Scenic Amenity' areas under Caboolture ShirePlan's Overlay Map CO11 Scenic Amenity;
- Transport infrastructure roads: The NELDA incorporates an existing hierarchy of roads. There is no identified future roads proposed within the Caboolture ShirePlan's Overlay Map CO12(a)-Transport Infrastructure Roads; and
- Transport infrastructure rail: The NELDA is currently serviced by the Narangba Rail Station on the Queensland Rail's Caboolture rail line. The rail line runs north south on the western boundary of NELDA along Burpengary Road. Caboolture ShirePlan's Overlay Map CO12(b) – Rail, indicates a 'Rail Corridor Impact Area' buffering the rail line.

The Caboolture ShirePlan Overlays provide valuable input into many of the technical studies. The entire overlay mapping for NELDA is provided in Appendix 2: Overlay Maps.

7. Strategic planning elements

The size and scale of development proposed by the NELDAP requires that a full and detailed analysis of the site constraints and development opportunities be undertaken. This chapter provides a summary of the key issues that have been identified through the broader strategic planning process, and the issues that contributed to the development of the draft NELDAP options.

7.1 Land use analysis

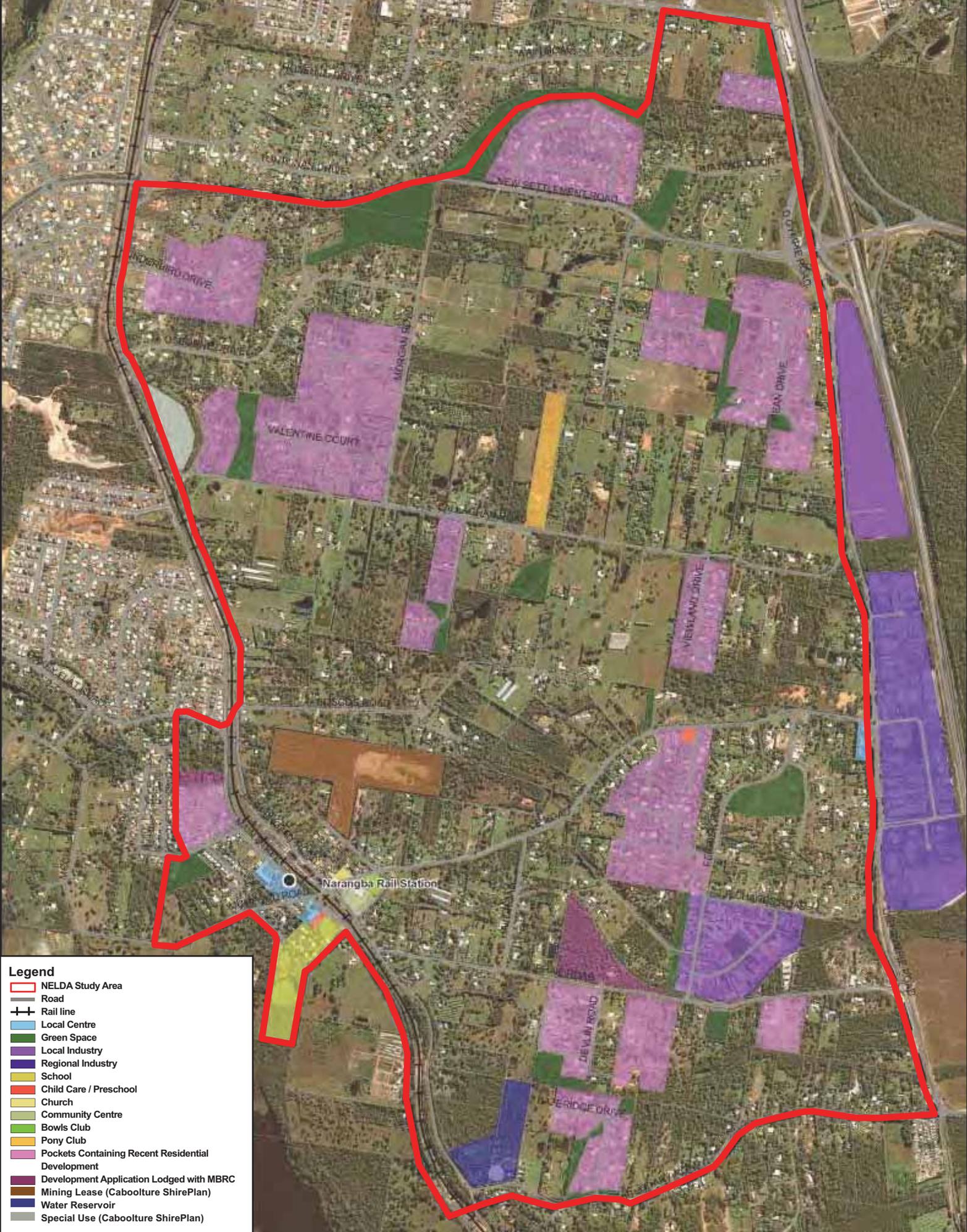
The key findings are NELDA:

- reflects a rural residential character with many large lots;
- has pockets of newer, high quality developments located throughout the study area. These areas have been identified as 'Park Residential' within the development of the options and the preferred NELDAP Structure Plan;
- has two existing local centres. The first being the commercial/retail precinct west of Narangba Rail Station (Mains Road). This centre includes Narangba Village, Narangba Plaza and the Narangba Library. This precinct generally reflects historical local centre development and generally lacks cohesion and integration. There is a second much smaller centre located on the corner of Old Gympie Road and Mackie Road that generally services the passing traffic and the industrial area adjacent with takeaway food and some convenience retail;
- has a small industrial area north of McPhail Road, along Ferrier Road, Richards Road and Andrew Campbell Drive. The uses consist of low impact general industrial uses and will be retained;
- has a regional industry area east of the NELDA. The regional industry area is of a significant scale and includes the Narangba Industrial Estate;
- has a state designated Narangba Hardrock Haulage Corridor that runs west to east along the south of the area;
- has a large dedicated 'Resource Area' with a current mining lease located just north east of the Narangba Rail Station. This site is well vegetated however is also currently zoned for future development designated as "Residential A" under the Caboolture ShirePlan;
- has a number of waterway corridors and areas identified within the Q100 Flood levels. Some of these areas may also be reflected by man-made dams on rural residential properties; and.
- has a number of areas with environmental values including habitat corridors, koala habitat areas, high value regrowth areas, essential habitat areas and nature conservation areas.

Summary

The major, implication of the current zoning and land use pattern is that there is a need to undertake detailed planning for NELDA, in response to the need to create a more efficient land use pattern than the existing predominant rural residential development. Rural residential development is not supportive of transit, and not supported by TOD principles as it is an underutilisation of land given its proximity to the centre. Mixed use development within a 400 metre to 800 metre catchment around the Narangba Rail Station would create higher density living that would provide opportunity for greater self containment with a range of retail, commercial and community uses supported by a higher density residential catchment.

However, ultimate urban development for NELDA needs to be undertaken within the constraints protecting important vegetation, fauna, waterways, corridors and land subject to flooding, and the opportunities presented by topography and scenic amenity. Furthermore, adverse impacts from air and noise from industrial areas should be appropriately buffered from sensitive uses including residential and community uses.



- Legend**
- NELDA Study Area
 - Road
 - + Rail line
 - Local Centre
 - Green Space
 - Local Industry
 - Regional Industry
 - School
 - Child Care / Preschool
 - Church
 - Community Centre
 - Bowls Club
 - Pony Club
 - Pockets Containing Recent Residential Development
 - Development Application Lodged with MBRC
 - Mining Lease (Caboolture ShirePlan)
 - Water Reservoir
 - Special Use (Caboolture ShirePlan)

Figure 31
NELDA
Land Use Survey



VERSION: 2
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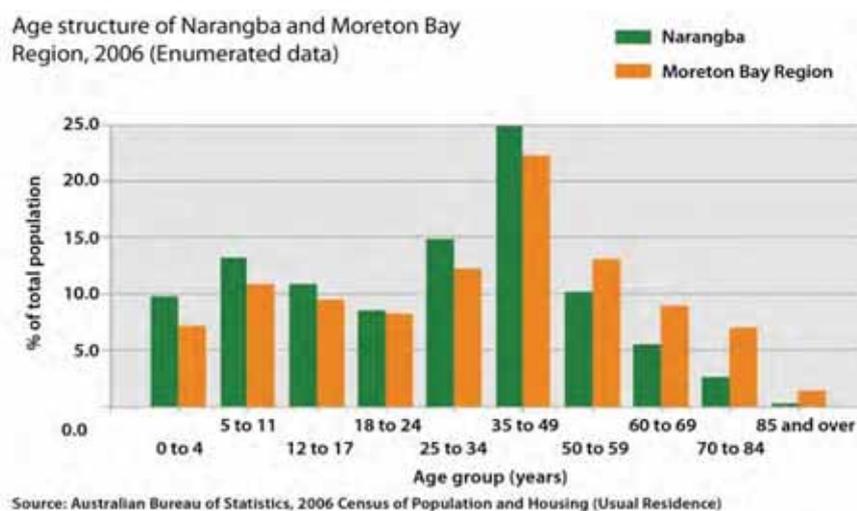
7.2 Demographic analysis

Note that although the Moreton Bay Regional Council profile area does not correspond precisely to the study area or the State gazetted suburb of Narangba (and therefore the study area should not be directly compared to the Moreton Bay Regional Council Area or the suburb of Narangba) key findings of the demographics analysis are:

- In 2006 there were a lower proportion of people in the study area employed in white collar occupations compared to Moreton Bay Regional Council (63.4%) and Brisbane Statistical Division (68.8%).
- In 2006 Narangba generally had a younger population than the Moreton Bay Regional average. This were represented by:
 - younger age groups of 0-17 - Narangba had 33.2% compared to the Moreton Bay Region with 27.1%.
 - older age groups of 60+ years - Narangba had 8.2% compared to the Moreton Bay Region with 17.1%
 - Narangba's median age is 31 compared to Moreton Bay Region with a median age of 36 years.
- In 2006 Narangba had a lower proportion of lone person households represented by 6.8% compared to Moreton Bay Region with 18.8%.
- In 2006 Narangba had a higher percentage of households represented by couples with children (57.5%), compared to the Moreton Bay Region (46.1%).
- In 2006 Narangba residents generally had higher proportion (28.6%) of high income earners (households earning over \$1,700 per week or more) compared to the Moreton Bay Region with 20.4%.
- In 2006 Narangba residents generally had a lower proportion (6.9%) of low income earners (households earning less than \$500 per week), compared to the Moreton Bay Region with 17.8%.
- In 2006 the primary mode of journey to work for Narangba residents was by private motor vehicle (72.4%). Only 9.5% of Narangba residents used public transport. This was predominantly via train, represented by 8.9%.
- In 2006 the predominant employment type within Narangba was retail and manufacturing.

Figure 32: Comparative Age Structure of Narangba Residents Compared to the Moreton Bay Region

(Note: the inclusion of Narangba Valley in the methodology may affect the results)



Summary

Narangba's existing population profile reflects a high proportion of households represented by couples with children that are typically dependant on private motor vehicles for transport. NELDA is projected to continue to have a high proportion of households represented by couples with children, like the adjacent Narangba Valley, which is an important consideration when planning for community infrastructure and facilities and housing diversity.

Planning for NELDA should seek to provide for steady population growth to ensure integration whilst diversifying household sizes through offering a range of diverse dwelling forms for different household types. Diverse dwelling forms that cater for a range of household types should be focused around the Narangba Rail Station to allow for easy access to transport, employment and services creating less dependency on private motor vehicular trips. Further employment opportunities within the proposed district centre should be explored to increase employment self containment and diversify local employment opportunities.

7.3 Housing needs

The key findings are:

- In 2006, the 4,075 occupied dwellings in Narangba were comprised of a mix of the following housing types:
 - 94.5% were separate houses (3,851 dwellings);
 - 1.6% were medium density dwellings (64 dwellings); and
 - 3.8% were unspecified or unoccupied (155 dwellings).
- In 2006 there were a mix of household sizes in Narangba comprised of:
 - 7.1% of 1 person dwellings (270 dwellings);
 - 30% of 2 person dwellings (1,143 dwellings);
 - 20.7% of 3 person dwellings (787 dwellings);
 - 25.7% of 4 person dwellings (977 dwellings);
 - 11.4% of 5 person dwellings (434 dwellings); and
 - 5.1% of 6+ person dwellings (194 dwellings).
- In 2006 there were a mix of household types in Narangba is comprised of:
 - 49% of couples with children;
 - 25% of couples without children;
 - 12% of single parent households;
 - 10% of lone person households; and
 - 3% of other households.
- By 2026, State government forecasts the mix of household types in Narangba to be comprised of:
 - 29% of couples with children;
 - 37% of couples without children;
 - 10% of single parent households;
 - 21% of lone person households; and
 - 3% of other households.

Table 3: Projected Household Type in the Narangba-Burpengary SLA

Year	Couples with children	Couples without children	Single parent family	Lone person	Other
2001	49%	25%	12%	10%	3%
2006	42%	28%	13%	14%	4%
2011	36%	32%	12%	16%	4%
2016	32%	35%	11%	17%	4%
2021	30%	36%	11%	18%	3%
2026	29%	37%	10%	21%	3%

(Source: Based on Queensland Population Projections, 2010)

Summary

The NELDAP needs to provide for a mix of housing options to meet the emerging community's accommodation needs. The NELDAP must be prepared to match the community's projected household profile

and respond to housing affordability by providing housing choice. Key aspects likely to affect the housing mix are:

- Significant changes to the household structure within Narangba, particularly the decline of “couples with children” from 49% (in 2001) to only 29% in 2026.
- The projected increase for “lone person households” from 10% in 2001 up to 21% in 2026.

7.4 Employment and economic development

Note that the following data is for the Burpengary-Narangba SLA and is not specific to the study area. However, the key findings are:

- In 2006 there were approximately 4,300 people working in the Burpengary-Narangba Statistical Local Area (SLA) as at the 2006 Census.
- In 2006 there were nearly 1,000 people (23.4% of workers) in the Moreton Bay Region employed in manufacturing.
- In 2006, after manufacturing, the largest sector in terms of employment was retail trade, which employed 13% (565) of workers in the SLA. The largest shopping centre in the SLA is Burpengary Plaza, which is outside the NELDA.
- In 2006, compared to MBRC and Queensland, Burpengary-Narangba has a higher proportion of technicians and trades workers, machinery operators and drivers and labourers.
- Burpengary-Narangba has a lower proportion of its workforce employed in professional occupations than MBRC and Queensland, partly reflecting lower employment in service industries such as professional, scientific and technical services, public administration and health care, and social assistance.
- An analysis of flows in and out of Burpengary-Narangba reveals that outflows are far greater than inflows resulting in a net loss of workers. This is not surprising given the limited employment opportunities in Burpengary-Narangba compared to higher order activity centres such as Caboolture and Brisbane. Approximately 2,538 people commuted to Burpengary-Narangba SLA to work on Census day 2006. Workers currently commute to other centres within Moreton Bay Regional Council.
- The labour force containment rate for the Burpengary-Narangba SLA was 17.8% as at the 2006 Census. This implies that over 80% of employed people residing in the region worked outside the SLA boundary.
- The labour force containment rate for the whole of the MBRC area is 49.8%, meaning that the number of workers who work within and outside of the region is approximately equal.
- Approximately 1,700 workers also resided within the Burpengary-Narangba SLA, giving it a self containment rate for the SLA of 40.3%. This means that 60% of people working in the SLA travelled from outside the region.
- According to the 2006 Census, nearly 90% of people working in Burpengary-Narangba were dependent on their cars to travel to work, based on single method of travel only.
- Projections of future employment structure were undertaken to provide indicative future employment mixes for the study area. The projections are therefore indicative only. These projections were then translated into land and floorspace requirements which show:
 - A need for up to 14 hectares of industrial land (there is currently approximately 13 hectares of industrial land still available in the estate on McPhail Road which could be able to meet the majority of these requirements when fully developed.)
 - Projections of retail GFA derived from population growth confirm a need for up to a total of 10,000m²; and
 - A need for commercial GFA, up to a total of 8,000m².
- It is likely that there will be an increase in employment in retail trade as this is ostensibly driven by population growth.
- With regard to commercial employment, given the current low level of commercial activities and the relative strength of manufacturing in the study area, there would need to be a catalyst to spark growth in these sectors. Increases in commercial sector employment therefore are dependent upon exogenous growth factors over and above the modest requirements of the local population which are currently being met by existing businesses

- After labour force participation rates and underlying unemployment are taken into account, the number of workers residing in the NELDA is projected to increase by 2,600 to 5,000 workers for a total labour force of between 4,360 and 6,000 workers.

Summary

The NELDAP will need to identify a suitable district centre and local centre to meet the retail and commercial needs of its immediate catchment. A total area of 18,000m² GFA is required for all centre uses. Likely employment opportunities within the centres would include retail, childcare, community services and professional services such as real estate, medical and financial services. The NELDA should also support the establishment of home based business where it is compatible with surrounding residential character.

7.5 Community infrastructure

The key findings are:

- Narangba's existing community is generally supported by a wide range of services and facilities. Based on site observation and anecdotal evidence from community consultations, it appears that Narangba's existing community infrastructure does not adequately cater for the current population.
- Access to community facilities particularly those facilities that are located outside of the NELDA is a challenge due to lack of services and connectivity with public transport.
- Narangba Community Centre is an existing district level community facility. However due to demand, the centre is operating near capacity. Furthermore, consultation commonly highlighted the need for a larger facility or one that incorporates further facilities.
- Further growth within the area will place pressure on existing community facilities and infrastructure and it is anticipated that these services will need to be expanded or upgraded accordingly.
- According to Moreton Bay Council's Desired Standards of Service (DSS) Provisions, and calculated against an additional population of 14,000, NELDA would require:
 - Meeting, program and activity space: Either an additional three to four centres at a local centre scale, or one additional district level facility with a site area of 5,000m² for 400m² Gross Floor Area (GFA).
 - Indoor recreation and sporting facilities Including Youth: Provision of a district level indoor recreation and sporting facility requiring approximately 5,000m² to service the future needs of NELDA's residents.
 - Cultural facilities: space for pursuit of cultural activity, performance and display: There are currently no cultural facilities within NELDA or in the immediate surrounds. The DSS suggests a District level facility would meet the future needs of NELDA's residents. The facility could be located with or outside NELDA.
 - Information centres for tourism, community information or environmental interpretation: A district scale facility should be provided at a minimum according to the DSS with a site area of 1,000m² required. A facility of this kind could provide opportunity for a range of activities, groups and programs that provide representation or support from the local community, to the wider community and visitors.
 - Local volunteer groups providing community support and emergency services (SES, Meals on Wheels): The DSS highlights the need for a district scale facility that would service local volunteer groups that provide community support. A centre of this scale requires approximately 1,000m² within the NELDAP and would also need to be easily accessible and ideally co-located with other community facilities and services.
 - Kindergarten / child care centre: Provision of a further 2 to 4 child care centres within NELDA are recommended each with a minimum space of approximately 1,500 to 2,000m². Locational considerations include co-location with other community facilities, accessibility including being on public transport routes, safety considerations (road speed limits), and compatibility with surrounding land uses.
 - Primary schools – State: Based on future population projections, the NELDAP study area will require planning for a minimum of two primary schools and an addition high school. The findings are subject to State Government priorities.

- Education other (No DSS provided): Community consultation highlighted further current concerns and desires for their community particularly the provision of private education centres/institutions/schooling. Community members also highlighted the desire for opportunities for adult education centres (TAFEs) and tutoring facilities for school and adult education.
- Aged care service / respite centre (No DSS): The SEQRP 2031 Implementation Guidelines describe the standards for Aged Care Service/Respite Centre of two to three local scale facilities for the NELDA.
- Emergency and justice services (Police, Fire and Rescue Station, Ambulance): Future growth and demand will establish the need for further facility provision or upgrades.
- Community health precincts, hubs, centres and services: The capacity, role and model of care for each site is based on detailed local planning and needs analysis, and on the capacity of existing services, both local and regional.
- Places of worship: Community consultation with Narangba residents also suggested a requirement for local churches. It is preferable that these facilities are located at, or near public transport.

Summary

At present, the range of social infrastructure servicing NELDA is limited. However, there is a range of facilities and services available in relatively close proximity providing vital support to future residents. Concentrations of higher order community facilities and services can be found within the Caboolture/Morayfield Principal Regional Activity Centre, 10 kilometres north of NELDA. A full range of critical facilities will therefore need to be provided for through the NELDAP to support the emerging community's health, education, leisure, sporting and emergency services and cultural needs. .

A number of the future services are reliant on State government (schools), and are reliant on service providers and non-profit organisations making a commitment to establish their services within the area. This is expected to occur over time once the NELDA has the population to support these services. New facilities required in the NELDA should generally be grouped together in a central location to reinforce the identity of community foci or neighbourhoods and increase the opportunity for access by public transport.

7.6 Recreational parklands

The key findings are:

- Review of the Caboolture ShirePlan Policy 21 (PSP 21) identifies 12 hectares of existing Recreational Parklands and 4 hectares of future Recreational Parklands within NELDA including:
 - Pitt Road Park – Local recreation park.
 - New Settlement Road Park West – Local recreation park.
 - McCullagh Park – Local recreation park.
 - Palman Place Park – Local recreation park.
 - Ferrier Road Park – District recreation park.
 - GS12 – Future district recreation park.
- The Caboolture ShirePlan Policy 21 – Open Space sets out a desired standard of service for the provision of recreation parks. Table 5 outlines the required provision of recreation park to meet with the Desired Standards of Service (DSS), indicating that a total of 51.8 hectares of recreation park is required.
- Assuming the pure application of the DSS against the forecast population of up to 14,000, there is a shortfall of around 40 hectares of Recreation Parks.

Table 4: Required, Existing and Planned Recreation Parks

Park Hierarchy	DSS per 1,000 persons	Requirement for 14,000 persons	Current Supply	Planned Parks
Local Recreation	1.5ha	21ha	7.2ha	0
District Recreation	1.6ha	22.4ha	4.8ha	4ha
Metropolitan Recreation	0.6ha	8.4ha	0	0
Total Recreation	3.7ha	51.8ha	12ha	4ha

- The Caboolture ShirePlan Policy 21 – Open Space sets out a desired standard of service for the provision of Sport Parks. Table 6 outlines the required provision of Sport Parks to meet with the DSS, indicating that a total of 30.8 hectares of Sport Park is required. Review of the PSP 21 highlights that while there are presently no Sport Parks currently available within NELDA; albeit a 10 hectares District Sport Park has been indicatively planned immediately adjoining the study area. It is noted that NELDA falls within the catchment areas of other Sport Parks surrounding NELDA.

Table 5: Required, Existing and Planned Sport Parks

Park Hierarchy	DSS per 1,000 persons	Requirement for 14,000 persons	Current Supply	Planned Parks
District Sport	1.6ha	22.4ha	0	10ha
Metropolitan Sport	0.6ha	8.4ha	0	0
Total Sport	2.2ha	30.8ha	0	0

Note: Excludes existing Sports Park in close proximity to NELDA

Summary

Existing parks in NELDA are currently in limited supply. Table 5 and Table 6 outline the forecast park requirements for future development in NELDA. The NELDA's future urban communities will need to be supported by a well designed and accessible network of public open spaces. Proposed parks in the NELDA will be identifiable as community activity nodes with formal and informal recreation areas. Parks will incorporate facilities that match their intended function, hierarchy and setting. The NELDA proposes a complete green space network responding to the future community's amenity and recreational needs. It is proposed that NELDA's parks be located within this green space network.

7.7 Ecology

The key findings are:

Flora and remnant vegetation

- There are four remnant and non-remnant vegetation communities located within the NELDA (Figure 33). These include the following (noting their status according to the Vegetation Management Act 1999):
 - 12.3.5: Open forest located within two riparian corridors along Little Burpengary Creek (VMA status: least concern).
 - 12.3.6: Woodlands located within riparian corridors along the three minor waterways through the central and southern portion of NELDA (VMA status: least concern).
 - 12.5.3: Open forest sporadically as located throughout NELDA including adjacent to Little Burpengary Creek and as isolated nodes around McPhail Road (VMA status: endangered).
 - 12.9-10.4: Woodland located throughout NELDA with some nodes of significant size and density (VMA status: least concern).
 - The DERM regrowth vegetation identifies patches of regrowth vegetation along the boundaries of the subject site.
 - During field investigation, no EVR (Endangered, Vulnerable, Rare) flora species were detected. However some EVR species may have potential to occur within the subject site.

Fauna (habitat)

- Three EVR species were detected during the field investigation: the Wallum Froglet *Crinia tinnula*, the Grey Goshawk *Accipiter novaehollandiae* and the Koala *Phascolarctos cinereus*. However, other EVR fauna species have the potential to occur on site.

- Essentially, the retention of fauna (as well as the retention of flora) will provide the basis for a network of wildlife corridors.
- Further issues pertaining to the conservation of EVR species e.g. koala, and the identification of wildlife corridors are identified below.

Wildlife corridors and links outside of NELDA

- The width of movement corridors should be determined by the type of the extent of native vegetation, potential edge effects, the nature of the surrounding matrix, and the species for which it is intended.
- Nine areas are identified as existing key koala access points linking the subject site with surrounding habitats (Figure 34).
- Koala movement in those areas should be secured to ensure safe Koala (and other fauna) movement.
- Some movement corridors are problematic, notably across the highway to the East (access points 1, 2 and 3) and across the railway line to the West (access points 6 and 9). At access point 2, the access point is critical since there is an existing culvert under the highway, linking the subject site with the forest patches to the east. In the areas of access points 7 and 8, it should be ensured that any fencing is Koala-friendly. At access points 4 and 5, Koala-friendly fencing should also be used if fencing is to occur and road signs should be erected to ensure drivers are aware of koalas crossing Boundary Road.

Koala habitat and movement

- Recent research in Moreton Bay Regional Council highlighted the importance of the urban koala population to the long-term survival of bushland koala populations on land outside of the Urban Footprint.
- As a response to the serious threat posed to koala populations in SEQ, the Department of Environment and Natural Resource Management (DERM) adopted the State Planning Policy (2/10): Koala Conservation in South East Queensland (SPP) and the SEQ Koala Conservation State Planning Regulatory Provisions (SPRP). These planning instruments are intended to protect identified koala habitat and manage conflicts with urban development through planning processes and assessments within the SEQ Koala Protection Area (includes Moreton Bay Regional Council). The SPP requires that local planning instruments, including the NELDAP and Caboolture ShirePlan amendments, achieve the policy intent by:
 - Including planning strategies and measures aimed at minimising the impacts of new development on koalas and koala habitat;
 - Retaining and protecting significant areas of koala habitat value and habitat connectivity;
 - Maximising koala safety and movement through the appropriate design and layout of development; and
 - Contributing to a net increase in koala habitat through the use of environmental offsets and other mechanisms.
- The spatial extent of high, medium and low koala habitat values within the NELDA identifies areas of high and medium koala values along the Hays Inlet Corridor, on large freehold property west of Hays Inlet, along a drainage line parallel to Boundary Road and at the northern end of NELDA itself (Figure 34).
- It is also important to note that most of the balance of the NELDA has been identified as having rehabilitation value for koalas. The NELDAP requires development to avoid the loss of koala habitat trees in these areas and where not possible requires off-set planting at a rate of five trees for every individual tree removed.
- Supplementary habitat in the north-east of the NELDA supports important feeding resources and habitat for koalas, and in the context of koala survival, must be afforded the highest protection. This area should also be considered for inclusion within the high, medium or low value bushland categories of the State koala habitat values mapping.
- Very high koala habitat values were found in vegetation west of Burpengary Road, a large area bordering the southern boundary of the subject site and in three patches in the central northern portion of the subject site.

- Three of the key koala access points identified by this assessment (i.e. points within the subject site that adjoin habitat outside of the subject site) occur directly adjacent to high value koala habitats.
- Most of the “High” value koala habitat is located within the centre and along the northern boundary of the subject site.
- Medium koala habitat values were found across the site. These areas comprise cleared and/or residential areas that support medium to low density koala food trees. However, the koala food trees that are present are generally large, mature specimens that provide good food resources and show signs of regular koala visitation.
- Low koala habitat values were found scattered across the subject site. These correspond to the most highly developed areas. As a consequence, these areas support low or no koala food trees. With adequate management, some of these areas have potential to be upgraded to a higher value.
- These patches should be adequately managed so as to maintain and/or secure their value for koalas.
- This can be achieved in a variety of ways including effective weed control, covenants including tree protection within building envelopes and the creation of safe linkages between isolated patches of very high value.
- The overall extent of very high value within the subject site should not be diminished, and any clearing of such habitat should be offset within the subject site in a way that maximises connectivity and results in a net benefit for the local koala population.
- In accordance with the SEQ Koala State Planning Regulatory Provisions (SPRP) and State Planning Policy SPP, steps must be undertaken to ensure koala conservation.

Endangered and vulnerable species

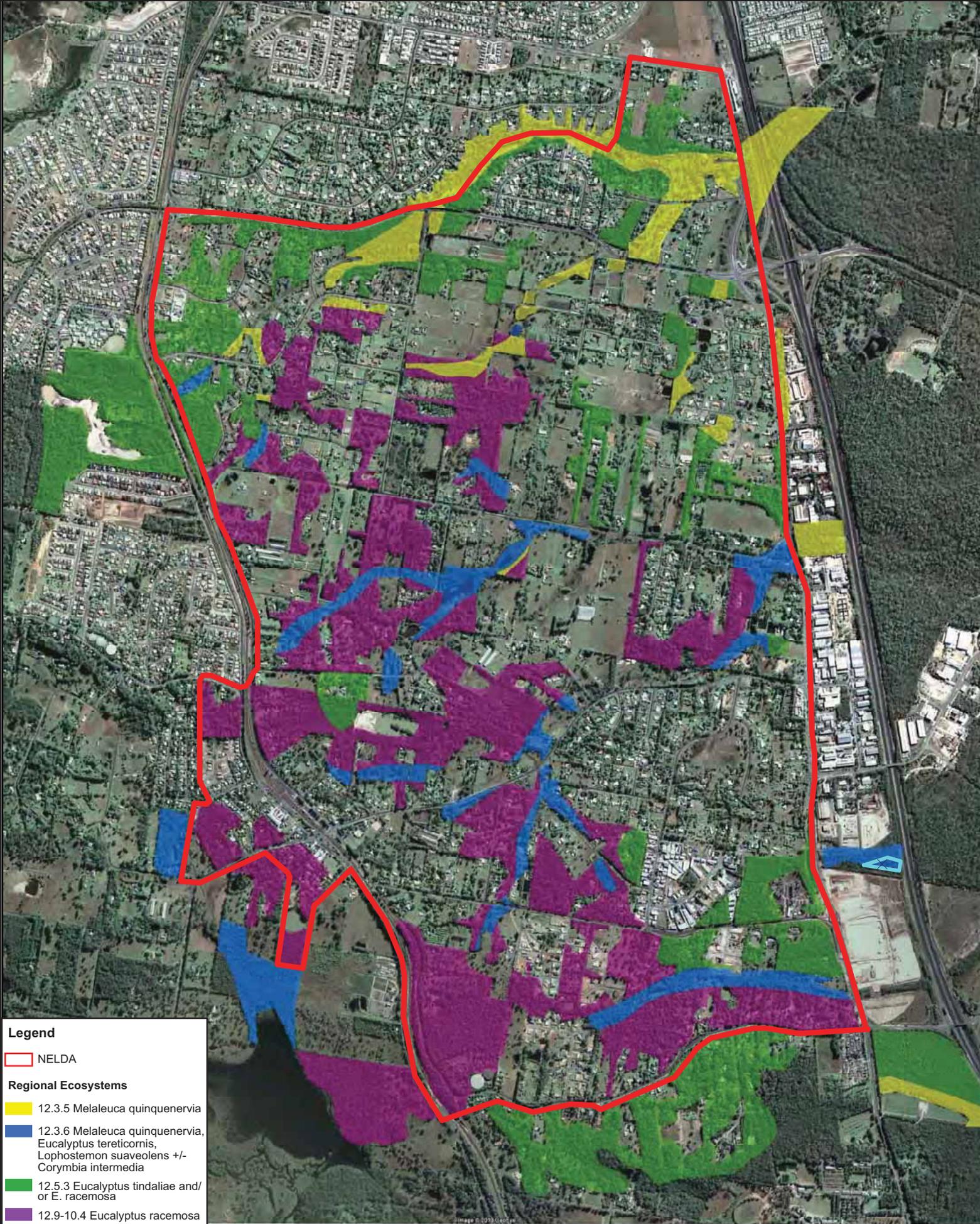
- Three EVR species were detected during the field investigation: the Wallum Froglet *Crinia tinnula*, the Grey Goshawk *Accipiter novaehollandiae* and the Koala *Phascolarctos cinereus*. Koala issues are addressed above.
- Within the subject site, REs 12.3.5 and 12.3.6 have been identified by DERM as Essential Habitat for Wallum Froglet. However, the species is unlikely to be restricted to these habitats within the subject site. During the field survey, this species was detected in a drainage line along Callaghan Road towards the eastern boundary of the subject site.
- The Grey Goshawk occurs in a variety of habitats. No nests were sighted during the field assessment, although all remnant areas were not accessed. The species is likely to utilise vegetation patches throughout the subject site for foraging purposes, with remnant vegetation likely to support the only nesting opportunities.

Waterways and wetlands

- The NELDAP study area has a network of Catchment Protection Minor Waterways within Caboolture ShirePlan’s Overlay Map CO3 Catchment Protection (see Appendix 2: Caboolture ShirePlan Overlay Maps).
- Narangba East contains five discreet minor waterway systems. While each of the five waterways generally drains in an easterly direction, they are only subject to periodic flow associated with rainfall events and do not permanently retain or convey water.
- The headwaters of Little Burpengary Creek in the site’s northern most catchment drain through Freshwater National Park to eventually discharge into Burpengary Creek and onto Moreton Bay. The forked central catchment and the southernmost catchment all drain into the headwaters of Lagoon Creek which discharges into Saltwater Creek, then the Hays Inlet and eventually into Moreton Bay.

Summary

The NELDAP recognises identified bushland habitat and enhancement areas, primary and secondary habitat corridors and linkages, koala habitats, bushfire hazard, waterways and flood prone land as environmental values and physical constraints that need to be maintained free from encroachment of urban development. The NELDAP responds to these environmental values and constraints by predominantly including these areas within the proposed green space network.



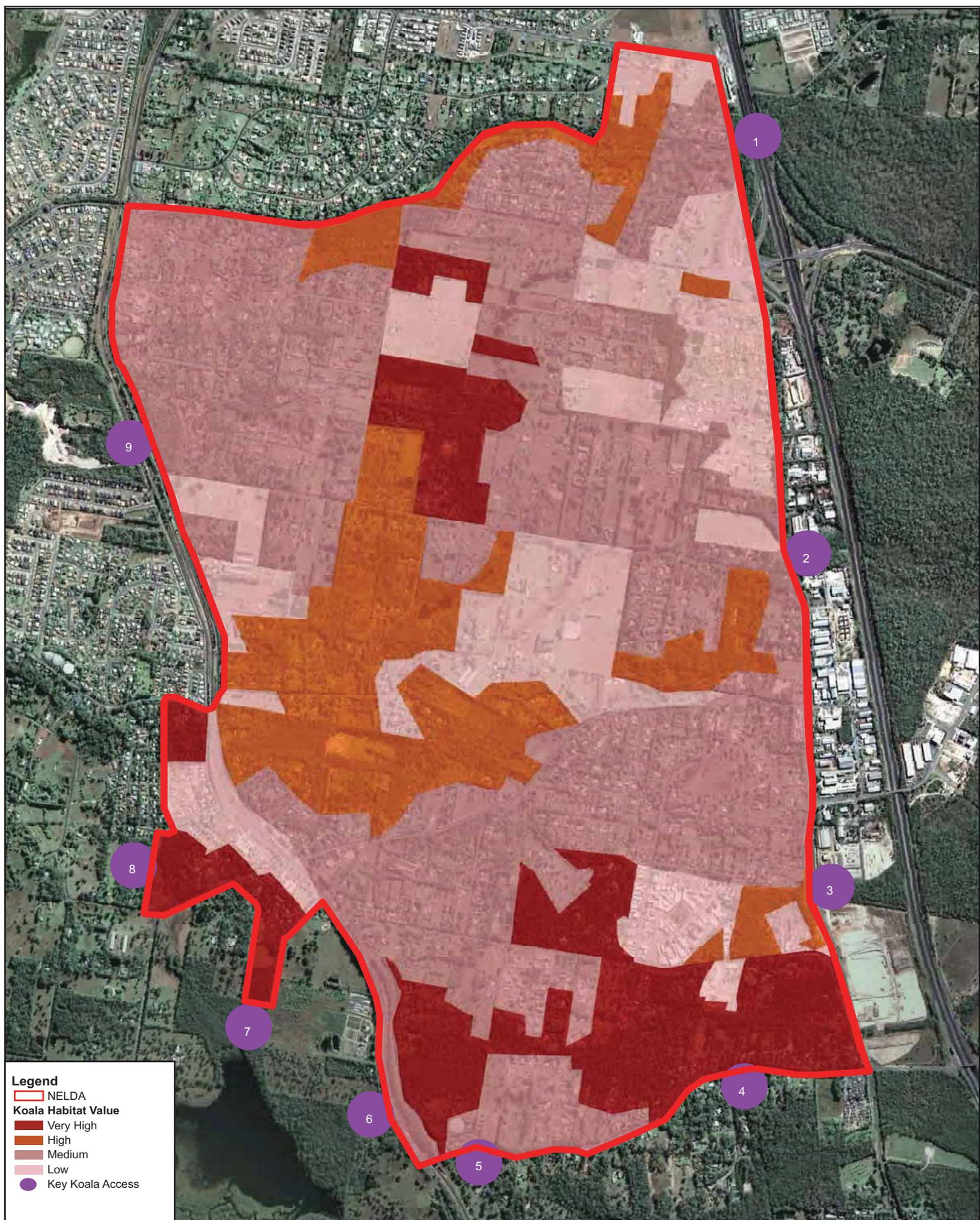
Legend

NELDA

Regional Ecosystems

- 12.3.5 *Melaleuca quinquenervia*
- 12.3.6 *Melaleuca quinquenervia*,
Eucalyptus tereticornis,
Lophostemon suaveolens +/-
Corymbia intermedia
- 12.5.3 *Eucalyptus tindaliae* and/
or *E. racemosa*
- 12.9-10.4 *Eucalyptus racemosa*

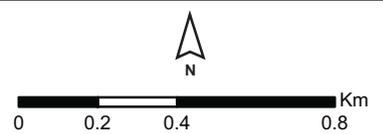
Figure 33
NELDA
Vegetation Communities



Legend

- NELDA
- Koala Habitat Value**
- Very High
- High
- Medium
- Low
- Key Koala Access

Figure 34
NELDA
Koala Habitat Values and
Key Koala Access



VERSION: 3
 LAST MODIFIED: 09/05/2011

7.8 Traffic and transport

The key findings are:

- Narangba Rail Station is the primary mode of public transport utilised by residents of NELDA.
- The Narangba Rail Station is primarily accessed by private motor vehicles.
- The existing bus services through NELDA are limited.
- The existing signalised at-grade railway crossing in Mackie Road near the Narangba Rail Station is becoming increasingly congested as traffic volumes and train service frequency increase.
- The NELDA has an immature road hierarchy and layout.
- Through traffic is funnelled through the Mackie Road rail crossing and the Narangba Shopping Centre.
- Quarry traffic west of NELDA use the Mackie Road rail crossing to gain access to the east. A hard rock haulage corridor has been identified across the south of NELDA.
- The existing park-n-ride facilities at the Narangba Rail Station are well patronised with parking spilling into surrounding streets.
- There is limited cycle and pedestrian pathways in NELDA making it difficult for local residents to walk/ride to the Narangba Rail Station.
- The compact size of the suburb and the location of commercial and community activities provide an excellent opportunity for more sustainable transit and active transport.
- The linking of the residential areas to the railway station, centres, schools and other community facilities will be extremely important.
- The existing local centre is currently well serviced by parking although it is not well arranged.
- Opportunities to improve traffic congestion issues at key sites such as the Mackie Road level crossing and around the centre is a priority for NELDAP.

Summary

It is intended the NELDAP provides a road hierarchy designed in a general grid layout to provide a high level of legibility and permeability throughout the NELDA. The road network should attempt to have through traffic and quarry trucks bypass the Narangba shopping centre as well as eliminate the at-grade crossing of the railway at Mackie Road. Where applicable the internal road network should be designed to provide an edge / esplanade treatment between future residential development and the planned green space network.

Throughout the planning for NELDA, convenience of access is recognised as a key strategy to increasing public transport patronage. Generally it is desirable that land use and public transport planning be integrated so that future residential development is within a 400m walking catchment of an existing or planned public transport route. The NELDAP will provide opportunity for TransLink to plan a new local bus service through the area using the upgraded road network. Such a bus service would capture a high percentage of all future residential development within a 400m walking catchment providing the critical mass necessary to support frequent services.

A network of on and off road pathways should connect the broader active transport network. This active transport network will provide an attractive alternate to driving to the Narangba Rail Station, Narangba District Centre, community facilities, and local parks planned within the NELDA. Pathways should be provided along all roads as well as within the green space network.

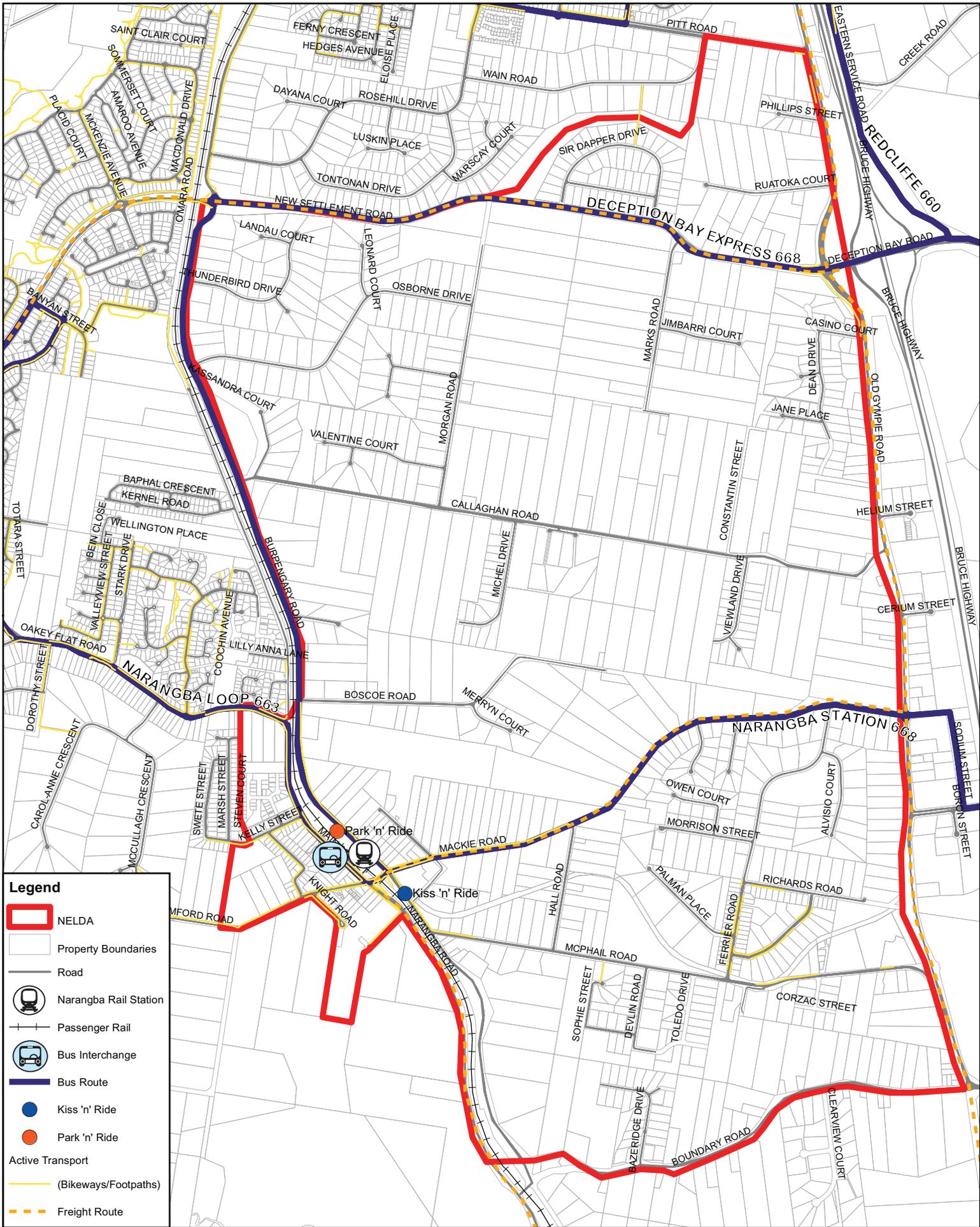
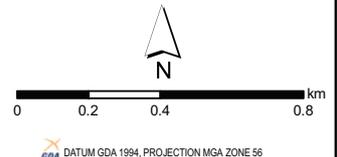


Figure 35
 NELDA Existing Public Transport,
 Active Transport and
 Freight Network



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VERSION : 1
 LAST MODIFIED : 01/04/2011

7.9 Water supply

The key findings are:

Existing water supply trunk main network

- The existing water supply trunk main network within and around the NELDA is shown in Figure 36.
- Bulk water to Narangba is provided by the Northern Pipeline Interconnector. Bulk water storages are provided at Oakey Flat Road (three reservoirs) and Boundary Road (two reservoirs). Given that the system has recently been upgraded, bulk water supply to the Narangba storage reservoirs is unlikely to be a constraint to development.
- The existing HLZ pump station and elevated storage reservoir is close to operating at full capacity. Additional upgrades may be required if medium/high density development is to occur in the elevated areas of NELDA. Key features of the network are:
 - Water is supplied to the NELDA from the Oakey Flat Road storage reservoirs;
 - Southern Burpengary Road main - servicing Narangba Rail Station (east), Mackie Road and McPhail Road;
 - Northern Burpengary Road main - servicing Callaghan Road and continuing through to Burpengary;
 - Two west to east trunk mains through to Old Gympie Road via Mackie Road and Callaghan Road;
 - Eastern boundary main in Old Gympie Road from Mackie Road north to Burpengary;
 - HLZ pump station and 375 KL elevated storage at Oakey Flat Road reservoir site; and
 - High Level Zone (HLZ) servicing Narangba Rail Station west area.
- The Narangba Industrial Estate has a trunk network serviced from Deception Bay. Although there is an interconnection at Callaghan Road, this system is not as capable of servicing the NELDA.
- A trunk main system also extends south of the Boundary Road reservoir to supply the Dakabin/Kallangur area. The existing trunk mains are not suitable to service the NELDA.

Existing areas serviced by reticulated water supply

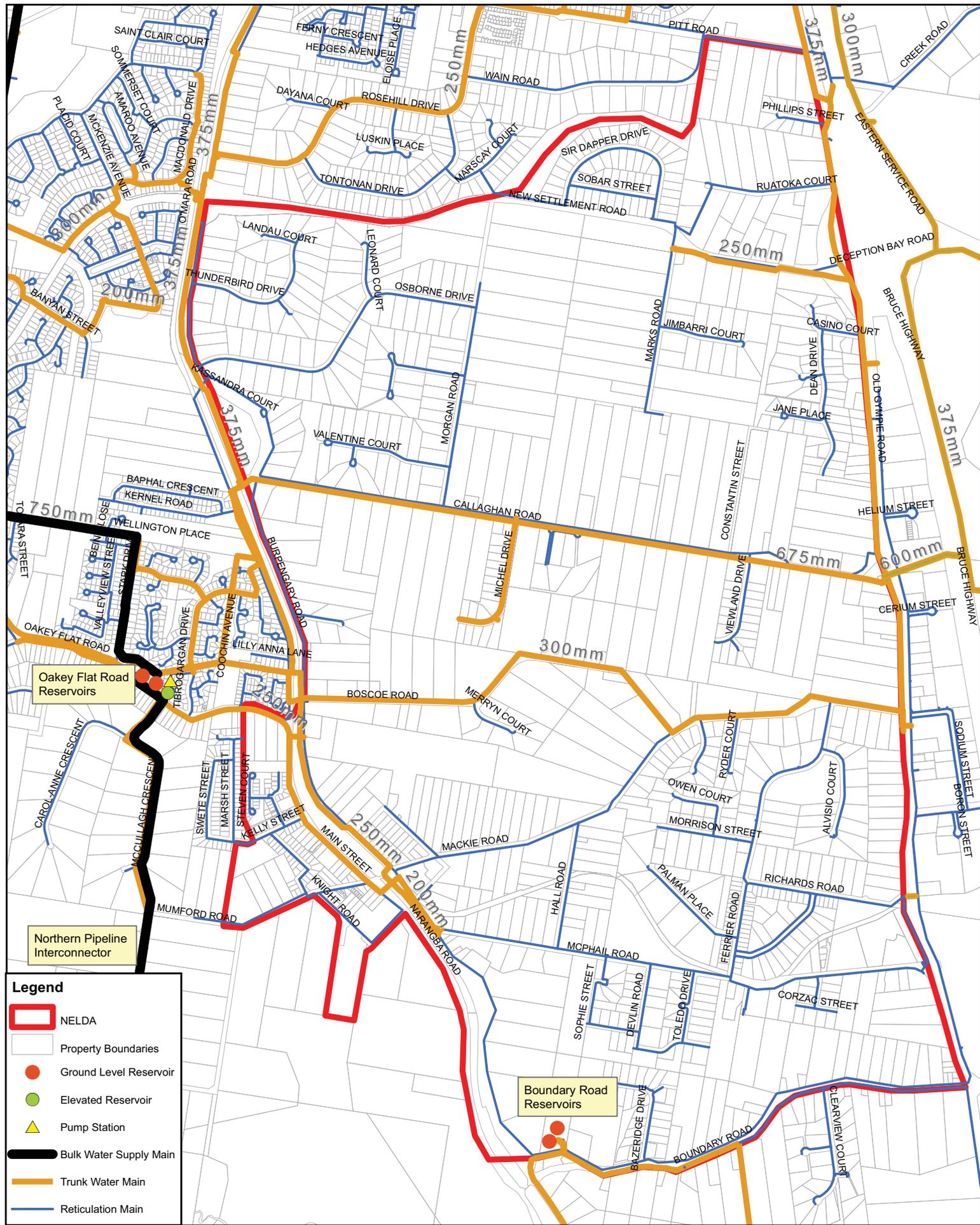
Areas currently serviced by reticulated water supply are shown in Figure 36.

- Urban residential: The urban level water supply reticulation network is restricted to the areas immediately adjacent to the Narangba Rail Station. This area is serviced from the Narangba High Level Zone (HLZ).
- Rural residential: The majority of the NELDA is serviced by a rural residential level water supply network. This network is supplied from the Oakey Flat Road ground level reservoirs. This system is unlikely to be suitable for accommodating urban residential development activities and would require significant augmentation.
- Industrial: The NELDA includes a number of serviced industrial estates, e.g. Old Gympie Road and Ferrier Road.

Summary

NELDA has access to a reticulated water supply. However, the existing potable water network within NELDA does not have the capacity to support the growth envisioned by this plan. This network will therefore need to be augmented to support the future development of this area. Future urban development in NELDA will need to be supported with a sequenced rollout of new water mains, storage facilities and pumping facilities to meet the increased demand.

To support regional water consumption targets, all development will be required to include measures that reduce overall water use, utilise alternative water sources to potable water for some applications, minimise wastewater and incorporate water reuse infrastructure to maximise recycling opportunity.



Legend

- NELDA
- Property Boundaries
- Ground Level Reservoir
- Elevated Reservoir
- ▲ Pump Station
- Bulk Water Supply Main
- Trunk Water Main
- Reticulation Main



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Figure 36
NELDA Existing
Water Supply Network

VERSION : 1
 LAST MODIFIED: 01/04/2011

7.10 Sewerage drainage catchments

The key findings are:

- The majority of the NELDA (around 95%), is not currently serviced by sewer reticulation. Any level of urban development within NELDA will trigger the need for new sewer reticulation and trunk mains.
- Over 90% of the NELDA drains to the east – from the rail line/Burpengary Road to Old Gympie Road and the highway. The NELDA drains into two major catchments:
 - North: Little Burpengary Creek (Catchment B – Figure 37).
 - South: Hays Creek Catchment (Catchments C, D, E and F – Figure 37).

Three small areas within the NELDA drain to adjoining catchments:

- Areas A and H drain north into the Burpengary Creek Catchment.
- Area G in the south west corner on the western side of the rail line drains south into the North Pine River Catchment.

Existing trunk sewerage network

- The bulk of the mainland sewerage areas of the old Caboolture Shire (Narangba to Elimbah) drain to two arms of the Caboolture River Catchment:
 - North area – Caboolture River Catchment – Caboolture STP.
 - South area – Burpengary Creek Catchment – Burpengary East STP.
- The existing Narangba West and Burpengary sewer reticulation areas are pumped by a series of rising mains to the Burpengary East STP. The existing Narangba Industrial Estate east of the Highway is also pumped to the Burpengary East STP. The existing Burpengary East STP has a design capacity of 36,000 EPS. Current augmentation works will increase the plant capacity to 50,000 EPS by 2012.
- The existing trunk sewer, pump station and rising mains connecting the Narangba area to the Burpengary East STP are shown in Figure 37. There are no existing sewer trunk systems within the NELDA except for those servicing Areas A and B adjacent to the Narangba Rail Station.

Existing sewerage areas

- Narangba West: The Narangba West system is at or near capacity and is not able to take additional loads from the Narangba East site:
 - The Narangba West system drains north to Burpengary Creek near the Narangba Sporting Complex.
 - Parts of the Narangba West sewer system are within catchments that drain through the NELDA. These are shown as areas C and D in Figure 37. Both areas are currently pumped into the Narangba West system via small pump stations and rising mains.
 - There are two areas within the NELDA currently connected to the Narangba West sewerage system via pumping stations: a small area west of the rail line and south of Oakey Flat Road, and a small 3 block area east of the rail station that is pumped across the rail line into the Narangba west system.
 - Future plans for Narangba include provision for extending reticulated sewer services to the existing urban zoned lands east of the rail station, generally between Mackie Road, Hall Road and McPhail Road, and developing a new gravity and rising main system along Mackie Road.
- Burpengary: The Burpengary sewer reticulation network drains north-east to Burpengary Creek. A pump station near Station Road pumps flows east to the Burpengary East STP. However, the system is not well located to service the NELDA.
- Narangba Industrial Estate: The major sewerage scheme to the east of the site is the Narangba Industrial Estate system to the east of the Highway. An option for servicing the NELDA is to pump flows across to this system and to upgrade the existing pump station and rising main north to the Burpengary East STP.

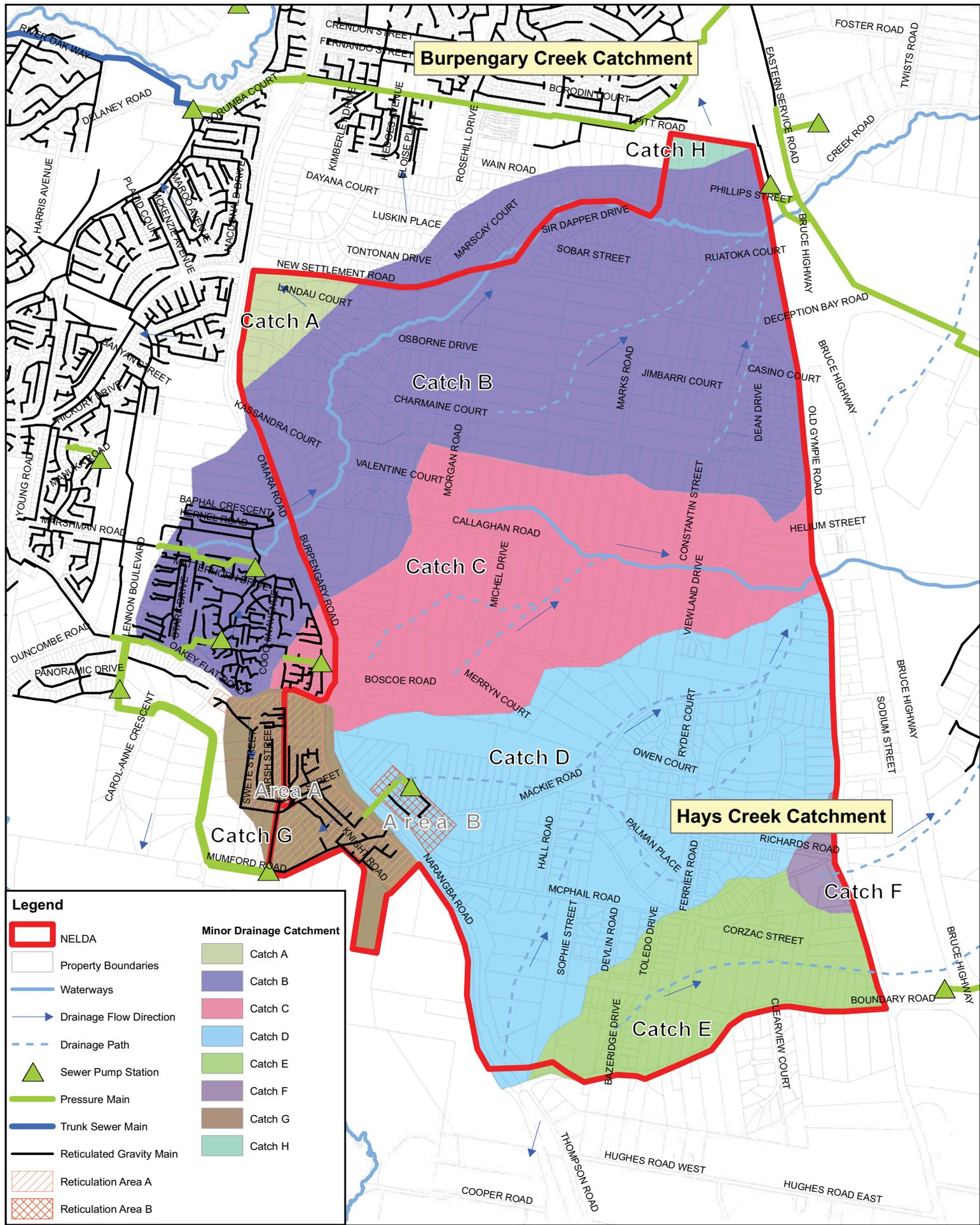
Summary

Future urban development in NELDA will need to be supported with a sequenced rollout of a trunk and reticulation sewer network including pumping facilities to cater for the increased volume of wastewater.

Note that the overall capacity of the wastewater network in Moreton Bay Regional Council is an issue of investigation and analysis by Unitywater.

To implement the TWCM Strategy Moreton Bay Regional Council is currently preparing a TWCM Detail Plan, where the solutions identified in the strategy are being assessed in detail through modelling, for their practicability and feasibility. As a part of the TWCM Detail Plan, the water quality of the Caboolture River and Moreton Bay Water will be assessed. This study will determine the amount of total nutrients that can safely and responsibly be discharged to Caboolture River and Moreton Bay in accordance with DERM licensing. Consequently, the findings of this study will provide Unitywater the upper EP that can be serviced by Burpengary East Sewerage Treatment Plant. The detail plan will also identify stormwater treatment opportunities such as water sensitive urban design and stormwater harvesting.

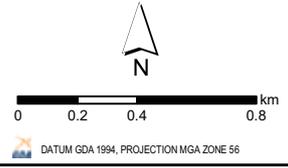
However, Unitywater will be able to utilise the NELDAP in undertaking planning for future augmentation of the water supply and sewerage system to service the new population.



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Figure 37
NELDA Existing Sewer
Reticulation Areas



VERSION : 1
 LAST MODIFIED: 01/04/2011

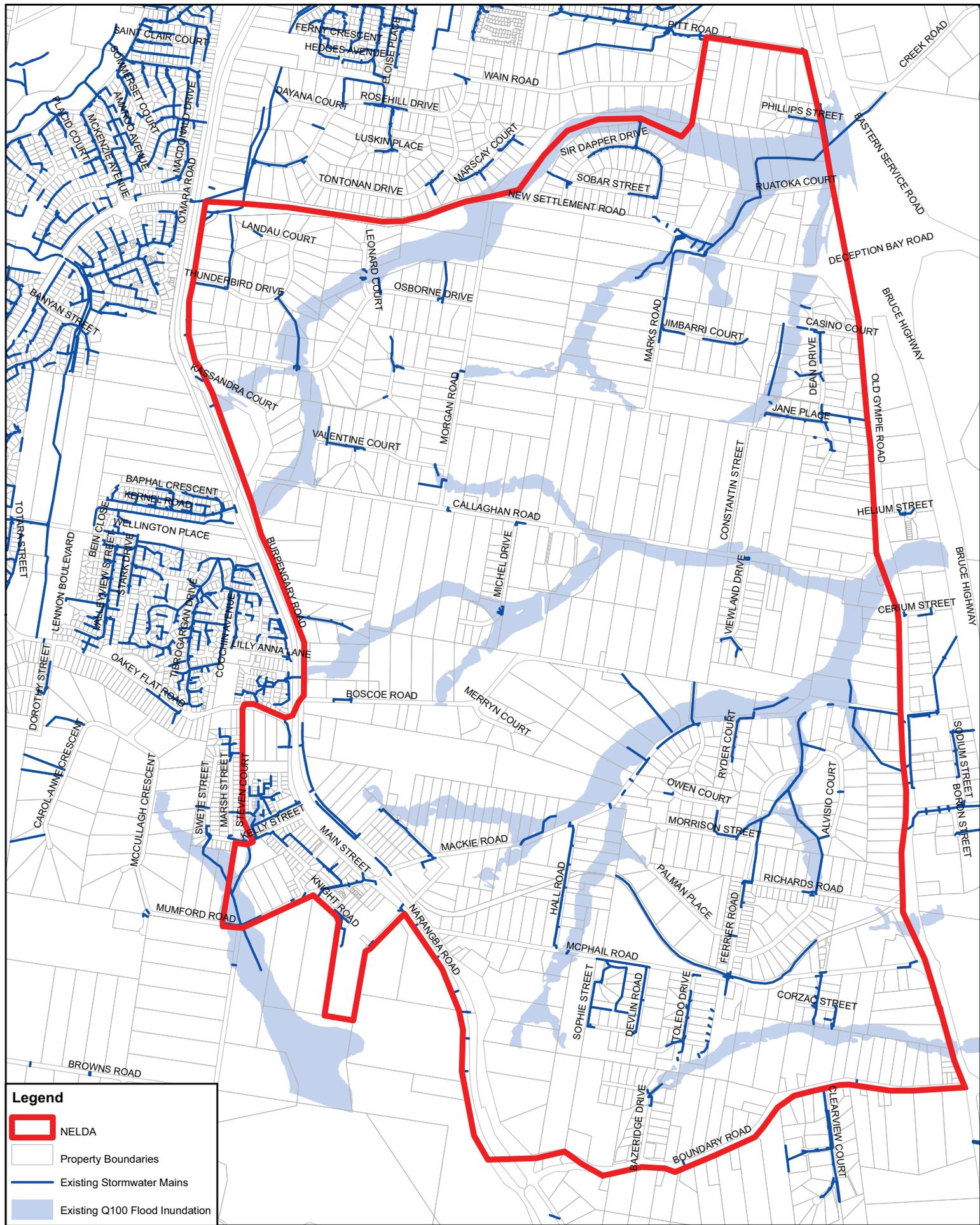
7.11 Stormwater and flooding

The key findings are:

- The NELDA is represented by approximately five discreet minor waterway systems that form primarily into three systems.
- Drainage through the NELDA is typically via open drainage channels. There are numerous road crossings (Old Gympie Road and Bruce Highway are the two major crossings) within the drainage channels.
- The design response to NELDA will be to manage stormwater flows from future development in a manner that protects life, property and the natural environment, and does not deteriorate existing flood conditions, in a 100 year Average Recurrence Interval (ARI) flood event.
- The design response to drainage will be to retain natural waterways, wetlands and riparian corridors and reinforce it where necessary.
- It will be important for each development to accept responsibility for ensuring the quantum and quality of stormwater runoff does not adversely impact on downstream properties or the overall health of the receiving waterway.
- Potentially, easements in favour of Council are the preferred implementation response, rather than Council acquiring freehold title.
- Not all waterways are to be retained in private ownership as this will restrict Council using the waterways for public uses such as cycleways and other recreational uses.
- Where easements are taken, it will necessitate standards being imposed on 'reconfiguring a lot' developments to ensure ongoing maintenance of the waterways.

Summary

The NELDA existing waterways and drainage lines will function as priority stormwater conveyance infrastructure managing stormwater discharges from future urban development. Before stormwater enters these natural waterways and drainage lines, it will need to pass through a planned treatment train which will decrease velocities to pre-development flows, and reduce water borne pollutant loads. Future planning of NELDA will have regard to the stormwater design objectives set out in the SEQRP 2009-2031 Implementation Guideline No.7 Water Sensitive Urban Design.



Legend

- NELDA
- Property Boundaries
- Existing Stormwater Mains
- Existing Q100 Flood Inundation



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Figure 38
**NELDA Existing Stormwater Mains,
 Waterways and Q100 Flood Inundation**

DATUM GDA 1994, PROJECTION MGA ZONE 56

VERSION : 1
 LAST MODIFIED: 01/04/2011

7.12 Electricity and telecommunications

The key issues are:

Energy

- All existing development within NELDA is serviced with above ground ENERGEX powerlines.
- No high voltage transmission upgrades to energy infrastructure are expected to be required as the area can continue to be serviced by 33kV and 11kV powerlines.
- The establishment of a new community within NELDA will require significant investment in electricity augmentation including new substation sites.

Telecommunications

- All existing developments in the NELDA have access to a basic copper wire telecommunications network. This existing system is generally limited in its capacity to provide high speed, high quality telecommunications services. The capacity of the existing telecommunications network will need to be significantly upgraded to support education and district centre activities that are planned for the NELDA. This upgrade of the telecommunications network will need to be coordinated with the development process to ensure that a high standard of telecommunications technology is available early in the NELDA development.
- Mobile phone coverage is available throughout the NELDA. Presently there are towers providing services to established residential communities; however this coverage will need to be expanded to support future development. Engagement with service providers will need to be initiated to improve mobile coverage to NELDA.
- In April 2009, the Federal Government announced its plans to deliver a National Broadband Network, which aims to connect 90% of all Australian homes, schools and workplaces with broadband services with speeds up to 100 megabits per second. The Federal Government has stated that from 1 July 2010 all new estate developments will be required to install fibre optic networks to homes and workplaces. This will have implications for the future development of NELDA.

Summary

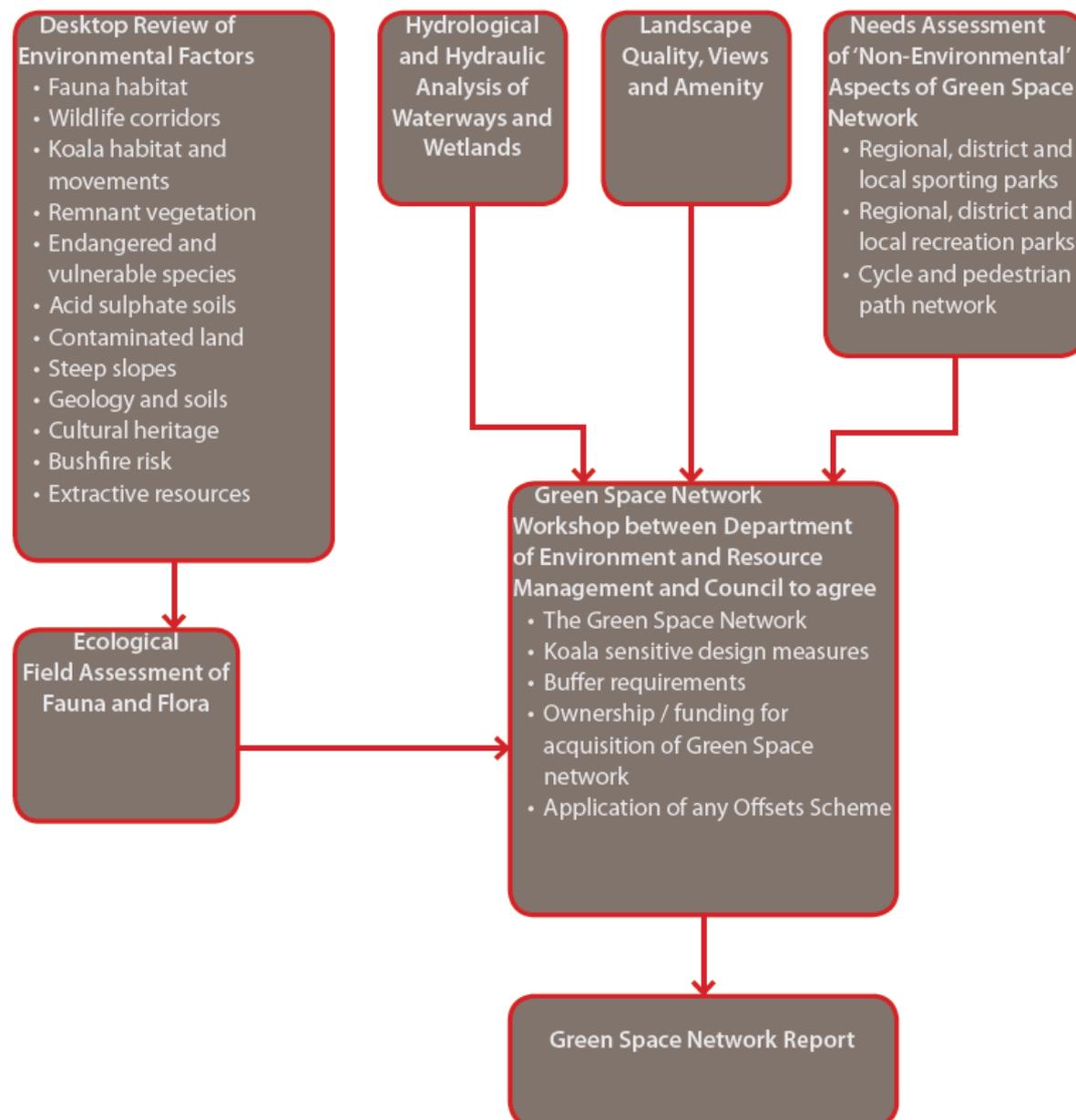
All existing development within NELDA is serviced with above ground ENERGEX powerlines. However, the network would need to be upgraded to support intensive urban development in NELDA. Sites required for new energy infrastructure including substations will need to be identified as part of future planning.

All existing developments in NELDA have access to a basic copper wire telecommunications network. This existing system is generally limited in its capacity to provide high speed, high quality telecommunications services. The capacity of the existing telecommunications network will need to be significantly upgraded to support new population and development.

7.13 Development of the green space network

A green space network was developed and presented to an Options Workshop held at Moreton Bay Regional Council on Wednesday 23 June 2010. Officers and Councillors from Moreton Bay Regional Council, Queensland Department of Environmental and Resource Management, and PSA Consulting attended. The methodology used by PSA Consulting to develop the green space network is shown in Figure 39.

Figure 39: Green Space Network Methodology



A common 'preferred' green space network has been prepared for NELDA to underpin each of the land use options. The green space network:

- Responds to areas with significant environmental values including habitat corridors, significant flora and fauna, significant regional ecosystems, koala habitat, natural waterways and flood prone land.
- Strategically includes some properties which are intended to be rehabilitated to enhance their ecological value.

-
- Is linear in nature, linking residential communities within NELDA to sport and recreation parks, centres and community facilities through the extension of off-road cycle and pedestrian pathways. Developing such a network of off-road pathways will greatly enhance opportunity for outdoor recreation and active transportation through NELDA.
 - Provides buffers between incompatible land uses and important urban breaks. This helps to characterise new neighbourhoods, increase visual amenity and create a sense of place.
 - Protects waterways, creeks and flood affected land, ensuring a sustainable and integrated approach to urban water management.
 - Provides for both public and private ownership. Land in private ownership will be comprised of larger lot rural residential areas which maintain significant areas of habitat.
 - Enhances links to environmental values outside Narangba East including Moreton Bay and Hays Inlet.

7.14 State Planning Policy 5/10: Air, Noise and Hazardous Materials 2010

This is defined by the State Planning Policy 5/10: Air, Noise and Hazardous Materials 2010 (developed by the Department of Environment and Resource Management). The “trigger for further investigation” area provides a benchmark of 1,500 metres in which further planning investigations are required regarding the location of zones for a sensitive use (i.e. residential uses, schools etc).

The ultimate outcome of the SPP is not to prohibit or mandate one form of development over another, but to ensure that the final NELDA encourages a compatible interface between ‘future industry’ (be it low, medium or high impact), and the nearest ‘zone for sensitive uses’. The SPP is deliberately written to encourage flexibility and creativity in seeking to achieve the policy outcome. Further information on the SPP 05/11 is provided within Appendix 3.

Summary

NELDA contains significant natural values which not only provide for fauna habitat, but also sets the scene for a semi –rural lifestyle enjoyed by many of NELDA’S existing residents. The setting aside of these areas as part of an extensive green space network will ensure that NELDAP not only retains its semi rural amenity, but important fauna and wildlife corridors are also retained. The designation of the eastern portion of NELDA as “trigger for further investigation” will ensure that impacts of the Narangba Industrial Estate are contained.

8. Stakeholder consultation

As outlined in “project methodology” community and agency consultation played an important role in the development of NELDAP. It was recognised early in the NELDAP project that the planning process has the potential to generate many issues from concerned landowners, residents, businesses, developers, special interest groups and the general community. Similarly, the concerns and input of State agencies was also very important to Moreton Bay Regional Council and the project team. The NELDAP process employed a number of engagement measures to ensure:

- The community, key stakeholders, and agencies were aware of the project;
- The community, key stakeholders, and agencies had opportunity to shape the project; and
- The Draft NELDAP was consistent with the community, key stakeholder and agency values and expectations.

Two intensive community consultation exercises were undertaken during the development of the NELDAP:

- A community expectations workshop, held on 16 April 2010 to gain an insight into the community and stakeholder’s vision for the future development of the NELDAP; and
- Display of conceptual land use options, held between 15 November and Friday 10 December 2010 to gauge the community’s feedback on potential land use options for the NELDAP.

These sessions involved static displays, information sessions, and one-on-one meetings with residents. They were supported with newsletters, posters, newspaper advertisements, a telephone hotline and a project specific webpage.

8.1 Community expectations workshop 16 April 2010

This workshop involved a presentation and an open floor discussion, where the public was able to engage with the project team to express their thoughts and expectations for future land uses, community facilities and infrastructure for NELDAP. Over 300 people attended the workshop.

Static displays, providing information about the project, were installed at the Narangba shopping centre, Moreton Bay Regional Council offices, and the Narangba library. Furthermore, Moreton Bay Regional Council’s website included a project specific webpage that provided information about the planning process. Throughout this stage of community consultation:

- Project Newsletter # 1 was issued;
- The project contact list was established; and
- The issues register was established.

The community was provided with the opportunity to prepare written submissions regarding the development of the NELDAP. 47 submissions were received by Council/PSA Consulting. Additionally, a variety of comments were recorded on the night of the workshop. This important information was utilised by the project team and Council in the investigations for NELDAP. All submissions were analysed by the project team, and the suggestions put forward through the submissions were recorded in the database. Various categories of key issues were identified, as outlined in the following summary of issues.

Appropriate levels of community infrastructure:

- Increased and improved provision of community infrastructure including: education, youth services, health services and facilities, aged accommodation, emergency services, churches, cultural/community facilities and indoor sport and recreation.

Parks and open space:

- Further sporting fields to encourage more sporting clubs, including sports facilities for women, improved parks and facilities, allocation of an area for horses and horse riding, and a swimming pool.

Natural environment:

- Protection of waterway corridors and the need for rehabilitation to improve conditions for native habitat and bird-life.
- Protection of areas of significance including remaining areas of bushland and bushland that could be set aside as corridors.
- Protection of koalas and their food trees.

Infrastructure:

- Improved road, power, water, and sewerage infrastructure.

Public transport:

- Enhanced public transport options through the provision of bus services that provide improved connectivity and frequency.
- Need for increased frequency of rail services.
- Need to provide an additional railway station, built between Narangba and Burpengary at the existing rail reserve between Callaghan Road and Osborne Roads.

Active transport:

- Provision of a safe walking/bike path network that will create a walkable community.

Parking:

- Increased parking, surrounding the Narangba Rail Station, shops and library.
- More park-and-ride at the Narangba Rail Station.

Housing density:

- Mix of low rise housing, and a mix of housing density and housing choice.
- Higher densities should not occur close to industrial areas.
- Need to maintain rural residential character.

Housing design:

- Housing to be designed to address climate change, water conservation, recycling, and solar power generation.

Industrial development:

- Green buffer zones between the present industrial zones and residential areas.
- Light industrial zoning to be capped, or reduced.
- Monitoring of existing and future industrial estates for pollution, offensive odour and noise that impact the NELDAP.
- Heavy haulage trucks are creating an issue for the area including road surface damage, noise and congestion.

Employment:

- Need to provide a variety of local employment opportunities.
- Need to allow the businesses to grow and expand.
- More shops are needed in the area.
- Need for supporting the existing local businesses and discouraging large franchise opportunities.
- Potentially new cottage industries such as nurseries, B&B's, tourism attractions, wineries, galleries, cafes and restaurants.

Entertainment:

- Need to provide entertainment for all ages.

8.2 Display of conceptual land use options

Council placed the NELDAP options on public display between Monday 15 November and Friday 10 December 2010. Submissions were able to be lodged up until Friday 17 December 2010. The NELDAP options and explanatory information were made available on Council's website, at the Customer Service Centre of Council's Caboolture office, and at the Narangba library. The community was advised of the NELDAP options and consultation period via:

- A mailout to residents and landowners of a newsletter and question/answer fact sheet;
- Council's web site for the project.
- Advert

The information also advised of a special display set up at 14 Main Street Narangba for the duration of the consultation period. The community and stakeholder groups were able to view the options at ten specified display times. At four of these times over the course of a two week period on Thursdays (between 2pm and 7pm) and Saturdays (9am to 12 noon), one-on-one appointments could be made with a senior NELDAP project team member to discuss any issues or concerns regarding the NELDAP options, mapping or planning process.

The feedback received from the community provided Moreton Bay Regional Council with direction to guide the detailed development of the NELDAP. During this public display period, a total of 74 submissions were received from the general public, organisations, state agencies, the development industry, commercial and retail sectors and planning consultancies.

Submissions in response to growth and development reflected a mix of support and objection as outlined in the following summary of issues. The issues are expressed as either points of agreement, disagreement, or suggestions, which summarise the sentiments expressed by individual submissions to issues and concepts raised in the options.

(Note that there may be conflict within each issue category i.e. both agreement and disagreement. This has occurred where separate submissions are expressing separate views on an issue).

Increased population impacts:

- Disagreement with further development that will lead to a loss of semi-rural lifestyle, amenity and impact on quality of life.
- Disagreement with any further development until current issues are addressed.
- Disagreement with any development with impacts on valuable flora and fauna.
- Agreement that further development will impact on the Narangba Rail Station and already limited available car parking.
- Suggestions for an alternative major route between Narangba and Brisbane to ease pressure off the Bruce Highway.
- Suggestions that further development will result in an increase in stormwater runoff and chemical loads to the waterways that feed to the Freshwater National Park.
- Suggestions for a 50 kilometre per hour speed limit on all roads to enhance liveability, protect wildlife and the community.

Road network:

- Disagreement with the Marks Road extension and the justification behind this.
- Disagreement with the Morgan Road extension as it runs through Little Burpengary Creek which floods and is a wildlife corridor.
- Suggestions for an overpass/underpass to address future expansion of the rail line to 4 tracks.
- Suggestions for Brampton Court to provide an east west link.
- Suggestions for upgrades to Burpengary Road between Boscoe Road and New Settlement Road.
- Suggestions for a duplication of Boundary Road between Deception Bay and Narangba Road.
- Suggestions that there are safety issues on both intersections at the end of Callaghan Road.

-
- Suggestions that the underpass at New Settlement Road be widened to four lanes.
 - Agreement that Mackie Road level crossing is of major concern both due to safety and congestion and needs to be immediately addressed.
 - Both agreement and disagreement that a bypass road is needed around district centre (mostly agree).
 - Agreement that an overpass/underpass over the rail line is urgently needed to ease congestion.
 - Suggestions that there is already congestion at the Boundary Road interchange.
 - Suggestions that more clarity is needed around road alignments of proposed road links.
 - Suggestions that the road network around the town centre/district centre is for local traffic only.

Green space network:

- Disagreement with the extent of the green space network.
- Disagreement with green space designation over properties with no justifiable constraints.
- Disagreement with green space designation over environmental areas not governed by any environmental protection laws.
- Disagreement with the “limited green space” provided within the “Investigation Area”.
- Suggestions that the properties on the eastern side of Hall Road are affected by a watercourse that runs northward to Mackie Road.
- Suggestions for particular properties to be included in the green space network.
- Disagreement with Council’s mapping, noting catchment areas are incorrect.
- Suggestions that the green space network requires revision based on current remnant vegetation extent.
- Disagreement with Regional Ecosystem mapping.
- Disagreement that the green space network can adequately protect Hays Inlet and wetlands.
- Suggestions that the Saltwater Creek catchment (west of industrial estate) is already damaged by the industrial estate.
- Suggestions that prior to commencement of works, a desktop search for the likelihood of any threatened species (flora and fauna) should be completed.

Industrial:

- Disagreement with the “Trigger for Further investigation”.
- Suggestions to establish a meteorology station and emission monitoring stations within Narangba Industrial Estate.

Environmental impacts:

- Disagreement with developing Narangba East with stormwater runoff increasing pollution and chemical loads in the waterways that feed to the Freshwater National Park.
- Suggestions for further protection of Hays Inlet from further damage from Narangba Industrial Estate.
- Disagreement with residential zoning along Callaghan Road.
- Disagreement with the State government’s haulage route.

Density/zoning:

- Disagreement with designated residential zoning allocations, as some of these are severely affecting Catchment Protection, Nature Conservation and Bushfire Hazard overlays.
- Disagreement with zoning designations that will impact on koala habitat areas.
- Agreement that the District Centre Options should reflect a decrease in dwelling unit density as the distance from the station increases.
- Suggestions that medium density should be increased to 50 dwellings per hectare not 40 dwellings per hectare as this can be easily accommodated in two storey units.
- Suggestions that the boundary of Boscoe Road and Merryn Court provide a suitable northern boundary to the medium density.
- Suggestions that medium density should be carried through to the edge of the hardrock haulage route.

Infrastructure:

- Suggestions that existing sewerage, electricity, stormwater and water capacity needs desperate upgrade.
- Suggestions that coordination and timing of infrastructure needs to be properly addressed.
- Suggestions that infrastructure be planned to meet development needs and not just respond to development.
- Suggestions that pedestrian walkways need to be provided through the entire Narangba East area.

Public transport:

- Suggestions that Narangba Rail Station is already at capacity, new developments have been approved to the west of the rail line placing further pressure on the station, and further development can be concentrated around a new station within Narangba East.
- Suggestions that an additional train station between Narangba and Burpengary is urgently needed.
- Suggestions that QR should install lifts at the Narangba Rail Station.

Community facilities:

- Suggestions that NELDAP identify locations for more community facilities.
- Suggestions for community facilities to be located in higher density areas.
- Suggestion that NELDAP provide sites for retirement villages and nursing homes.

Centres:

- Disagreement and agreement with the local centre designation.
- Agreement that Narangba needs a local shopping precinct/district.
- Agreement with the plaza proposal suggesting it as positive change and improvement.
- Agreement with a by-pass road that will allow the centre to provide a more cohesive option.
- Suggestion that access to the district centre needs to be improved.
- Suggestion that mixed use be encouraged even over the Narangba Rail Station.
- Suggestion that the district centre be pedestrian friendly with localised traffic only.

Property issues (questions usually subject to an individual property).

- A number of respondents addressed the land use allocations in the draft options. Submissions reflected a mix of support and objection.

Following the consultation, the project team commenced the development of a preferred option for NELDA.

9. NELDAP options

The development of NELDAP relied on a range of inputs. Inputs included the synthesis of technical data and the results and findings of consultation. These inputs were drawn together through the Enquiry by Design workshop and through the application of the vision and design principles.

9.1 Enquiry by design workshop

An Enquiry by Design (EbD) workshop was held on 23 June 2010. The design process provided opportunity for Council and State government agencies to examine in further detail the integration of residential neighbourhoods, the district and local centre, and the green space network into a coordinated and legible hierarchy of land uses.

Early stages of the EbD workshop involved the revisiting of technical data gathered by specialist in-house and consultant resources during Phase 1 of this project, and a review of comments received from the community as an outcome of the public display. Workshop attendees engaged in an open design session by first analysing the characteristics and the structure of NELDA, which then led into the development of land use options.

9.2 Vision

Guiding the formation of the options has been the vision. Each option integrates and coordinates strategic elements and community values for Narangba East Local Development Area. The vision for NELDA established and confirmed through community consultation is:

- NELDAP will provide an integrated urban community and employment area.
- NELDAP will offer diverse housing options, as well as a range of community facilities and infrastructure ensuring residents are well serviced.
- A transit oriented mixed use precinct around Narangba Rail Station and bus interchange, will provide employment opportunities with commercial offices and retail spaces optimising access to frequent public transport services. With local jobs and a strong active and public transport network throughout Narangba, residents and workers will be less dependent on their cars.
- NELDAP will have a comprehensive green space network, which will not only protect the area's important biodiversity, but will also provide recreation and sport facilities to serve the community. These facilities will be linked by cycle and pedestrian pathways to residential areas, employment areas and community facilities.
- NELDAP will develop over the next 15 years, supported by a sequenced roll out of engineering and social infrastructure. These services will be identified and funded through the Priority Infrastructure Plan and Infrastructure Charges Schedules as well as direct funding from Moreton Bay Regional Council and the State government.

9.3 Design principles

The following design principles were developed, from the consideration of the vision and the technical inputs to help guide the NELDAP through the EbD process and ensure consistency across the options:

- Deliver a green space network which responds to areas with significant environmental values including habitat corridors, flora and fauna, endangered vulnerable or rare regional ecosystems, koala habitat, flood affected land, waterways and creeks.
- Design walkable neighbourhoods based on an 800 metre catchment, ensuring that all key features of the built environment are well integrated and easily accessible.
- Plan mixed use centres as the core components of walkable neighbourhoods providing commercial and retail services, employment, leisure, community facilities and housing options.
- Provide for a range of housing options to accommodate a diverse resident population.
- Create a sustainable transport system that integrates roads, public transport and pedestrian and cycle networks to establish good internal and external access that maximises safety, encourages active and public transport usage and minimises car dependency.

-
- Ensure access to a range of community services and facilities to support future residents.
 - Encourage localised economic and employment opportunity so residents can live and prosper within the Moreton Bay Region.
 - Ensure that the “Trigger for Further Investigation” distance of 1,500 metres is maintained until further planning investigation are undertaken.
 - Ensure management of stormwater, maximising the use of natural waterways.
 - Ensure the staged and efficient use of infrastructure.
 - Ensure infrastructure is progressively rolled out across NELDA to meet the needs of the growing community.

9.4 Structural elements tested in the options

The EbD process highlighted alternate land use and infrastructure configurations which created different opportunities and implications for the future of NELDAP. While some key issues are consistent in the options (e.g. location and extent of the green space network) the following land use and infrastructure issues provided the basis of alternative scenarios which need to be expressed in the options:

- Bypass road;
- Centres network and district centre configuration; and
- Residential densities and configuration.

9.4.1 Bypass road

The approach of how to direct existing and planned through traffic servicing the Narangba Valley community was presented as two different alternatives in the options. Each option contained individual implications and opportunities to NELDA. The traffic solutions tested were:

- Additional lanes on Burpengary Road to accommodate potential future traffic increases, and
- The construction of a bypass route east of the Narangba District Centre.

Option 1 which incorporates additional lanes on Burpengary Road would lead to conflicts between adjacent urban uses and resident movements accessing the Narangba Rail Station and district centre. The existing pavement width would need to be widened to satisfy traffic volumes. This 4 lane road plus railway would create a significant barrier of infrastructure running through the Narangba District Centre. However, this option does not require the construction of a major new road and thereby had less direct impact on future land uses.

Option 2 which incorporates the construction of a bypass road east of the Narangba District Centre would see existing through traffic servicing the Narangba Valley community being diverted around the Narangba District Centre to the east. This option would provide an improved traffic outcome.

Importantly, the inclusion of the bypass road provided opportunity to envision a new layout and structure for the Narangba District Centre. In particular, it created the opportunity to remove through traffic, establish high profile catalyst sites and establish the creation of a walkable centre.

The alternate options for the arterial roads are explored conceptually in the Narangba District Centre Options.

9.4.2 Centres

A critical issue in the development of NELDAP options has been the function of the Narangba District Centre and function and location of the proposed local centre. The options present different futures for the Narangba District Centre. These options were considered in light of their relationships with other centres outside NELDA, their role in meeting the retail, community and employment needs of the future NELDA community, relationship to residential densities, and the interaction with other structural elements, such as road networks.

The Caboolture ShirePlan Outcomes maintains a hierarchy of retail centres in the local government area, particularly the Caboolture-Morayfield centre which is allocated as a Principal Regional Activity Centre for the Moreton Bay Region.

North Lakes which is allocated as a Major Activity Centre and is located south east of NELDA is identified by the SEQRP 2009 – 2031.

In the preparation of NELDAP it was resolved to maintain this network. In recognition of the existing network, and the anticipated population, an assumed future total area of 18,000m² GFA is required for both one district and one local centre.

The location of these centres is driven by:

- The existing Narangba District Centre, and its current and emerging role as a district centre;
- The need for the future local centre to be located with good accessibility to residential areas, road connections and public transport; and
- Opportunities for co-location of a future local centre with a future primary school.

Alternate urban design concepts for the district centre were explored within the options, and prepared through the EbD process. The centre options (Figures 42 and 43) specifically explore the interaction of land uses, private and public space, and infrastructure. As previously mentioned, the road network is central in establishing a distinctly different layout and design for the Narangba District Centre. As such, Option 1 and Option 2 are supported by different conceptual layouts for the district centre. The following provides specific design criteria of each option.

Draft District Centre Option 1

This option proposes the establishment of a district centre on land sited both east and west of the Narangba Rail Station. Key aspects are:

- The town centre will be upgraded on both sides of the rail to accommodate a range of land uses that build on the existing retail, community and residential uses.
- Commercial, retail and cultural uses surround the planned intersection of Mackie Road and the new link road to create a new hub of development and centre based activity in NELDA.
- Residential land use is located in proximity to the centre, with greater density at the centre core.
- Higher, transit-supportive residential densities are focused around the Narangba Rail Station and bus station.
- Potential retail is located at an expanded Narangba Shopping Village.
- New retail is located at the intersection of Mackie Road and the (new) link road.
- Higher density residential development surrounds the core of commercial and community uses.
- The centre contains retail, office and community uses.
- An estimated 16,000 m² GFA (Gross Floor Area) comprised of 8,000m² retail and 8,000m² commercial is proposed.

Draft District Centre Option 2

This option proposes the consolidation and upgrade of the existing Narangba Shopping Village on the western side of the Narangba Rail Station. Key aspects are:

- Commercial uses within the district centre will orient toward Main Street and Burpengary Road, capturing passing trade.
- Some limited retail uses are established east of the Narangba Rail Station where collocated with community facilities and a town square / civic space.
- Higher, transit-supportive residential densities are focused around the district centre on the western side.
- An estimated 15,000 m² GFA (Gross Floor Area) comprised of 7,000m² retail and 8,000m² is proposed.

9.4.3 Residential densities

The options developed to transition the NELDA from predominantly large lot rural residential development to urban residential were tested against the principles of SEQRP 2009 – 2031 and best practice international standards to ensure an innovative residential product is developed.

A key issue was the need to achieve transit supportive densities. This required NELDAP to achieve residential densities of up to 80 dwellings/ha to support existing infrastructure, namely the Narangba Rail Station. It included introducing densities to other urban areas in NELDA of 15 dwellings/ha to ultimately support regular public transport services, provide for efficiency in other infrastructure networks and to create communities with a sense of place.

Recognising the opportunity presented to establish residential densities conducive to Transit Oriented Development, the options incorporated variations in the configuration of future residential areas.

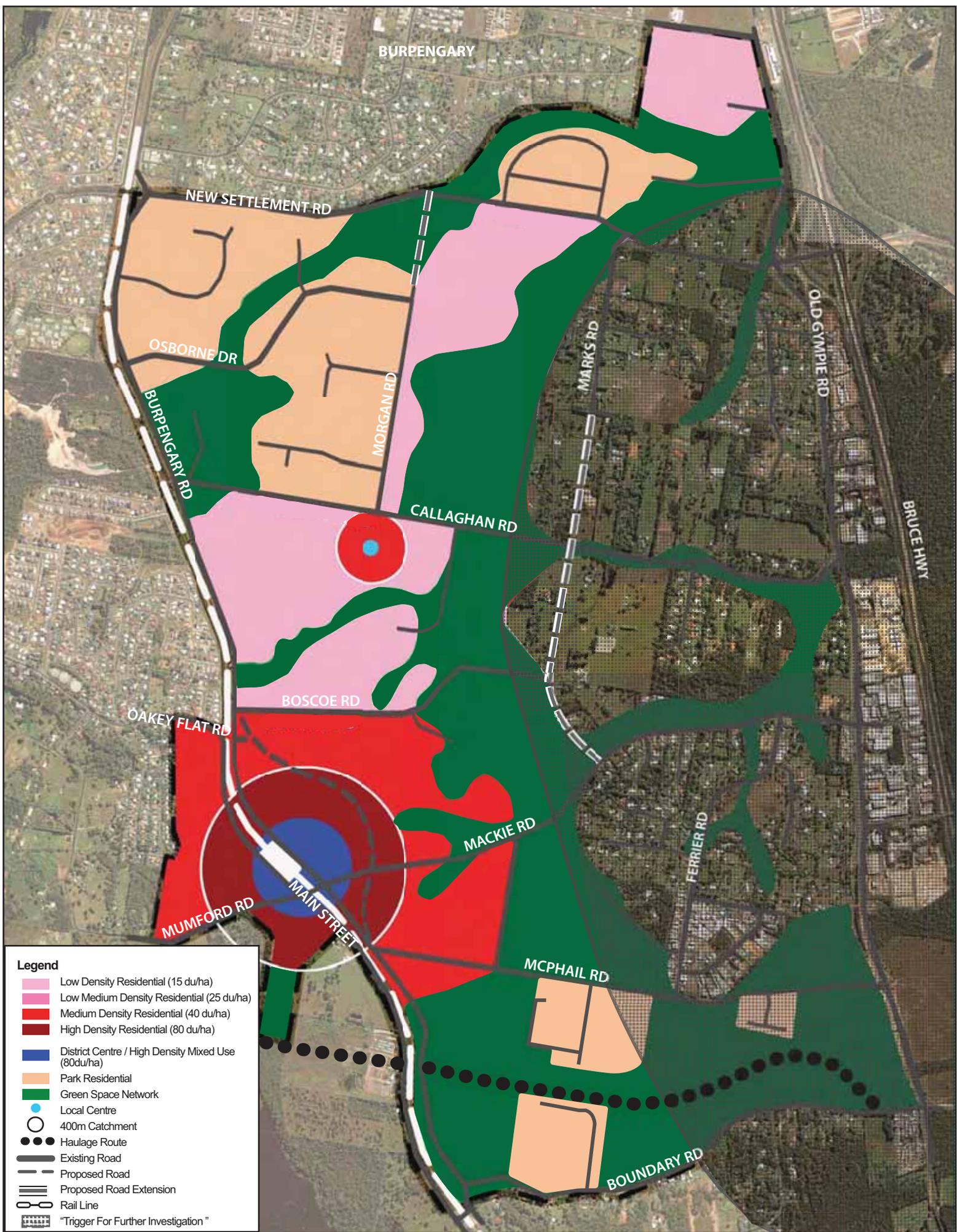
9.5 NELDAP options summary

Two options identified in Figure 40 and 41 were consequently developed to respond to design elements and to present the community and stakeholders with different possible futures for NELDA. Table 7 provides a detailed listing of specific differences and consistencies between the options.

Table 6: Structure Plan Options

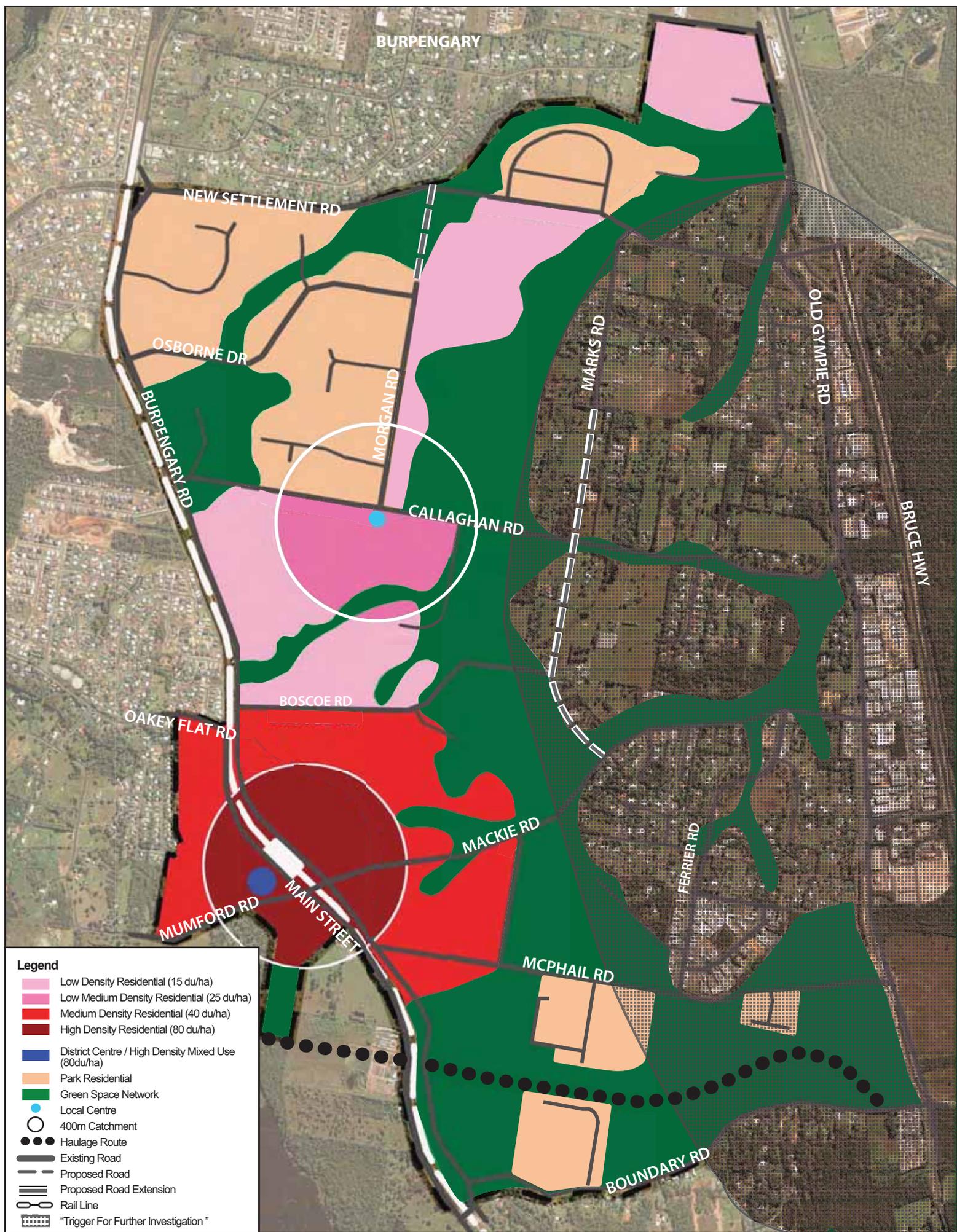
Structure Plan Option 1 (Figure 40)	Structure Plan Option 2 (Figure 41)
<p>Urban Structure</p> <ul style="list-style-type: none"> • Provides distinct residential densities and built form at select locations across the site. • Concentrates high density residential development immediately surrounding the Narangba District Centre contributing to the formation of a Transit Oriented Development (TOD). • Includes medium density housing surrounding the district and local centre. • Contains compact neighbourhoods with edges defined by the green space network. • Provides a well connected street network. • Convenient local shops and community facilities such as schools are located to achieve walkable neighbourhoods. • Residential neighbourhoods support active transport (walking and cycling). • A new link road off Burpengary Road east of the rail line provides additional lanes for potential future traffic increases and removes through traffic from the centre. • Options to eliminate or reduce the congestion on the Mackie Road level crossing are being investigated by Council including new overpasses at Oakey Flat Road and McPhail Road. 	<p>Urban Structure</p> <ul style="list-style-type: none"> • Provides a transition between residential densities across the site. • Concentrates high density residential development immediately surrounding the Narangba District Centre contributing to the formation of a Transit Oriented Development (TOD). • Includes some medium density housing surrounding the Narangba District Centre and Narangba Rail Station. • Provides urban densities around the local centre (low medium density). • Provides suburban densities in residential areas (low density). • Provides a supportive street layout, without the potential new link road off Burpengary Road. • Utilises the green space network to deliver neighbourhoods offering high amenity. • Additional lanes on Burpengary Road accommodate potential future traffic increases.
<p>Local Centres</p> <ul style="list-style-type: none"> • Proposes a local centre at the junction of Callaghan Road and Morgan Road. • The local centre provides local convenience shopping within easy walking distance of homes. 	<p>Local Centres</p> <ul style="list-style-type: none"> • Proposes a local centre at the junction of Callaghan Road and Morgan Road. • The local centre provides local convenience shopping within easy walking distance of

Structure Plan Option 1 (Figure 40)	Structure Plan Option 2 (Figure 41)
<p>The proposed local centre accommodates 1,000m² GFA (Gross Floor Area).</p> <ul style="list-style-type: none"> As with the Narangba District Centre, the local centre supports higher density housing which allow for a mix of uses to be developed. 	<p>residential areas. The proposed local centres will accommodate 1,000m² GFA (Gross Floor Area).</p> <ul style="list-style-type: none"> The local centre is supported by concentrations of low to medium density housing including precincts which allow a mixed use development.
<p>Neighbourhoods</p> <ul style="list-style-type: none"> The compact neighbourhoods are defined by their relationship to the district or local centre. Neighbourhoods are characterised by their proximity to the green space network. Local centres and community facilities such as schools are located in walkable neighbourhoods. 	<p>Neighbourhoods:</p> <ul style="list-style-type: none"> The compact neighbourhoods are defined by their relationship to the district or local centre. Neighbourhoods are characterised by their proximity to the green space network. Local centres and community facilities such as schools are located in walkable neighbourhoods.
<p>Residential Density</p> <ul style="list-style-type: none"> Suburban residential areas provide traditional detached housing at around 15 dwellings per hectare (low density). Residential densities of 80 dwellings per hectare in the 400m catchment surrounding the Narangba District Centre and Narangba Rail Station (high density). Residential densities of 40 dwellings per hectare surrounding the Narangba District Centre and Narangba Rail Station (medium density). Residential densities of 40 dwellings per hectare in the 200m catchment surrounding the local centre at the junction of Callaghan Road and Morgan Road (medium density). 	<p>Residential Density:</p> <ul style="list-style-type: none"> Suburban residential areas provide traditional detached housing at around 15 dwellings per hectare (low density). Transit supportive development is focused around the Narangba District Centre at around 70 to 80 dwellings per hectare. Residential densities of 80 dwellings per hectare (high density/mixed use) in the 400m catchment surrounding the Narangba District Centre and Narangba Rail Station. Residential densities of 40 dwellings per hectare (medium density) surrounding the Narangba District Centre and Narangba Rail Station. Residential densities of 25 dwellings per hectare (low medium density) in the 400m catchment surrounding the local centre.



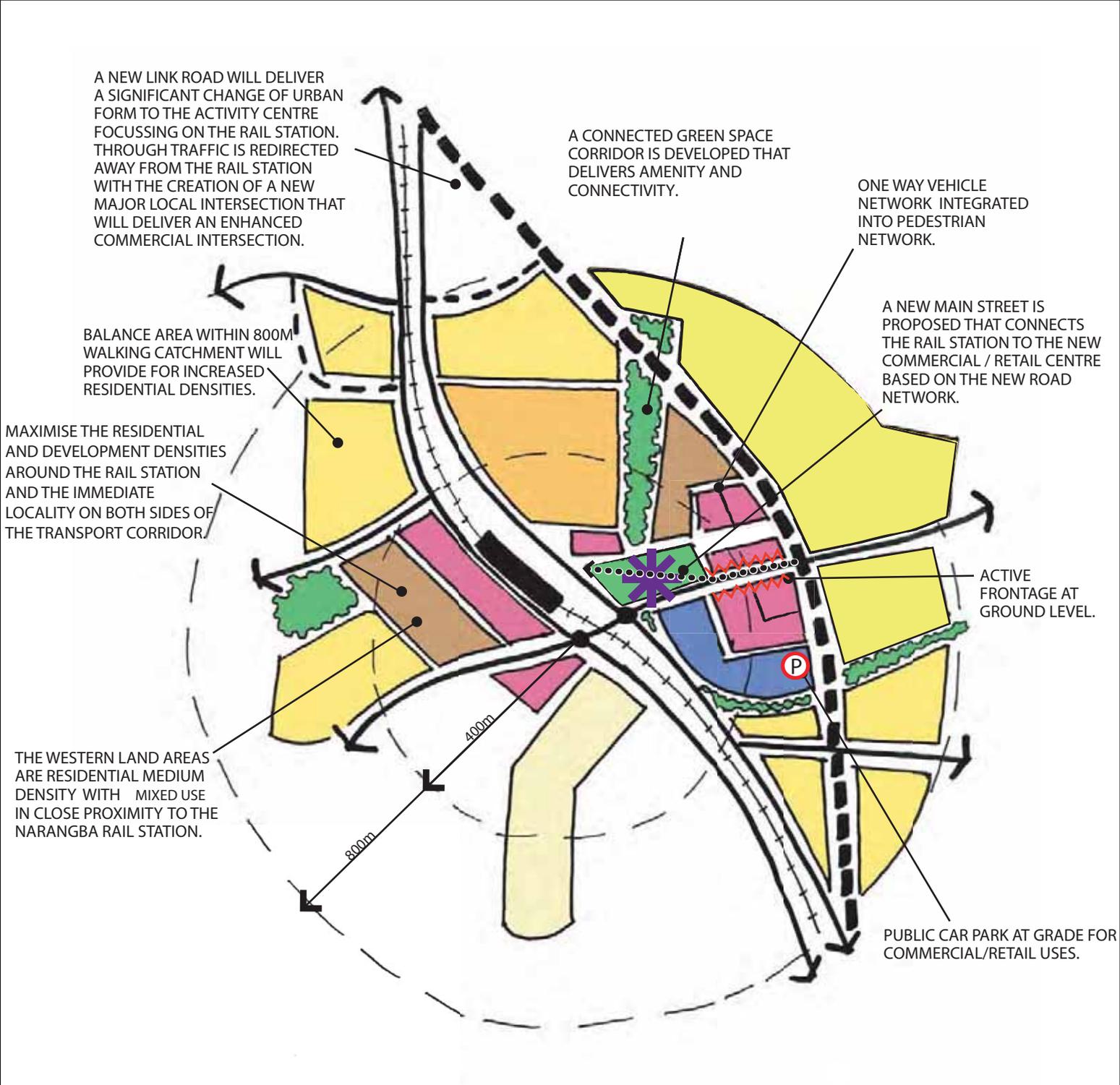
- Legend**
- Low Density Residential (15 du/ha)
 - Low Medium Density Residential (25 du/ha)
 - Medium Density Residential (40 du/ha)
 - High Density Residential (80 du/ha)
 - District Centre / High Density Mixed Use (80du/ha)
 - Park Residential
 - Green Space Network
 - Local Centre
 - 400m Catchment
 - Haulage Route
 - Existing Road
 - Proposed Road
 - Proposed Road Extension
 - Rail Line
 - "Trigger For Further Investigation"

Figure 40
Narangba East Local
Development Area Plan
Structure Plan Option 1



- Legend**
- Low Density Residential (15 du/ha)
 - Low Medium Density Residential (25 du/ha)
 - Medium Density Residential (40 du/ha)
 - High Density Residential (80 du/ha)
 - District Centre / High Density Mixed Use (80du/ha)
 - Park Residential
 - Green Space Network
 - Local Centre
 - 400m Catchment
 - Haulage Route
 - Existing Road
 - Proposed Road
 - Proposed Road Extension
 - Rail Line
 - "Trigger For Further Investigation"

Figure 41
Narangba East Local
Development Area Plan
Structure Plan Option 2



A NEW LINK ROAD WILL DELIVER A SIGNIFICANT CHANGE OF URBAN FORM TO THE ACTIVITY CENTRE FOCUSING ON THE RAIL STATION. THROUGH TRAFFIC IS REDIRECTED AWAY FROM THE RAIL STATION WITH THE CREATION OF A NEW MAJOR LOCAL INTERSECTION THAT WILL DELIVER AN ENHANCED COMMERCIAL INTERSECTION.

A CONNECTED GREEN SPACE CORRIDOR IS DEVELOPED THAT DELIVERS AMENITY AND CONNECTIVITY.

ONE WAY VEHICLE NETWORK INTEGRATED INTO PEDESTRIAN NETWORK.

BALANCE AREA WITHIN 800M WALKING CATCHMENT WILL PROVIDE FOR INCREASED RESIDENTIAL DENSITIES.

A NEW MAIN STREET IS PROPOSED THAT CONNECTS THE RAIL STATION TO THE NEW COMMERCIAL / RETAIL CENTRE BASED ON THE NEW ROAD NETWORK.

MAXIMISE THE RESIDENTIAL AND DEVELOPMENT DENSITIES AROUND THE RAIL STATION AND THE IMMEDIATE LOCALITY ON BOTH SIDES OF THE TRANSPORT CORRIDOR.

ACTIVE FRONTAGE AT GROUND LEVEL.

THE WESTERN LAND AREAS ARE RESIDENTIAL MEDIUM DENSITY WITH MIXED USE IN CLOSE PROXIMITY TO THE NARANGBA RAIL STATION.

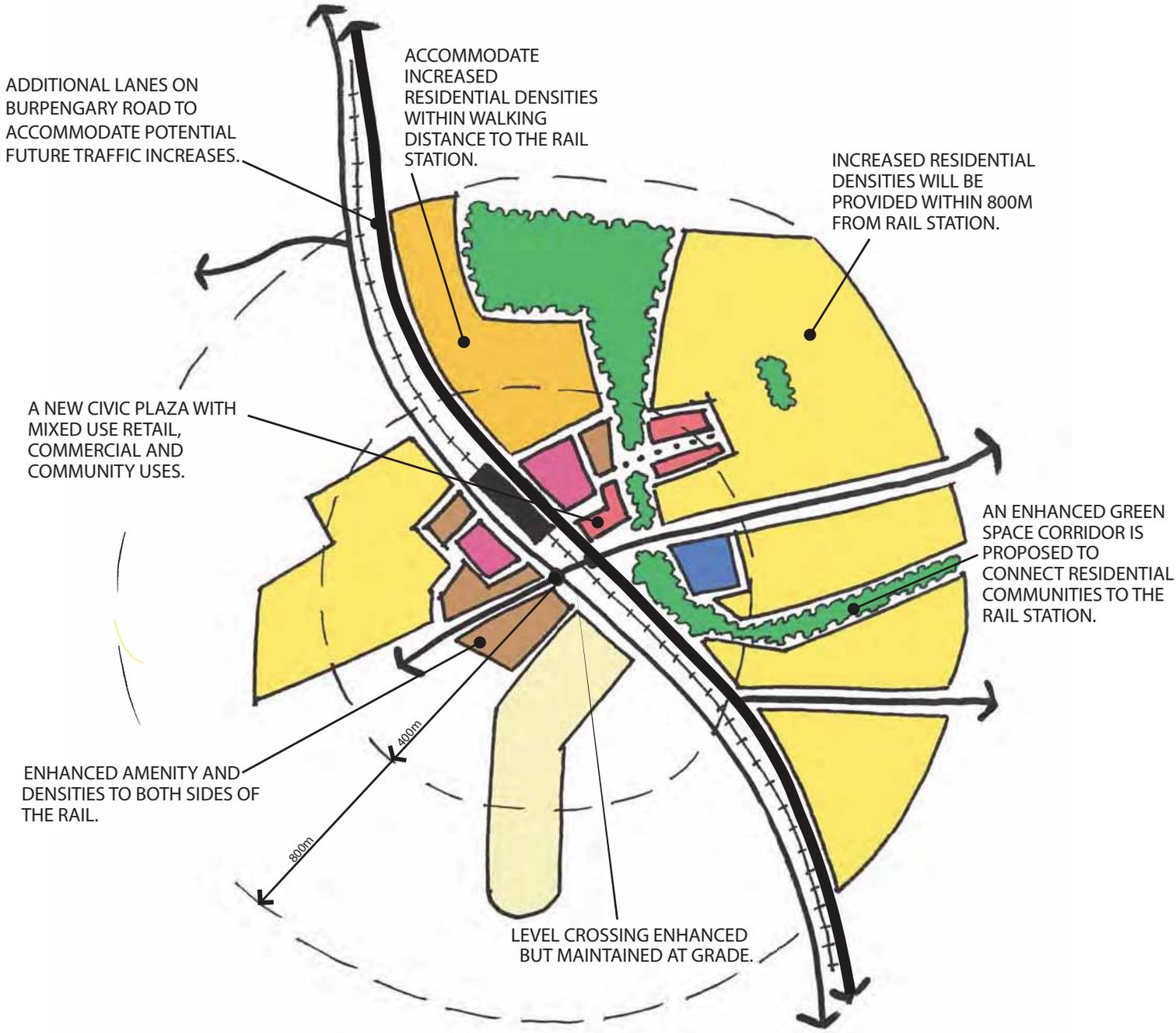
PUBLIC CAR PARK AT GRADE FOR COMMERCIAL/RETAIL USES.

Legend

- Transit Supportive Development (70-80du/ha)
- Medium Density Residential (40 du/ha)
- Commercial / Retail
- Mixed Use Retail / Residential (80du/ha)
- Cultural / Community Precinct
- Plaza / Town Square
- Main Street
- Active frontage at ground level
- Green Space / Cycleway
- P Car Parking
- Existing School
- Intersection Upgrade
- Link Road

Figure 42
Narangba East Local
Development Area Plan
District Centre Option 1





Legend

- Transit Supportive Development (70-80du/ha)
- Medium Density Residential (40 du/ha)
- Commercial
- Mixed Use Retail / Residential (80du/ha)
- Cultural / Community Precinct
- Plaza / Town Square
- Main Street
- Active frontage at ground level
- Green Space / Cycleway
- Existing School
- Intersection Upgrade

Figure 43
Narangba East Local
Development Area Plan
District Centre Option 2



NOT TO SCALE

VERSION: 3
 LAST MODIFIED: 09/05/11

10. NELDAP options analysis

This section of the report provides an analysis of the NELDAP options. The results from community consultation were a key factor when testing the implications of different land use allocations. The provision of infrastructure, protection of environmental features, analysis of constraints such as flooding, and other planning issues such as employment growth, were all appropriately considered in the development of the preferred option. When the preferred NELDAP option was selected, it was analysed against the SEQRP 2031 objectives and other relevant State and Federal Planning Frameworks.

10.1 NELDAP preferred draft option

Based on submissions received during the public consultation period of the NELDAP options and the technical input, a determination was made that a combination of the two draft NELDA Structure Plan Options would provide the preferred draft option. The preferred NELDA Structure Plan is shown in Figure 44.

The NELDAP preferred draft option features a “combination” of features from both the draft NELDA Structure Plan Options, with the following key differences.

Refinement to the zoning/green space network

Based on comments received during the community consultation process, the “zoning” and green space network was amended as follows:

- The green space network east of Hall Road was amended to reflect medium density precinct (similar to the same alignment as the existing Council zoning, however only zoned to the front of these allotments and not within the Q100 flood levels overlay).
- The medium density precinct at the corner of Burpengary and McPhail Roads was extended south east to unconstrained properties (similar to Councils current zoning).
- Low density residential precinct was allocated generally within the 400 metre catchment around the local centre on Callaghan Road.
- The green space network west of Marks Road was tapered back to create more low density residential precinct east off Morgan Road.
- Minor green space network was added towards the end of Campbell Street.
- Medium density residential was slightly realigned on the north of Meryn Court.
- The green space allocated to the south-west of the Narangba District Centre was removed and correctly allocated as an existing school (Narangba State School)
- The green space network was added at the junction of Ferrier Road and Alvisto Court. This is to reflect the allocated District Park (to accommodate a future local facility) in the PSP21 – Open Space and Community Purposes.
- An area on the North West corner of the intersection of McPhail Road and Old Gympie Road was amended, as this has some existing employment uses, creating an inconsistency with its green space network designation. The amendment acknowledges the existing zoning, land use and extent of vegetation constraints.

Refinement to the road network

Based on comments received during the community consultation process, the road network was amended as follows:

- The existing at grade crossing at Mackie Road is to be closed.
- The proposed Marks Road extension was removed, as it was not considered necessary.
- The proposed Morgan Road north extension was realigned outside of the flood prone land and through the low density residential area east of Morgan Road to intersect with New Settlement Road (proposed alignment to be confirmed).
- Morgan Road has further been extended to the south to link with Mackie Road and provide further local connections to the Narangba District Centre.
- The Narangba District Centre bypass has been incorporated to deviate through traffic around the district centre.

- An additional collector road has been added from the Narangba District Centre east to the proposed Morgan Road south extension.
- New rail overpasses are proposed at the McPhail Road and Oakey Flat Road, and the rail overpass at Boundary Road is to be replaced and realigned to link Narangba Road and Burpengary Road.
- The deviation of through traffic to the east of the Narangba District Centre will allow parts of Burpengary Road and Main Street to better service local traffic.

Refinement to the centres

Based on comments received during the community consultation process, the centres were amended as follows:

- The local centre was moved slightly to the east.
- The draft District Centre Option 1 was retained with the centre development on both sides of the Narangba Rail Station and the addition of a bypass road around the centre. The best alignment of the bypass road needs to be investigated by Council in more detail at a later stage.

Comments pertaining to the “Trigger for Further Investigation”

Based on comments received during the community consultation process:

- No change to the “Trigger for Further Investigation” area was made. However, the “buffer” was highlighted as a major issue concerning those residents that are affected. The timeframes and process for further investigation will be resolved through a future planning investigation.

10.2 SEQRP 2031 objectives

An analysis was undertaken in relation to how the NELDAP preferred draft option meets the relevant parts of the SEQRP 2031. The analysis undertaken is an assessment of the preferred NELDAP draft option against the Desired Regional Outcome 8: “Smart Growth”, and supporting principles. The analysis is outlined in Table 8 below.

Table 7: SEQRP 2031 – Planning Policy Principles

SEQRP 2031 Provision	The preferred NELDAP draft option
DRO 8 Smart Growth	
8.1 Containing growth Locate urban development in the Urban Footprint within and near existing communities, and existing and planned public transportation infrastructure, to promote liveability and transport efficiency, and reduce car dependence and private vehicle travel.	The NELDAP promotes development occurring within the Urban Footprint areas. Proposed residential communities are in close proximity to planned major public transport infrastructure and will promote liveability and transport efficiency. The NELDAP has a core aim of promoting transport efficiency and ensuring a reduction in car dependence and private vehicle travel, by promoting self-sufficiency and self-containment, and promoting active transport principles by providing a district and local centre that is walkable for surrounding residents and an active transport network which enables access to the Narangba Rail Station, and bus stops.
8.2 Compact development Conserve land by making the most efficient use of land allocated for urban development.	Efficient use of land for urban development is promoted by providing a significant proportion of high density dwellings well serviced by integrated transport and community facilities at the Narangba District Centre.
8.3 Urban character and design Design and site new development to reflect SEQ’s subtropical climate, reinforce local character and achieve design excellence and innovation.	New development will be required to incorporate subtropical design principles, reinforce local character and achieve sustainability in design where possible. High quality standards of design will also be promoted through the land use intent statements.

SEQRP 2031 Provision	The preferred NELDAP draft option
<p>8.4 Housing choice and affordability Provide a variety of housing options to meet diverse community needs, and achieve housing choice and affordability</p>	<p>The NELDAP and accompanying land use intent statements will promote the delivery of a diversity of housing products at varying densities, to ensure that housing choice and affordability features as key elements of residential development. Housing options will cater for a diversity of needs. The principles of self-containment, provision of a high quality and efficient public transport network and reduction in private vehicle trips will also ensure affordability of living is facilitated for residents.</p>
<p>8.5 Activity centres and transit corridors Focus employment, infill housing and community services in well-planned, vibrant and accessible regional activity centres and along high-frequency, priority public transport corridors.</p>	<p>The NELDAP promotes a Narangba District Centre and local centre and TOD opportunities, by focusing employment, housing and community services within the centres, particularly the Narangba District Centre which is generally focused along the high-frequency, priority public transport corridor - i.e. the Caboolture railway line.</p>
<p>8.6 Centres that support business Principal and major activity centres located on existing and planned, high-frequency public transport routes should provide for the future growth of a broad range of business uses to support employment growth.</p>	<p>Under the NELDAP, the proposed Narangba District Centre is of an appropriate size that will not conflict with the Principal and Major centres of Moreton Bay Regional Council.</p>
<p>8.7 Mixed use centres Include a broad mix of land uses in activity centres and structure them as mixed use centres in a predominantly main-street format to best serve their surrounding communities.</p>	<p>The NELDAP proposes a mixed use Narangba District Centre - a main street format with commercial, retail and community activities provided for at street level and accessible via the road network and public and active transport linkages.</p>
<p>8.8 Integrated land use and transport planning Ensure new development utilises existing infrastructure or can be provided with timely transport infrastructure, community services and employment.</p>	<p>The NELDAP proposes that new development will be provided with timely transport infrastructure, community services and employment, to service the residential communities. A primary element of NELDAP is to maximise access to, and utilisation of the Narangba Rail Station.</p>
<p>8.9 Urban and future urban land All new major urban development areas should be subject to a thorough and collaborative planning process to establish the broad structure, layout, appropriate land uses, infrastructure and service corridors required for future development and community needs.</p>	<p>The NELDAP is representative of the culmination of a thorough and collaborative planning process which has been undertaken to establish the broad structure, layout, appropriate land uses, infrastructure and service corridors required for future development and community needs.</p>
<p>8.10 Rural residential development Contain and limit areas allocated for rural residential development to ensure efficient provision of services and infrastructure, and limit further land fragmentation.</p>	<p>The NELDAP seeks to encourage urban development at much higher densities than traditional rural residential development, where appropriate. Existing rural residential areas within the area will transition to urban forms of development where it is suitable to do so.</p>

(Source: Column 1 based on provisions from South East Queensland Regional Plan 2009-2031)

The above analysis demonstrates the ability of the NELDAP to meet the principles of the DRO's for smart growth under Section 8 of the SEQRP 2031.

10.3 Other relevant state and federal planning framework

There are a number of additional State and Federal legislative requirements relevant to the future development of the NELDAP. Table 9 outlines how the NELDAP preferred draft option meets the principles of a variety of the State and Federal legislative requirements.

Table 8: Federal and State Planning Legislative Requirements

Legislation	Requirements addressed through the planning process of NELDAP
Commonwealth Environmental Protection and Biodiversity Conservation Act 1999	<ul style="list-style-type: none"> • The Environmental Protection and Biodiversity Conservation Act (EPBC) 1999 protects matters of national environmental significance including World Heritage properties, RAMSAR wetlands, and threatened and migratory species and communities including marine species as well as other protected areas. • The complete assessment and the relevance in planning for NELDAP will need to be addressed and resolved through action under the EPBC Act 1999.
Australian Heritage Council Act 2003	<ul style="list-style-type: none"> • Indigenous cultural heritage is protected by the Australian Heritage Council Act 2003. The regime under this Act has created the National Heritage List and Commonwealth Heritage List. The listing of a place on the National Heritage List is defined as a matter of national environmental significance under the EPBC. • Application of this Act is not triggered, given that NELDA is not identified on the Australian Heritage Database.
Native Title Act 1993 (Cmth); Native Title Act 1993 (Qld)	<ul style="list-style-type: none"> • The main objective of the Native Title Act 1993 is to provide recognition and protection of Native Title. • Application of this Act is not triggered.
Sustainable Planning Act 2009	<ul style="list-style-type: none"> • The Sustainable Planning Act 2009 (SPA) is the primary legislation guiding planning and development in Queensland. The overall goal of SPA is to seek to achieve ecological sustainability. • Preparation of the NELDAP has been undertaken in accordance with relevant SPA requirements.
Environmental Protection Act 1994	<ul style="list-style-type: none"> • The objective of the Environmental Protection Act 1994 is to protect Queensland's environment, while allowing for development that improves the total quality of life, both now and in the future, in a way that maintains the ecological processes on which life depends. • The planning process ensured sensitive activities (e.g. a child care centre) are not located on land subject to contamination from previous activities within the NELDAP (e.g. poultry farms, vehicle workshops).
Environmental Protection (Water) Amendment Policy (No.1) 2010	<ul style="list-style-type: none"> • The Environmental Protection Policy (EPP) Water places obligations upon the State and local government authorities for water quality management and improvement. The EPP (Water) Amendment Policy 1 (2010) establishes environmental values and water quality objectives for rivers, estuarine and coastal waters of Moreton Bay. • The proposed green space network and supporting policies including stormwater quality and quantity and the achievement of the required DSS will seek to ensure compliance with the EPP (Water).
Environmental Protection (Noise) Policy 2008	<ul style="list-style-type: none"> • The EPP (Noise) identifies the environmental values of the acoustic environment to be enhanced or protected, and provides a framework for decision-making for environmental authorities. • The NELDAP addresses potential impacts on the quality of acoustic environment through siting of noise-sensitive land uses and incorporating buffering requirements.
Environmental Protection (Air) Policy 2008	<ul style="list-style-type: none"> • The EPP (Air) sets out the air quality objective for Queensland's air environment. It lists the environmental values to be preserved, sets air quality indicators, and provides a framework for decision-making and management of the air environment. • Application of this EPP is not triggered, given that NELDA is expected to be developed for residential, commercial and retail uses.
Environmental	<ul style="list-style-type: none"> • The EPP (Waste Management) identifies environmental values with respect to waste

Legislation	Requirements addressed through the planning process of NELDAP
Protection (Waste) Management Policy 2000	<p>management and provides a framework for authorities deciding on environmental approvals.</p> <ul style="list-style-type: none"> • The NELDAP addresses the requirements of this EPP through setting requirements for design and construction of the future infrastructure systems for the NELDA.
Water Act 2000	<ul style="list-style-type: none"> • Above the level of tidal inundation, watercourses are afforded protection under the Water Act 2000. • The proposed green space network and supporting policies including stormwater quality and quantity and the achievement of the required DSS will seek to ensure compliance with the Water Act 2000.
Plumbing and Drainage Act 2002	<ul style="list-style-type: none"> • The Plumbing and Drainage Act 2002 regulates the use of grey water for garden watering in sewered areas, and on-site sewerage systems. • The NELDAP considers opportunities for minimising overall water consumption, including such measures as greywater recycling and reuse.
Nature Conservation Act 1992 Nature Conservation (Wildlife) Regulation 2006	<ul style="list-style-type: none"> • The purpose of the Nature Conservation Act 1992 is to declare and manage protected areas and to protect wildlife outside of these areas. Under sections 88 and 89 of this Act, a permit is required to take, keep or interfere with a protected plant or animal. • The Nature Conservation (Wildlife) Regulation 2006 lists native species as: Extinct in the Wild; Endangered; Vulnerable, Near Threatened; Rare; of Special Cultural Significance; or as Common in Queensland. Several listed species have been recorded within a 5km radius of NELDA. • The NELDAP ensures the protection of threatened plant and animal species through its land use strategy.
Vegetation Management Act 1999	<ul style="list-style-type: none"> • The purpose of the Vegetation Management Act 1999 is to regulate vegetation clearance on freehold land. The vegetation regulated under this Act includes threatened ecosystems and species, and vegetation protected to maintain diversity. • The NELDAP ensures the protection of threatened plant and animal species through its land use strategy and specific development intent and outcome statements.
Queensland Heritage Act 1992	<ul style="list-style-type: none"> • The purpose of this Act is to regulate the excavation of sites that contain or may contain significant objects of Queensland's cultural heritage. • It is considered that the future development of the NELDAP will have no adverse impacts on the cultural heritage values as there are no heritage listed sites within the NELDA.
Queensland Aboriginal Cultural Heritage Act 2003	<ul style="list-style-type: none"> • This Act provides recognition, protection and conservation of Aboriginal cultural heritage. • The development of NELDAP will ensure that a duty of care is followed.
State Planning Policy 1/03 Mitigating the adverse impacts of flood, bushfire and landslide	<ul style="list-style-type: none"> • The NELDAP ensures that all natural hazard areas are properly identified and managed through planning, design, and development intent and outcome statements. • The NELDAP responds to these constraints, ensuring areas subject to hazard are free from development.
State Planning Policy 2/02 Planning and Managing	<ul style="list-style-type: none"> • Any future use of the site resulting in the disturbance of acid sulfate soils will address this State Planning Policy (SPP) requirements.

Legislation	Requirements addressed through the planning process of NELDAP
development involving acid sulfate soils	
SEQ Coastal Management Plan	<ul style="list-style-type: none"> • The NELDAP must ensure water quality objectives identified by the SEQ Coastal Management Plan. • This will be achieved through total water cycle management principles.
State Planning Policy 1/07 Housing and residential development	<ul style="list-style-type: none"> • The NELDAP ensures that the future development within NELDA provides for housing diversity and affordability, and maximises community's self-containment in terms of access to essential services. • The land use strategy responds to this policy by planning for a mix of housing types with access to essential services concentrated around a centrally located mixed use centre.
State Planning Policy 4/10: Healthy Waters	<ul style="list-style-type: none"> • All developments in NELDAP are required to install water quality improvement treatments that reduce the annual load of pollutants leaving the site/development in accordance with Council guidelines. These water quality improvement treatments are to be on an approved design and be located on private land within the development. • In order to achieve no net-worsening of flood levels downstream at-source detention basins will be required. These detention facilities are to be located on private property and maintained by the developer/site manager. • Within practical limitations, all major trunk drainage will be 'open waterway' systems with 'conventional' drainage systems of pipes and overland flow drainage paths for minor drainage paths only.
State Planning Policy 5/10: Air, Noise and Hazardous Materials 2010	<ul style="list-style-type: none"> • Both of the proposed Structure Plan Options show a "trigger for further investigation" area. This is defined by the State Planning Policy 5/10: Air, Noise and Hazardous Materials 2010. The "Trigger for Further Investigation" provides a benchmark of 1,500 metres in which further planning investigations are required. • For the land located within the area identified as "trigger for further investigation", any future planning is effectively placed "on hold". Council recognises the need for further work which may involve a number of planning investigations that may include (but not limited to), a hazard and risk assessment, air, noise and odour assessments and a community impact survey. A number of these planning investigations and consequent Caboolture ShirePlan amendments will confirm whether such areas are suitable for future development. Note existing rural residential rights have not been altered and will remain so until Council undertakes further work.
State Planning Policy 2/10 Koala Conservation in SEQ	<ul style="list-style-type: none"> • The NELDAP manages potential impacts of urban development upon koala habitat. The NELDAP incorporates measures to achieve koala conservation and habitat conservation outcomes sought by the SPP. • The green space network provides significant benefits to the koala population by providing links of continuous habitat, and is sized to provide refuge for koalas in an urban environment.

