3 DRAFT STRATEGIC FRAMEWORK

3.1 Preliminary

(1) This draft strategic framework sets the proposed policy direction for the Ipswich planning scheme that will form the basis for ensuring appropriate development occurs in the planning scheme area.

(2) The draft strategic framework has been drafted to ensure that the planning scheme:
- (a) advances the purpose of the *Planning Act 2016* (the Act) to achieve ecological sustainability (a balance that integrates the protection of ecological processes and natural systems, economic development and the maintenance of the cultural, economic, physical, and social wellbeing of people and communities);
- (b) identifies the strategic outcomes that apply in the planning scheme and includes measures that facilitate the achievement of the strategic outcomes as required by the Act;
- (c) identifies, balances and integrates the state interests as described in the *State Planning Policy* for the Ipswich Local Government Area;
- (d) integrates and advances the objectives of the *ShapingSEQ* and provides clarity and direction to the *ShapingSEQ* through applying specific outcomes and strategies to the Ipswich Local Government Area;
- (e) identifies the aspirations of the community by implementing the *Advance Ipswich* community plan that provides the framework for managing and co-ordinating the response to growth and change in the Ipswich Local Government Area;
- (f) integrates and coordinates land use and transport planning through implementation of the outcomes of the *City of Ipswich Transport Plan (iGO)* to ensure aligned decision making and an effective and efficient transport network and service delivery in support of the development of the Ipswich Local Government Area;
- (g) facilitates the delivery of the *Ipswich Nature Conservation Strategy* to maintain and create resilient natural environments and ecosystems;
- (h) supports economic development and the creation of jobs through aligning land use planning policy with the *Ipswich Economic and Workforce Development Plan*; and
- (i) has regard to and aligns with other council plans, strategies and programs where relating to land use planning, for example the Waterway Health Strategy, Openspace and Recreation Strategy, Smart City Program and Sustainability Strategy.

(3) Table 3.1 sets out how the draft strategic framework and future planning scheme will integrate and align with the state interests in the *State Planning Policy* that apply in the Ipswich Local Government Area and the *ShapingSEQ*.

Table 3.1 - State Planning Policy and Regional Plan Integration

(4) Table 3.2 sets out how the draft strategic framework and future planning scheme will facilitate the delivery of the key elements of *Advance Ipswich*, *iGO*, the *Ipswich Nature Conservation Strategy* and the *Ipswich Economic and Workforce Development Plan*.

Table 3.2 - Ipswich City Council Strategy Delivery

Note 1: Ipswich City Council Strategy Delivery

Only those elements that can be delivered through planning scheme measures are outlined in Table 3.2.

(5) Consideration and achievement of an appropriate balance between the matters set out in Tables 3.1 and 3.2 has informed the overall planning policy direction and intent for the draft Strategic Framework including the form and distribution of predominant land uses in the Ipswich Local Government Area to meet the needs of the community.

(6) For the purpose of describing the policy direction for the new planning scheme and to assist with the development of the final statutory strategic framework, this draft strategic framework is structured in the following way:

(a) Sections 3.1 to 3.6 - Strategic Framework for Whole of Local Government Area that provide the overarching policy framework and direction expressed spatially for the whole of the Ipswich Local Government Area; and
(b) Section 3.7 - Local Area Frameworks that provide a more detailed policy framework and direction expressed spatially for each of the 30 defined local area strategic planning units.

(7) The draft strategic framework is supported by whole of Local Government Area strategic valuable features and overlay maps, development constraints overlay maps and strategic framework maps, and local area framework maps and figures.

(8) The draft strategic framework in its entirety represents the proposed strategic intent for managing development in the Ipswich Local Government Area and sets out the proposed strategic direction and outcomes to be achieved through the planning scheme.

3.2 Overall Vision

(1) To maintain continuity of policy direction between the community's aspirations as expressed in council's community plan - *Advance Ipswich* and the Ipswich planning scheme, the *Advance Ipswich* vision has been adopted as the vision statement in this draft strategic framework.

3.2.1 Vision Statement

(1) Ipswich has grown and developed around a series of vibrant public transport activated centres and master planned communities.

(2) The city is rejuvenated, positioning the Ipswich city centre as the primary service centre and regional capital of the Western Sub-region.

(3) Ipswich is identifiable as one city incorporating its natural, rural and urban areas. It is a harmonious, safe and tolerant community, drawing together and building upon its rich multicultural diversity.

(4) The city has a unique and clear identity for people who live, work or visit, reflecting its Indigenous, European, pioneering, mining and industrial history.

(5) Character buildings have been retained and are used appropriately.

(6) The more recently developed areas of Springfield, Bellbird Park, Collingwood Park, Redbank Plains, Ripley Valley and the Walloon-Thagoona-Rosewood corridor are integrated with established areas of the city and together provide cohesive neighbourhoods with a diversity of housing, job opportunities and supporting infrastructure.

(7) People are emotionally connected to Ipswich with a strong sense of belonging and pride in the city.

(8) Residents actively participate in community life and those who volunteer are recognised and appreciated.

(9) While, in line with *ShapingSEQ*, the city will grow significantly to a population of 520,000 people by 2041, the City retains an intimate quality with a friendly and engaged community.

(10) The city has places where people of all ages can meet and socialise, gather for events, be entertained and recreate.

(11) The cultural life of the city provides opportunities for the creative arts to flourish. Visual and performing arts and other cultural venues provide the community with a wide range of experiences and a tangible sense of civic pride.

(12) Facilities and services support all members of the community throughout their lives and the city provides a full spectrum of life-long learning opportunities from early childhood to vocational training and tertiary education.

(13) Ipswich is well served by quality educational facilities and services that support the development of the skills and knowledge required for people to pursue rewarding and well-paid jobs.

(14) Innovative business and employment enterprises maximise the opportunities presented by the digital economy and other new technologies.

(15) In the rural hinterland, townships and boutique businesses thrive on tourism, specialised agricultural production, outdoor recreation and other niche markets.

(16) The city has also developed strategic logistic and distribution centres, placing it as an inland port and facilitating the movement of road and rail freight throughout the nation.

(17) Ipswich is tapping into the ever changing domestic, regional, national and global markets and is supported by research facilities and centres of academic and business excellence.

(18) RAAF Base Amberley remains the largest defence facility in Australia, supported by a range of economic and commercial activities, and continues to grow and provide major social, employment and economic benefits to the region, injecting significant capital and operational investment into the local economy.

(19) Jobs growth keeps pace with population growth, with Ipswich's rate of employment higher than the Queensland average, reducing the need for people to travel long distances to work and retains the benefits of local wages and spending within the city, minimising escape expenditure.

(20) Ipswich is a sustainable and ecologically resilient city that forms an integral part of the 'green lungs' of SEQ. Extensive tracts of natural vegetation sustainably support native wildlife.

(21) Waterways are rehabilitated and protected, providing a high standard of water quality, habitat and fauna connectivity and recreational outcomes while at the same time reducing the impact of major storm and flood events.

(22) Green and renewable energy technologies optimise the efficient use of resources and minimise carbon emissions.

(23) Materials recovery (formerly waste) is used as a resource by reducing, reusing and recycling.

(24) Water is recognised as a limited resource and is used sustainably through innovative water harvesting schemes, reuse and recycling opportunities and demand management.

(25) Innovative solutions for mitigating climate variability and increasing community resilience to floods, droughts and bushfires are implemented.

(26) The city's transport network is affordable, safe and reliable with public transport, strategic roads, bikeways and footpaths connecting compact mixed use neighbourhoods with centres, areas of economic activity and supporting services and facilities.

(27) People use the convenient public transport system to access work or education, walk or cycle for local trips and urban development has maximised the opportunities to use public and active transport.

(28) Mixed use and higher density centres have developed around key rail and bus stations, particularly in the Ipswich City Centre, Springfield Town Centre, Ripley Town Centre and at Goodna, Booval and Rosewood.

(29) A range of housing types and densities are provided that meet the needs of residents and allow them to live within their communities throughout their lives and the city continues to be an affordable place to live.

(30) Supporting an active and healthy lifestyle, the city has extensive parks, sportsgrounds and open space areas for residents and visitors to enjoy with an integrated open space network that meets the community's recreation and leisure needs, provides opportunities to connect with nature and creates clear boundaries to help identify residential communities.

(31) The success of the city is an outcome of deliberate long-term strategic planning and sustainable financial management by council in partnership and engagement with the community, businesses, government agencies and non-government organisations and advocacy with key stakeholders and partners.

Note 2: Vision Statement

The Advance Ipswich Vision Statement includes a range of aspirations that may be delivered through different statutory and non-statutory mechanisms, by different levels of government and by a variety of private sector and not-for profit organisations. However, many of the aspirations expressed in the Vision Statement also relate either directly or indirectly to land use planning and can be addressed in the planning scheme, or are needed to be considered in developing the strategies and approaches in the planning scheme to ensure alignment with the non-development related aspirations and the delivery of the overall vision for the city.

The aspirations in the Vision Statement that directly relate to land use planning are addressed in this draft strategic framework through setting a proposed development framework that:

(a) conserves valuable features such as significant natural areas, habitat and vegetation, waterways, agriculturally productive land and places and areas of historic character and cultural heritage significance including to the Indigenous Aboriginal people (refer to section 3.3 Valuable Features);

(b) avoids the inappropriate development of land that is subject to constraints from natural hazards such as flooding, and separates and manages the impacts between incompatible uses and from the impacts associated with the operations of facilities and infrastructure (refer to section 3.4 Development Constraints);

(c) sustainably manages the growth and development of the city by allocating a distribution of land uses and densities across the city with sufficient capacity to accommodate the forecast population and employment growth and to accommodate the required supporting services and facilities (refer to sections 3.5 Growth Management and 3.7 Local Area Frameworks), with a particular focus on:
    (i) a network of mixed use centres that are key employment locations, places where the community come together and within which goods (shops), supporting services and cultural and entertainment facilities are provided;
    (ii) supporting the development of a diverse and resilient economy and the creation of local jobs within the centres, designated business and industry lands and in rural areas;
    (iii) delivering a diversity of housing to meet the needs of the community, primarily in large master-planned communities and through the appropriate development of higher densities within and surrounding centres, railway stations and other stops on high-frequency public transport routes; and

(d) identifies the key strategic infrastructure and facilities that are required to support the further growth and development of the city (refer section 3.6 Infrastructure) including the:
    (i) movement of people and goods within and through the city;
    (ii) parks and other facilities to meet the recreational needs of the community and visitors and support healthy and active lifestyles; and
    (iii) social infrastructure and facilities that provide for human services.

3.3 Valuable features

3.3.1 Preliminary

(1) The natural areas, systems, functions and resources in the Ipswich Local Government Area support biological diversity, enhance overall liveability and community health and resilience, contribute to landscape and scenic amenity and provide for human needs such as supporting air quality and water quality and social and economic development.

(2) The natural areas, though now changed and shared, have a unique importance to the Aboriginal community in continuing their strong association and connection to the area through song, dance, language, stories and the use of cultural and natural resources.

(3) Some natural areas and systems in the Ipswich Local Government Area have been modified over an extended period of time including by:
- (a) urban settlement;
- (b) mining activities, particularly associated with coal extraction;
- (c) forestry activities; and
- (d) agricultural activities including vegetation clearing and land modification for agricultural and pastoral purposes, particularly in floodplain areas.

(4) In the Ipswich Local Government Area there:
- (a) are biologically diverse, ecologically important and attractive natural areas and systems (terrestrial and aquatic) supporting a broad range of fauna, flora and ecological functions that provide ecosystem services in a variety of landscapes and along watercourses; and
- (b) is an integrated network of publicly and privately owned conservation estates and areas, bushland reserves and green areas and corridors that contribute to:
  - (i) the protection of significant vegetation, habitat, environmental features, riparian areas and ecosystems;
  - (ii) the protection of natural features and landscapes, including those of cultural significance for the Aboriginal community;
  - (iii) the scenic amenity and physical attractiveness of the Ipswich Local Government Area;
  - (iv) meeting the recreational needs of the community; and
  - (v) economic activity, particularly for tourism.

(5) Ipswich has a diverse and significant range of historic buildings and features reflecting its history of European settlement that together with the places and areas of cultural significance to the Traditional Owners, makes an important contribution to the overall cultural heritage and identity of the Local Government Area.

(6) The Ipswich Local Government Area contains important natural resources including:
- (a) extensive tracts of rural land that support a range of agricultural activities and production, particularly on higher quality agricultural land generally located in floodplain areas;
- (b) coal reserves that have been mined historically but with further exploration and exploitation of the reserves including for Coal Seam Gas being incompatible with Ipswich's location in South East Queensland and the region's continuing urban growth and ecological sustainability; and
- (c) hard rock, aggregates, clay and other mineral deposits that support construction activities in the region.

3.3.2 Natural environment

3.3.2.1 Natural features and systems

(1) Significant vegetation, fauna and core habitat areas, connecting corridors, watercourses and their riparian corridors and natural systems are to be conserved:
- (a) for their biodiversity and ecological values;
- (b) to support air and water quality improvements;
- (c) to support climate change resilience;
- (d) for their cultural landscape values;
- (e) for their contribution to landscape and scenic amenity;

(f) to support passive recreation; and
(g) for their ecosystem services and contribution to productivity and economic growth.

(2) The most significant natural areas of vegetation, fauna species, habitat for fauna and other natural features such as those associated with watercourses are identified and regulated in different ways by various levels of government:
(a) flora, fauna and their habitat of national significance (Matters of National Environmental Significance) are identified and separately regulated by the Commonwealth Government, primarily under the *Environment Protection and Biodiversity Conservation Act 1999*;
(b) natural values and areas of state significance (Matters of State Environmental Significance) are identified and primarily regulated by the state government under a range of policies, legislation and regulations (Note 3 provides further information regarding the definition and approach to mapping of matters of state environmental significance); and
(c) locally significant flora and fauna and their habitat (Matters of Local Environmental Significance) have been identified and are primarily regulated through the planning scheme (Note 3 provides further information regarding the definition and approach to mapping matters of local environmental significance).

Note 3: State and Local Environmental Significance

Matters of State Environmental Significance:

Matters of State Environmental Significance (MSES) are defined in the *State Planning Policy*, and where possible, are shown indicatively on the state government's *State Planning Policy Interactive Mapping System* (SPP IMS). MSES comprises natural values and areas identified under legislation, regulations and policies including the:

- *Nature Conservation Act 1992*;
- *Environmental Protection Regulation 2008;*
- *Water Act 2000;*
- *Environmental Protection (Water) Policy 2009;*
- *Environmental Offsets Act 2014;*
- *Nature Conservation (Wildlife) Regulation 2006*;
- *Fisheries Act 1994*; and
- *Vegetation Management Act 1999*.

The *State Planning Policy* requires that the state interest and state mapping layers must be appropriately integrated in a local planning instrument and provides that the state mapping layers relating to wildlife habitat, high ecological value waters (wetland), high ecological value waters (watercourse), regulated vegetation and regulated vegetation (intersecting a watercourse) can be locally refined by a local government in a planning scheme (subject to approval by the Planning Minister) in a way that achieves the state interest policy. In addition, protected areas and legally secured offset areas must be integrated.

Although the *State Planning Policy* does not include the Koala Assessable Development Areas (State mapped) when defining matters of state environmental significance, these areas have been considered in the synthesis of mapping to inform the comprehensive mapping of wildlife habitat in the Ipswich Local Government Area.

The areas of MSES included in Strategic Valuable Features Map 1 - Strategic Greenspace Areas and Links are based on a synthesis of the State mapping and which has been further refined in accordance with the *State Planning Policy* having regard to the statutory application of the MSES, and to:

- adjust the MSES boundary in the mapping to reflect the values and areas on the ground where these can be identified, for example, the actual extent of vegetation or the position of a watercourse (it is noted that the State mapping is undertaken at a state wide level and at a resolution that results in it often being insufficiently accurate to apply at the individual lot level);

- remove areas from MSES where a site or area has been further investigated and the characteristics of the site subsequently having been changed through, for example, vegetation having been cleared or an approval having been issued for vegetation clearing (it is noted that the State mapping is updated periodically and that there is a lag between updating the State mapping and clearing or approval of clearing having occurred); and
- reflect the high value Koala habitat as mapped in the *State Planning Policy* Koala Bushland Habitat Mapping where it aligns with council's known biodiversity corridors and is likely to be sufficient to support Koala populations in the long term.

The synthesis of the state mapping is shown on the following maps:
Map 1 - State Government Mapped Water Features;
Map 2 - State Government Mapped Habitat; and
Map 3 - State Government Mapped Vegetation.

Following refinement, the extent of matters of state environment significance in the Ipswich Local Government Area are shown on Map 4 - Matters of State Environmental Significance.

Matters of Local Environmental Significance:

Matters of Local Environmental Significance (MLES) have been identified for the new Ipswich planning scheme as defined in the *Offsets Act 2014*. Local government has jurisdiction over MLES.

A MLES is a matter that is identified in the planning scheme as a prescribed environmental matter. A MLES cannot be the same or substantially the same as a Matter of National Environmental Significance (MNES) or Matter of State Environmental Significance (MSES). This includes MSES that are not prescribed environmental matters in urban areas (for example, remnant 'of concern' regional ecosystems). However, a local government may identify a MLES on land that also has a MSES or MNES provided that the MLES is not the same or substantially the same as the MNES or MSES. For example, a locally important wetland may also be identified on land that contains an endangered species or regional ecosystem, as long as that wetland is not also recognised by the State or Commonwealth Governments as being a MSES or a MNES.

The MLES within the Ipswich Local Government Area have been identified using the following process:

- preparing a draft set of criteria for identifying locally significant species (not including any state or nationally listed threatened species);
- developing a draft list of priority species based on the criteria and draft mapping criteria to identify the likely distribution of each locally significant species;
- an expert independent peer review to confirm the draft criteria, draft species list and draft mapping criteria;
- creation of a scoring system to identify species significance and finalisation of species list based on peer reviewed criteria and significance scoring; and
- production of models for each species likely distribution and aggregation of species models based on significance score.

The spatial distribution and extent of MLES based on the aggregated species models is shown on Map 5 - Matters of Local Environmental Significance.

(3) Strategic Valuable Features Map 1 - Strategic Greenspace Areas and Links shows the key elements that make up the greenspace network including:
  (a) key nature conservation areas containing core habitat areas and significant vegetation in:
    (i) the Little Liverpool Range and Mount Mort;
    (ii) Ebenezer / Mount Forbes;
    (iii) Sapling Pocket; and

(iv) the area extending from Flinders Peak to Karawatha, including White Rock and Spring Mountain;

(b) strategic corridor links including:
  (i) regional cross-border corridors focussed on the areas of:
    (A) the Little Liverpool Range in the west, incorporating areas of Grandchester and Mount Mort;
    (B) Flinders Karawatha in the south incorporating Spring Mountain, White Rock and the volcanic peaks of Flinders Peak, Mount Goolman and Ivory's Rock (the Teviot Range), and
    (C) the D'Aguilar Range to the north east;
  (ii) priority local corridors connecting:
    (A) the northern part of the Little Liverpool Range Corridor to Rosewood along the ridgeline and slopes running across Tallegalla, The Bluff and Ashwell;
    (B) Ebenezer / Mount Forbes to the Flinders Karawatha Corridor through Mutdapilly and Purga; and
    (C) Sapling Pocket through Pine Mountain to Chuwar;
(c) environmental management areas that have a primary strategic function of separating and buffering land uses and that also contain areas of vegetation and provide connections including in association with the Carole Park, Redbank, Dinmore / Riverview, Swanbank / New Chum and Ebenezer / Willowbank Regional Business and Industry Areas; and
(d) patches of other native vegetation that form significant urban and rural nodes and 'stepping stones'.

(4) Within the Ipswich Local Government Area:
(a) significant watercourses have been identified based on their stream order category:
  (i) major watercourses - Stream Orders 8 to 5;
  (ii) medium watercourses - Stream Orders 4 and 3; and
  (iii) minor watercourses - Stream Orders 2 and 1, where it has been determined it is prudent and feasible for them to be retained in their natural form;
(b) state significant wetlands have been identified as designated wetlands; and
(c) indicative buffer (riparian) areas to the significant watercourses (specified as a distance either side of the centre of the watercourse) and designated wetlands (specified as a distance from the edge of the wetland) have been identified to provide the basis for more detailed investigation of the riparian extent and assessment of impacts from development:
  (i) major watercourses - 50 metres;
  (ii) medium watercourses - 25 metres;
  (iii) minor watercourses - 10 metres; and
  (iv) designated wetlands - 100 metres.

(5) Strategic Valuable Feature Map 2 - Watercourses and Designated Wetlands shows:
(a) Major and medium watercourses and associated riparian areas and other features including:
  (i) the Brisbane River and Bremer River;
  (ii) the major creeks including:
    (A) Sandy (Carole Park and Camira);
    (B) Goodna;
    (C) Six Mile;
    (D) Woogaroo (and its tributaries Oppossum and Mountain);
    (E) Blacksnake;
    (F) Western (and its tributaries Spring and Franklin Vale);
    (G) Warrill;
    (H) Purga;
    (I) Ebenezer;
    (J) Bundamba;
    (K) Deebing;
    (L) Ironpot;
    (M) Mihi; and
    (N) Sandy (Tivoli and Chuwar);

(b) other minor watercourses where prudent and feasible to be retained in their natural form including Happy Jack Gulley and O'Dwyer's Gulley; and
(c) State government identified significant wetlands.

Note 4: Green Infrastructure

The areas, links and water features included in Strategic Valuable Features Maps 1 and 2 form part of an overall green infrastructure network that is comprised of both natural areas and features and constructed assets. Further information regarding the green infrastructure network is contained in section 3.6.3(7), Note 10 and Strategic Framework Map 6 - Strategic Green Infrastructure.

(6) The greenspace network is to be conserved through:
(a) inclusion in a zone commensurate with the natural values and features identified and the level of protection required whilst providing for compatible development to occur where appropriate, with the most significant natural areas to be placed in the conservation zone;
(b) avoiding development that has a detrimental impact on important environmental values, areas and systems;
(c) avoiding clearing of significant native vegetation, or where not possible, compensatory native vegetation planting being provided (within the relevant regulatory process e.g. Commonwealth, State or Local Government), with the location of compensatory planting to be guided by, where practicable and appropriate (i.e. the area in which the compensatory planting is provided has the required climatic and soil conditions to support the species being planted), the preference to:
(i) revegetate cleared areas within the Key Conservation and Environmental Areas and Strategic Corridor Links as shown on Overlay Map 1 - Biodiversity to support the consolidation and connectivity of the overall strategic greenspace network; or
(ii) in other locations that further support natural areas and systems, for example within riparian corridors;
(d) development being sensitively designed and located, of an appropriate scale, and mitigated to avoid detrimental impacts; and
(e) linear infrastructure, particularly transport corridors, incorporating where prudent and feasible, fauna movement and crossing measures and other design elements to reduce, as far as practicable, the impact of the infrastructure on fauna, native vegetation and ecological systems.

(7) The Koala (*Phascolarctos cinereus*) is a nationally significant species that is listed as vulnerable and is to be protected and conserved in accordance with the *Ipswich Koala Conservation and Habitat Management Plan* through:
(a) avoiding clearing of the significant core habitat areas that sustainably support viable Koala populations;
(b) where clearing is unavoidable, compensatory planting of Koala supporting vegetation being provided to offset the clearing;
(c) rehabilitation of core habitat areas that support viable Koala populations (including through compensatory planting of native vegetation that supports Koalas being located in these areas);
(d) providing improved connectivity between the core habitat areas that support Koala populations;
(e) where Koalas are present in urban areas, providing where practicable, areas of refuge and connections to allow the Koalas to move to core habitat areas, particularly along significant watercourses and associated riparian corridors; and
(f) where Koala core habitat areas interface with urban development including supporting infrastructure, mitigation measures and treatments to minimise as far as practicable detrimental impacts on Koalas.

(8) To conserve the key elements of the greenspace network, watercourses and designated wetlands in rural areas the:
- (a) clearing of native vegetation within the greenspace network as shown of Strategic Valuable Features Map 1 - Strategic Greenspace Areas and Links, and the riparian areas of the watercourses and designated wetlands shown on Strategic Valuable Features Map 2 - Watercourses and Designated Wetlands is to be avoided;
- (b) fragmentation of rural and conservation land through reconfiguring of lots is to be avoided, with there to be no net increase in the number of lots in the rural area; and
- (c) amalgamation of land or consolidation of property holdings on rural and conservation land is supported.

(9) The natural processes, ecological functioning and health of watercourses are to be conserved and the quality of ground and surface water protected and improved by:
- (a) major, medium and minor water courses, designated wetlands and associated riparian areas where shown on Strategic Valuable Features Map 2 - Watercourses and Designated Wetlands being retained in their natural form (i.e. as an open, non-piped channel with riparian areas) to;
  - (i) maximise ecosystem services for native vegetation, fauna and systems;
  - (ii) achieve required water quality standards to:
    - (A) maintain and improve ecosystem functions and ecological services; and
    - (B) not pose a significant health risk or nuisance to residents; and
  - (iii) enhance visual amenity and recreational activities for residents and visitors;
- (b) where practicable and feasible, other minor water courses shown on Overlay Map 2 - Watercourses and Designated Wetlands, particularly those that have significant native vegetation cover or provide a key connection, being retained in their natural form;
- (c) development being generally located outside the riparian area and works in the riparian area being located and designed to minimise adverse impacts on natural values and features including native vegetation and hydrological systems;
- (d) in areas containing reactive / dispersive soils, surface disturbance being minimised and works undertaken to stabilise channels;
- (e) degraded areas in riparian areas of watercourses and designated wetlands being rehabilitated, including through replanting and other works;
- (f) point sources of discharge into the watercourses being treated to achieve an appropriate water quality standard and the management of the quantity of flows to avoid adverse impacts on hydrology;
- (g) implementing sustainable land management practices, in both urban and rural areas, to achieve no net increase in, and as far as practicable reduce, sediment and nutrients entering the watercourse system; and
- (h) development in non-sewered localities providing on-site waste disposal facilities that meet the acceptable levels of treatment and discharge quality and avoiding areas subject to flooding, stormwater inundation or ground water and aquifer recharge.

3.3.2.3 Air and acoustic environment

(1) The regional topography and airflows effectively funnel air pollutants from the east and west across the Ipswich local government area with the need to effectively manage emissions from development in the Ipswich Local Government Area to minimise as far as is practicable detrimental impacts on air quality.

(2) Noise is generated by a wide variety of activities and infrastructure in the Ipswich Local Government Area and different land uses have different levels of sensitivity to noise, with the need to separate incompatible uses and mitigate impacts.

(3) To achieve an appropriate standard of air quality and noise levels in the Ipswich Local Government Area, land uses and facilities that emit pollutants, odours and noise are to be:
- (a) located in areas designated for such uses;
- (b) separated and buffered from sensitive uses, particularly residential areas;
- (c) designed and incorporate measures to reduce detrimental impacts to acceptable levels; and
- (d) protected from encroachment by incompatible uses, particularly residential uses.

(4) Major transport infrastructure:
   (a) as far as is practicable, is to be designed and located and include measures to reduce detrimental impacts through noise and pollutants on surrounding areas, particularly residential areas, to acceptable levels; and
   (b) development in proximity to major transport infrastructure, particularly residential development, is to be located, designed and include measures to reduce the impacts of the major transport infrastructure to acceptable levels.

3.3.3 Cultural heritage

(1) The Ipswich Local Government Area contains features that are significant to the Traditional Owners and buildings, places and other features of cultural heritage significance associated with its settlement by Europeans that are to be conserved for the important contribution they make to the cultural heritage and identity of the city and supporting social and economic progress.

(2) The features (refer to Note 5) within the Ipswich Local Government Area that are culturally significant to the Aboriginal community include:
   (a) the places and landscapes identified in the *ShapingSEQ* including pathways, a ceremonial place to the north-east of Springfield, a women's place to the south-west of Springfield, mission sites to the south-west of Ipswich, a habitation site in Ipswich and the landscape associated with the area between Purga south-eastwards to and including Flinders Peak;
   (b) the cultural landscapes identified in Overlay Map 3A - Cultural Landscapes;
   (c) the individual places identified in Overlay Map 3B - Places of Cultural Heritage Significance;
   (d) the major and medium watercourses and the wetlands identified in Strategic Valuable Features Map 2 - Watercourses and Wetlands; and
   (e) other features that have not been mapped.

Note 5:

The term 'feature' is not defined in the *Aboriginal Cultural Heritage Act 2003* but does include:

- landscape features such as rock outcrops, caves, areas of biogeographical significance such as natural wetlands, permanent and semipermanent waterholes and natural springs, mountains, hills and mound formations; and
- other features including ceremonial sites; scarred or carved trees; burials; rock art; fish traps and weirs; occupation sites; quarries and artefact scatters; grinding grooves and contact sites and wells.

There is a strong relationship between the occurrence and the likely occurrence of features that are culturally significant to the Aboriginal community and other valuable features within the Ipswich Local Government Area such as the natural features and systems (refer to section 3.3.2.1) and areas of scenic amenity (refer to section 3.3.4).

(3) All development is to take reasonable and practical measures to ensure Aboriginal cultural heritage is not harmed in accordance with the *Aboriginal Cultural Heritage Act 2003*.

(4) Overlay Map 3B - Places of Cultural Heritage Significance identifies the individual places of state and local cultural heritage significance (including Aboriginal cultural significance), identified local places of interest, character areas and landscapes that are significant to Indigenous Aboriginal people within the Ipswich Local Government Area.

(5) Individual places of cultural heritage significance and their settings and character areas are to be conserved with:
   (a) adverse impacts on the cultural heritage significance of state heritage places to be avoided;
   (b) local cultural heritage places, including those of Aboriginal cultural heritage significance, identified through being individually included in the Ipswich Heritage Register or where a pre-1946 building or structure in a character area;

(c) new development in the setting of a cultural heritage place or in a character area being located and designed to avoid or mitigate adverse impacts on the cultural heritage significance of the place and its setting or the character area;
(d) the sympathetic restoration, renovation, maintenance and repair of heritage buildings and structures supported, and demolition and the removal of intact historic fabric to be avoided;
(e) new buildings, signage, works, extensions and alterations to existing buildings within places of cultural heritage significance being sympathetic and respectful of the cultural heritage significance through location, scale and form, design and materials;
(f) where an identified local place of interest and the building is to be demolished or removed, the building is recorded in situ and where removed is to be relocated where possible within the general locality of the original site;
(g) vegetation with cultural heritage significance being protected and maintained by avoiding development that detrimentally impacts on its contribution to cultural heritage, streetscape or amenity, including by inappropriate pruning or disturbance of the root zone;
(h) appropriate adaptive reuse, where the change in use does not detrimentally impact on the cultural heritage significance of the place and is compatible with surrounding land uses, supported to assist in the ongoing viability of the use of the place;
(i) landscape treatments to be in keeping with the place and its setting or character area; and
(j) the encouragement of sensitive design, treatment and location of utility and service infrastructure.

3.3.4 Scenic and visual amenity

(1) Natural features and landscapes, elevated areas (such as mountains, hills and ridgelines), vegetation, rural landscapes and open spaces are elements that contribute to the scenic quality and visual amenity, sense of place and to the identity of the Ipswich Local Government Area.

(2) The Ipswich Local Government Area is bounded to the north, west and south by major mountain ranges and hills that provide a scenic frame to the city and that correspond with areas of identified significant natural values.

(3) Strategic Valuable Features Map 3 - Scenic and Visual Amenity Values identifies the main features that contribute to scenic and visual amenity. These areas include:
(a) Mountains, hills and elevated areas in the Ipswich Local Government Area associated with:
(i) the Little Liverpool Range in the west, incorporating areas at Grandchester and Mount Mort;
(ii) in the south, the areas incorporating Spring Mountain, White Rock, the Grampians and the volcanic peaks of Flinders Peak, Mount Goolman and Ivory's Rock,
(iii) Pine Mountain, Mount Crosby and the D'Aguilar Range to the north east; and
(iv) the ridgeline and slopes running from the northern part of the Little Liverpool Range to Walloon through Tallegalla, The Bluff and Ashwell, Rosewood and Thagoona.
(b) the rural landscape with its mosaic of agricultural and pastoral production lands and pattern of dispersed and separated buildings and settlements;
(c) prominent parts of the system of rivers and major waterways with associated riparian features and vegetation;
(d) prominent individual geographical features in the urban area such as Denmark Hill, Cunningham's Knoll, Ipswich Grammar School Hill, Chermside Road ridgeline, Blackstone Hill and Mount Juillerat; and
(e) major open space and other breaks in the urban areas (for example the former Redbank Rifle Range).

(4) Long distance and local views through urban areas from major vantage points, scenic routes and transport corridors to the elements that contribute to scenic and visual amenity provide a visual connection that is important to both retaining and creating a sense of place and to the identity of Ipswich.

(5) The features that contribute to the scenic and visual amenity of Ipswich and views to and from the features are to be maintained and enhanced through:
  (a) the parts of the Local Government Area outside the urban areas being maintained primarily as natural areas and rural areas;
  (b) development for urban purposes being contained in the designated urban areas:
    (i) with a clear and defined edge to prevent fragmentation of rural land and intrusion of semi-urban development forms into the rural and natural landscapes;
    (ii) to maintain separation between urban and township areas; and
    (iii) to define neighbourhoods to foster a sense of place and identity for local communities;
  (c) rural living areas are to be located, designed and developed in a form and at a density that maintains scenic and visual amenity values and in particular avoids visual intrusion through development on the top of ridgelines;
  (d) avoiding development that detrimentally impacts through its location, form and scale on the features that contribute to scenic and visual amenity;
  (e) where practicable rehabilitating degraded features that contribute to scenic and visual amenity; and
  (f) protecting views from intrusion by development that reduces visual connection through:
    (i) major view corridors to prominent features and areas (for example mountains, escarpments, ridgelines and foothills); and
    (ii) local views to areas of significant open space including rivers, creeks and water bodies.

3.3.5 Natural resources

3.3.5.1 Preliminary

(1) The underlying geology and associated soils in the Ipswich Local Government Area are varied and provide natural resources that support a range of land uses and require careful management.

(2) Natural resources make an important contribution to the Ipswich and regional economy through:
  (a) supporting agricultural production; and
  (b) providing key resources such as hard rock, aggregates, clay and other minerals that support construction activities in the region.

(3) Mining for coal has occurred extensively in the Ipswich Local Government Area in the past but has declined in recent times.

3.3.5.2 Agricultural production

(1) Rural land in the Ipswich Local Government Area supports or is capable of supporting rural production, including:
  (a) growing of crops;
  (b) keeping of livestock;
  (c) forestry; and
  (d) aquaculture.

(2) Agricultural production in the Ipswich Local Government Area makes an important contribution to the local and regional economy and accordingly the protection of Good Quality Agricultural Land will become increasingly important in the future as the viability of agricultural production on marginal land that is impacted by climate change reduces.

(3) Land that supports agricultural production is shown on Strategic Valuable Features Map 4 - Good Quality Agricultural Land is to be protected and managed where not specifically identified in the Local Area Framework for urban purpose or nature conservation to ensure its availability for sustainable agricultural production in perpetuity by:
  (a) development for urban purposes being avoided in the rural areas;
  (b) avoiding development that irreversibly removes from use or impacts on the use or potential use of Agricultural Land Classification Class A and Class B land for agricultural production;

(c) avoiding the fragmentation of Agricultural Land Classification Class A and Class B land and Important Agricultural Land through subdivision, with amalgamation of lots in Agricultural Land Classification Class A and Class B land and Important Agricultural Land being supported; and
(d) rural uses and developments not predominantly for or associated with agricultural production being located and designed to avoid conflict with agricultural production and, in particular, the development of rural housing and creation of rural housing lots to occur only in the identified and designated rural living areas.

(4) Intensive agricultural production activities including intensive animal husbandry and aquaculture are to:
(a) avoid adverse impacts on nearby properties by being located and designed with mitigation measures to contain impacts including from noise, odour and dust to within the property holding on which the production is occurring;
(b) avoid or mitigate the impacts on the use of rural roads; and
(c) be protected from encroachment by incompatible land uses and development.

3.3.5.3 Key resources

(1) Areas containing key resources include:
(a) hard rock in Mount Marrow;
(b) clay in New Chum-Swanbank;
(c) aggregates in Purga; and
(d) whilst not located within the Ipswich Local Government Area, hard rock in Kholo Creek.

(2) Key resource areas are to be protected to allow the extraction and transportation of the resource by:
(a) reflecting the key resource areas and haul routes shown in the *State Planning Policy Interactive Mapping System* in the planning scheme; and
(b) avoiding encroachment by incompatible land uses and development until the resource has been exhausted.

(3) The extraction and transportation from new resource areas that will have adverse impacts on the amenity of existing uses or adverse environmental impacts that cannot be reasonably avoided is not supported unless mitigation measures are included in the operation of the Key Resource Area and haul route to reduce the impacts to an acceptable level.

(4) Coal mining and gas extraction in the Ipswich Local Government Area is incompatible with its location in South East Queensland and the region's continuing urban growth and ecological sustainability:
(a) existing coal mining operations are to be protected from encroachment by incompatible land uses prior to the mining operations permanently ceasing; and
(b) applications for new tenures for exploration or the establishment of new coal mining operations or coal seam gas extraction are not supported.

3.4 Development Constraints

3.4.1 Preliminary

(1) Development constraints in the Ipswich Local Government Area are primarily comprised of natural hazards and impacts from former and continuing human activities, facilities and infrastructure.

(2) Ipswich faces particularly complex challenges in managing development constraints as they occur above, on and below ground, and sometimes involve multiple, overlapping and cumulative impacts.

(3) The development constraints include impacts associated with:
- (a) defence facilities and activities at RAAF Base Amberley and Weapons Firing Ranges and Unexploded Ordinance;
- (b) underground and open cut mining and quarrying operations;
- (c) natural hazards including flooding and stormwater, bushfire, and steep slopes and unstable land;
- (d) major roads and rail corridors, motor sports facilities, sewerage treatment plants, water resource catchments and electricity and pipeline corridors;
- (e) dispersive soils; and
- (f) contamination, for example of the soil, by former and current facilities and activities.

(4) Climate change is expected to lead to sea level rise and increase the frequency and severity of extreme weather events including rainfall and temperatures and the related hazards and risks associated with natural events such as flooding and bushfire.

(5) The occurrence and distribution of the constraints within the Ipswich Local Government Area influences how the city will be developed, with land use designations in the planning scheme having been determined having regard to the impacts from, and risks associated with the constraints.

3.4.2 Defence facilities and activities

3.4.2.1 RAAF Base Amberley and Purga Rifle Range

(1) The state government's strategic airports and aviation facilities mapping in the *State Planning Policy Interactive Mapping System* includes information on the geographic extent of impacts associated with the operation of RAAF Base Amberley and the Purga Weapons Firing Range which have been integrated into Overlay Maps 4A to 4D - Defence Facilities.

(2) Overlay Maps 4A to 4D - Defence Facilities identify the location and extent of impacts of defence facilities:
- (a) in association with the operation of RAAF Base Amberley, the:
  - (i) Australian Noise Exposure Forecast (ANEF) contours;
  - (ii) Obstacle Limitation Surfaces or Height Restriction Zones;
  - (iii) Public Safety Areas;
  - (iv) Lighting Area Buffers and Light Restriction Zones;
  - (v) Wildlife Hazard Buffer Zones;
  - (vi) Building Restricted Areas; and
- (b) noise and public safety separation distances associated with the Purga Rifle Range.

(3) The safety, efficiency and operational integrity of RAAF Base Amberley is achieved though:
- (a) the designation of land uses in the vicinity of RAAF Base Amberley being compatible with the operations of the airbase and relative to the extents of impacts shown on Overlay Maps 4A to 4D - Defence Facilities;
- (b) development being compatible with forecast levels of aircraft noise shown on Overlay Map 4C - Defence Facilities within the 20 ANEF contour or greater and, except where a dwelling house located within an identified existing and committed residential area, being designed to include measures to mitigate the adverse impacts of aircraft noise to the relevant standard;

(c) preventing incompatible land uses and development (including height of buildings, associated lighting and attraction of wildlife) within the areas shown on Overlay Maps 4A to 4D - Defence Facilities; and
(d) avoiding development that increases risk to public safety in a public safety area shown on Overlay Map 4D - Defence Facilities.

(4) To ensure the continued operation of the Purga Rifle Range is not compromised:
(a) incompatible development such as that which is sensitive to noise is to be avoided in the buffer area shown on Overlay Map 4D - Defence Facilities; and
(b) compatible development is to be designed to mitigate the impacts from the rifle range to an acceptable level.

3.4.2.2 Unexploded Ordinance (UXO Areas)

(1) Areas potentially containing unexploded ordinance associated with former Defence Training Areas and Facilities Investigation shown on Overlay Map 5 - Unexploded Ordinance (UXO) Areas and remediation of areas identified as being subject to unexploded ordinance risk will be required before development can proceed.

3.4.3 Mining and Key Resources

3.4.3.1 Mining influence areas

(1) Underground mining occurred historically in the Ipswich Local Government Area and consequently some of the older urban areas of the city are constructed over or adjacent to mine workings.

(2) Open cut mining operations have also occurred extensively in the Ipswich Local Government Area, with some areas that have been mined being redeveloped for other uses including industrial uses.

(3) Land known to be affected by underground mining and open cut mining and their associated 'influence areas' (i.e. draw angle of a mine) are shown on the Overlay Map 6 - Mining Influence Areas.

(4) The impacts of mining are to be effectively managed to avoid unacceptable risk of harm to persons and damage to property by:
(a) zoning land in the planning scheme to avoid incompatible development in areas of unacceptably high hazard;
(b) where development is proposed in areas identified in Overlay Map 6 - Mining Influence Areas detailed geotechnical assessment being undertaken to determine the risks associated with the mining;
(c) incompatible land uses and development being avoided in areas at high risk of subsidence; and
(d) development being located and designed to mitigate the impacts from the mining to an acceptable level including locating permanent structures away from more unstable areas and using building and infrastructure construction methods that accommodate ground movement such as buildings being constructed on adjustable stumps.

3.4.3.2 Key resource areas (KRAs)

(1) Areas containing key resources, processing areas, haul routes and associated separation areas are identified on Overlay Map 7 - Key Resource Areas (KRAs).

(2) Key resources are to be protected to allow the extraction and transportation of the resource by:
(a) avoiding new sensitive land uses and other incompatible land uses within the resource area, processing area and the related separation area of a Key Resource Area;
(b) locating new sensitive land uses where practicable outside the haul route separation (buffer) area with new developments to be designed and to include mitigation measures to reduce the detrimental adverse impacts from the haul route to an acceptable level; and
(c) new development adjacent to the transport route being designed to avoid adversely affecting the safe and efficient operation of the haul route.

3.4.4 Natural Hazards

(1) Natural hazards present significant risks to the safety of people, damage to property and are a significant economic cost, including a recurring cost where events happen repeatedly.

(2) The detrimental impacts of natural events are effectively managed through:
- (a) the planning scheme establishing a framework based on the hazard and the risks associated with the hazard and in accordance with the approach required by the *State Planning Policy*;
- (b) zoning of land and the planning intent for land being compatible with the hazard and associated level of risk; and
- (c) reducing the risk of harm to persons or property from natural hazards through:
  - (i) reducing the likelihood or effects of a hazard;
  - (ii) development being located and designed to include mitigation measures that reduce the inherent risk from the hazard to a tolerable or acceptable level;
  - (iii) adequate evacuation routes and emergency service access being available in a natural hazard event; and
  - (iv) critical infrastructure and sensitive and vulnerable uses requiring the highest level of immunity from natural hazard events being:
    - (A) located outside of the areas of the natural hazard wherever practicable or in areas of lower likelihood and risk; and
    - (B) located and designed to remain functional during and immediately after the natural hazard event.

3.4.4.1 Bushfire risk areas

(1) State identified bushfire hazard areas are shown on the Bushfire Prone Area (BPA) map available in the *State Planning Policy Interactive Mapping System*.

(2) Council has prepared Overlay Map 8 - Bushfire Risk Areas which integrates and replaces the BPA map for the purpose of regulating development pursuant to the planning scheme in the Ipswich Local Government Area to identify and achieve acceptable or tolerable risk for personal safety, sensitive and vulnerable land uses and property in and adjacent to, bushfire prone areas.

(3) The majority of urban growth in the Ipswich Local Government Area will occur in expansion areas (greenfield areas) that have not been previously developed for urban purposes and in which, following development, the fuel loads will have been removed or reduced through clearing of vegetation or through vegetation being managed in urban open spaces and parklands.

(4) As development in expansion areas occurs in stages over extended periods of time Overlay Map 8 - Bushfire Risk Areas identifies 'transitional bushfire risk areas' where the bushfire hazard and risk will ultimately be removed and the bushfire risk at the temporary interface of the bushfire hazard extent is to be managed effectively through separation, for example by a road.

(5) Development other than in a transitional bushfire risk area:
- (a) is generally to be avoided in areas of very high or high potential bushfire risk, particularly for sensitive uses such as residential, or where this is not possible designed to mitigate the risk to a tolerable level; and
- (b) where within a medium potential bushfire risk area or bushfire impact buffer, is to be separated, designed and provided with evacuation routes to mitigate the risk to a tolerable or acceptable level.

3.4.4.2 Difficult topography

(1) Areas of steep slope (between 15% to 20%, 21% to 25% and greater than 25%) that are generally more susceptible to instability are shown on Overlay Map 9 - Difficult topography.

(2) Land within the Ipswich Local Government Area that has previously been developed has been excluded from Overlay Map 9, with the majority of land identified as difficult topography being either vacant or undeveloped land in the Urban Footprint (including both consolidation and expansion areas) or is situated outside the Urban Footprint.

(3) Where land is identified as difficult topography or geologically unstable:
  (a) the zoning (and associated planning intent) of the land reflects the severity of the hazard and associated risk by:
    (i) generally avoiding development and works, including the creation of additional lots, on land with a slope of 21% or greater; and
    (ii) allowing development that maintains the safety of people and property and reduces the associated risk to the development and the surrounding area to an acceptable level on land with slopes between 15% and 20%.
  (b) a detailed, site specific technical assessment will need to be undertaken to determine the geotechnical characteristics of the land and to determine siting and design measures to avoid or mitigate unacceptable risks or impacts to the development and area, with:
    (i) development of land with a slope of 21% or greater occurring where comprehensive land reforming reduces the slope and the associated risk to an acceptable level; and
    (ii) siting and other design mitigation measures on slopes between 15% and 20% to reduce risk through:
      (A) siting buildings and other works in areas with the least slope;
      (B) construction methods that minimise ground and slope disturbance; and
      (C) engineering works to stabilise the land.

3.4.4.3 Flooding and Major Urban Stormwater Flowpaths

(1) The Bremer and Brisbane Rivers, their major creek tributaries and other watercourses and flow paths periodically flood with associated risks to the safety of people and damage to properties.

(2) The location and historic settlement pattern of Ipswich has led to:
  (a) urban development being located in areas at risk of flooding; and
  (b) existing development commitments and associated land use expectations.

(3) The level of risk from flooding based on a range of flood events (likelihoods) has been determined having regard to flood studies and floodplain management studies and plans including:
  (a) *Brisbane River Catchment Flood Study*;
  (b) *Brisbane River Catchment Strategic Floodplain Management Plan*;
  (c) *Ipswich Rivers Flood Studies Update* [being finalised]; and
  (d) other local flood studies.

(4) Overlay Map 10 - Flooding and Major Urban Catchment Flow Paths shows the extent and risk from flooding based on a fit-for-purpose risk framework (refer to Note 6) through delineating the:
  (a) indicative extent of the Brisbane River and Bremer River floodplains based on a modelled Probable Maximum Flood (ranging between a 1 in 90,000 and 1 in 100,000 Annual Exceedence Probability);
  (b) the extent and levels of risk category as:
    (i) High Flood Risk (Major Flood Conveyance) for the rivers and creeks (major watercourses);
    (ii) Moderate Flood Risk (Major Flood Storage) for the rivers and creeks (major water courses); and
    (iii) Low to Extremely Low Flood Risk (Balance Floodplain) from flooding from the Brisbane River and Bremer River;
  (c) Defined Flood Event (horizontal extent) and the Defined Flood Level (vertical height) for rivers and creeks (1 in 100 Annual Exceedence Probability with Climate Change Factor) which has a corresponding spatial extent to the Moderate Flood Risk Category;
  (d) Special Flood Resilient Precincts; and
  (e) Major Urban Catchment Flow Paths.

(5) Flooding hazard and associated risks are to be managed by:
  (a) the zoning of land aligning the development intent with the level of risk whilst also recognising existing land uses, approvals and commitments;
  (b) where located within the Defined Flood Event and the risk is categorised as High (Major Conveyance) all development including filling is to be avoided unless for:

(i) recreation and open space uses or parking where not involving permanent structures that are designed to ensure there is no adverse impact on hydraulic characteristics;
(ii) non-residential development on land where there is a development commitment through the zoning of the land or a development approval and which is designed to mitigate the impacts on the development from flooding as far as is practicable and to ensure there are no adverse impacts on hydraulic characteristics; and
(iii) other works to reduce the flood hazard and risk and that rehabilitate the river or waterway corridor and improve drainage function and hydraulic characteristics;

(c) where located within the Defined Flood Event and the risk is categorised as Moderate (Major Flood Storage):
(i) the intensification of residential uses, including the creation of new residential lots, is avoided unless within an identified Special Flood Resilient Precinct where there is adequate warning time before flooding to allow for evacuation that is designed and constructed to mitigate the risk to a tolerable or acceptable level by:
(A) enabling the self-evacuation of residents and visitors via established evacuation routes external to the site;
(B) the finished floor level of all habitable floor space being above the Defined Flood Level and the additional required freeboard;
(C) maintaining existing flood storage, not impeding flood flows into the site and enabling flood waters to recede from the site;
(D) incorporating flood resilient design and construction methods for building and structures located below the Defined Flood Level;
(E) locating flood sensitive services, connections, utilities (including point of connection), plant and equipment (such as electrical switch-boards, data servers or lift machinery) above the Defined Flood Level and the additional required freeboard or provide protection to prevent water inundation;
(ii) the development of new sensitive and vulnerable uses are avoided and the expansion of established uses are designed to mitigate the impacts of flooding as far as is practicable;
(iii) critical infrastructure is avoided, or where this is not possible, is designed and sited to mitigate the risks and impacts of flooding as far as is practicable;
(iv) non-residential uses reducing the hazard and mitigating risks to the development through siting and design to a tolerable or acceptable level and with uses that would cause significant environmental harm in the event of a flood, for example by requiring the storage of large quantities of hazardous materials, to be avoided; and
(v) filling being avoided unless undertaken as balanced cut and filling (i.e. no importation of fill) and there being no worsening of hydraulic flows or reduction in overall flood storage capacity; and

(d) the areas of the river floodplains not located within the Defined Flood Event (and High or Moderate Flood Risk Categories) being identified as Low to Extremely Low Flood Risk (Balance Floodplain) and as being acceptable for all development except new highly sensitive and vulnerable uses and critical infrastructure that is required to operate during and immediately after a flood event, for example hospitals, emergency services facilities and depots and evacuation centres, which should be developed where practicable outside the floodplain; and

(e) development mitigating the impacts and risks from flooding in major urban stormwater flow paths to a tolerable or acceptable level through siting and design measures and avoid worsening of flooding or drainage impacts on nearby land.

(6) The further intensification of residential uses does not include the development of a Single Residential use on an existing zoned residential lot or rural lot that has a dwelling entitlement.

Note 6: Risk Framework for Managing Development in the Floodplain

Following publication of the findings and recommendations of the Queensland Floods Commission of Inquiry, the state government in collaboration with Ipswich City Council, Brisbane City Council, Somerset Regional Council, Lockyer Valley Regional Council and other stakeholders undertook the *Brisbane River Catchment Flood Study* (Flood Study) and subsequently prepared the *Brisbane River Catchment Strategic Floodplain Management Plan* (SFMP). This work is collectively referred to as the *Brisbane River Catchment Flood Studies* (BRCFS).

Further information regarding the *Brisbane River Catchment Flood Studies* is available from the state government's website at www.qra.qld.gov.au/our-work-resilience-building-flood-resilience/brisbane-river-catchment-flood-studies.

An important aspect of managing flood risk is that no two floods are the same even when the overall chance or likelihood of events of a similar size occurring is the same. The term Annual Exceedance Probability (AEP) has been used to describe the probability (chance or likelihood) of a flood of a nominated size occurring in any year. To account for the variation in flooding that can occur, the *Brisbane River Catchment Flood Study* produced the most comprehensive flood modelling of its kind undertaken in Australia to produce modelling for 11 flood events ranging from highly likely flood events (1 in 10 AEP) through to extremely unlikely flood events (1 in 100,000 AEP).

The Brisbane River SFMP analysed and assessed the combinations of the likelihood of these different sized floods occurring and the levels of hazard based on velocity and depth to identify a series of risk categories, referred to as Potential Hydraulic Risk (PHR). These categories provide a strategic understanding of flooding in the Brisbane River and the lower and middle reaches of the Bremer River (the upper reaches of the Bremer River were not included in the BRCFS and the SFMP) and provide an initial (raw) risk identification.

Five (5) categories of PHR are used to describe the most severe flood risk (PHR1) to the least severe (PHR5). The SFMP considers that at the catchment assessment level and based on the 'raw' risk that:

- the most frequent and severe floods are those characterised by deep and fast flowing water (Conveyance Areas) and generally correlate with risk categories PHR1 and PHR2;
- risk categories PHR3 and PHR4 generally have a major storage function within the floodplain; and
- risk category PHR5 is used to define the lowest potential for flood risk, with the outer extent that corresponds with the 1 in 100,000 AEP used to identify the theoretical extent of a floodplain.

Producing modelling and outputs across the large area of the Brisbane River catchment meant that a 30 metre modelling grid and 15 metre output grid were used. This represents a limitation to the scale at which the information can be applied without further refinement, for example to be able to apply it at the individual property level. Consequently, additional flood modelling (referred to as the Ipswich Rivers Flood Study Update (IRFSU)) has been undertaken that both refines the modelling from the BRCFS as well as expanding the modelling to cover the parts of the Bremer River and other watercourses not covered (with the exception of Blacksnake Creek that does not form part of the Bremer River catchment with the existing flood study used to inform Overlay map 10) and which will produce results at a smaller grid. The preliminary outputs from the IRFSU and other local flood studies have been further refined (to 'smooth' the modelled lines) to provide an improved representation of the flood and risk extents at the individual lot level. Upon completion of the IRFSU the final modelling and outputs will be provided and accordingly, it should be noted that the flood extents and areas of risk shown in Overlay Map 10 will be subject to further refinement.

The broad categorisation of 'raw' risk (the PHR) has been used in combination with the Ipswich Rivers Flood Study Update information (such as velocity, depth and hazard category information) to produce locally refined extents of flood risk (categorised a High, Moderate and Low / Very Low Risk) used in preparing the Draft Strategic Framework and included in Overlay Map 10. The extents identified in each of these risk categories is the best available information on the impacts of different likelihoods of flooding across the Ipswich Local Government Area taking into account the latest understanding of the regional impacts from the Brisbane River Flood Study and the Ipswich Rivers Flood Studies Update. Given the need to have a Defined Flood Event (DFE) and Flood Level (DFL) for the purpose of regulating development and the strong correlation between the area and outer extent of PHR3 and PHR 4 and the 1 in 100 AEP with climate change factor, the extent of moderate risk for the Brisbane River and Bremer River is delineated by the Defined Flood Event (DFE) in Overlay Map 10. Reflecting the difference in modelling for the Brisbane River and Bremer River and the creeks (major watercourses), the Defined Flood Event (DFE) and Flood Level (DFL) generally corresponds to the I in 100 AEP with climate change factors and adjusted by removing the lowest hazard category.

Flood Resilient Precincts have also been identified in Overlay Map 10. Land in these precincts is located within or in proximity to higher order centres and major public transport nodes where higher density residential development would be consistent with achieving appropriate land use outcomes and having regard to the flood risk, evacuation routes and potential to mitigate the risk to a tolerable level through flood resilient design. Flood resilient design, construction and materials can minimise damage caused by flood waters and significantly reduce the time to recover after a flood. Examples include the use of sealable basements, the mix of uses (for example non-residential uses such as car parking, retail or commercial uses on the ground and lower floors with residential units above) and the use of water resistant materials and non-cavity walls. In particular, the mid to high rise development form sought in these precincts provides the opportunity to achieve a flood resilient design response whilst providing a safe vehicular evacuation route.

The combination of Overlay Map 10 and the policy approach outlined in section 3.4.3(5) and (6) provides a strategic policy framework as part of the initial and baseline flood risk assessment and is a precautionary policy approach that is the first step in a risk management framework for development in the floodplain. The approach accords with the requirements of the *State Planning Policy* and aligns with the *Brisbane River Catchment Strategic Floodplain Management Plan* by:

- identifying risks based on an assessment of a range of modelled flood events (ranging from a frequent 1 in 2 Annual Exceedance Probability to extremely unlikely (the Probable Maximum Flood generally defined as the 1 in 100,000 Annual Exceedance Probability) rather than a single defined flood event, such as a "1 in 100";
- identifying risk categorisation being defined having regard to and aligning with the potential hydraulic risk methodology in the *Brisbane River Catchment Strategic Floodplain Management Plan*;
- modelling the Defined Flood Event and Level incorporating a climate change factor aligned with the Intergovernmental Panel on Climate Change's 'Representative Concentration Pathway' (RCP) 8.5 (a sea level rise of 0.8 metres and a 20% increase in rainfall intensity for the year 2090);
- providing an initial determination of the acceptability of development through the designation of land uses (without mitigation) having regard to the development intent of the designations (zoning) and existing development commitments; and
- providing a framework to assess possible mitigation options and determination of the acceptability, tolerability and intolerability of land uses and development (including the ability of different uses and development to appropriately mitigate the risks including through built form response) through local fit-for-purpose flood risk assessments relative to a comprehensive understanding of flood risk and capacity for emergency management, such as evacuation routes.

3.4.5 Other Development Constraints

(1) The effective management of, and response to the impacts from facilities, infrastructure, dispersive soils and contamination is required to achieve:
  (a) the continued safe and effective operation of the facility and infrastructure;
  (b) an appropriate level of safety and amenity in development that is impacted by the facility, infrastructure and contamination; and
  (c) the effective mitigation of the impacts of dispersive soils to ensure that erosion does not adversely impact the environment and water quality or lead to damage to infrastructure, buildings and structures.

3.4.5.1 Major transport infrastructure

(1) State transport infrastructure mapping is available in the *State Planning Policy Interactive Mapping System*.

(2) Council has prepared Overlay Map 11 - Major Transport Infrastructure to identify the location of state transport infrastructure and existing and future state transport corridors in the Local Government Area.

(3) The detrimental impacts from transport infrastructure and corridors is to be managed to ensure that the infrastructure continues to operate safely and effectively by:
  (a) incompatible land uses being separated (including through establishment of a buffer area) from the infrastructure and corridors; and
  (b) sensitive land uses not being located on land that is significantly impacted by transport infrastructure unless the impacts can be mitigated to acceptable levels through separation, siting and other design measures to mitigate the impacts to the relevant standard.

3.4.5.2 Motor sports facilities

(1) Motor sports facilities have been established at Willowbank (Ebenezer) and Tivoli and council has prepared Overlay Map 12 - Motor Sports Buffers to identify the extent of noise impacts from the facilities.

(2) The facility at Willowbank (Ebenezer) accommodates a variety of motor sports activities and entertainment events with its continued safe and effective operation being protected by:
  (a) separation from areas with concentrations of sensitive uses through being located in an area that is predominantly rural / bushland to the east and identified for future regional business and industry development to the north, west and south;
  (b) avoiding encroachment by incompatible land uses that would compromise the operation of the facility; and
  (c) compatible development being designed to mitigate the impacts:
    (i) from the motor sports and events facility on the development to an acceptable level; and
    (ii) from the development on the motor sports and events facility, for example through odours or dust from industrial development.

(3) The facility at Tivoli, whilst expected to be relocated during the plan period, accommodates a variety of motorcycle sports activities with its operation in the interim to be protected by:
  (a) encroachment by incompatible land uses and development, particularly residential uses, being avoided in the buffer area; and
  (b) compatible development being designed to mitigate the impacts from the motor sports facility on the development to an acceptable level.

3.4.5.3 Wastewater treatment buffers

(1) Existing and planned wastewater treatment plants required in the Ipswich Local Government Area to service existing and future development may impact on nearby amenity (particularly residential amenity) through odour and noise emissions.

(2) Council has prepared Overlay Map 13 - Wastewater Treatment Buffers that identifies the extent of the buffer areas associated with the impacts on amenity from these facilities.

(3) Incompatible development, including reconfigurations of land for sensitive land uses (particularly residential), are to be avoided in the buffer areas and compatible development is to be located and designed to mitigate impacts from the plant on the development and to avoid reverse amenity impacts that will impact on the safe and effective operation of the plant.

3.4.5.4 Water resource catchments

(1) The Mount Crosby Water Treatment Plant:
- (a) is the primary source of potable (drinking) water for the Ipswich Local Government Area and other areas of South East Queensland; and
- (b) may be impacted by pollutants, salinity and sediment, with the need for the water quality at the intake on the Brisbane River to be of a high standard.

(2) Overlay Map 14 - Water Resource Catchments shows the catchment areas within the Ipswich Local Government Area that feed into the Mount Crosby Water Treatment Plant intake and other water resource catchments on the southern border of the Ipswich Local Government Area.

(3) The efficient and effective operation of the Mount Crosby Water Treatment Plant and the quality of the treated water is to be maintained through development in the Brisbane River catchment upstream of the intake that may adversely impact water quality:
- (a) being avoided within the Water Supply Buffer Area unless of a form, scale and intensity and mitigated to meet the required standards;
- (b) in the Water Resource Catchment Area the impacts of development are mitigated to meet the required standards; and
- (c) where practicable, the retention of vegetation and rehabilitation of the catchment and particularly in the riparian zones of the Brisbane River and its major tributaries.

3.4.5.5 High pressure pipelines

(1) High pressure gas pipelines are identified on the Emissions and hazardous activities - High pressure gas pipeline map available in the *State Planning Policy Interactive Mapping System* which council has integrated into Overlay Map 15 - High Pressure Pipelines.

(2) A decommissioned high pressure pipeline formerly used for oil transportation (although decommissioned the pipeline easement documentation allows its use for the transportation of other materials) that crosses the Ipswich Local Government Area east to west is also identified on Overlay Map 15 - High Pressure Pipelines.

(3) High pressure pipelines are to be protected from encroachment by development that would compromise the safe and effective functioning of the pipelines by setting back incompatible or sensitive land uses at a distance from the pipeline to manage the risk to personal safety and damage to property.

3.4.5.6 High voltage electricity transmission lines

(1) Major electricity infrastructure and electricity substations that are located in the Ipswich Local Government Area are identified on the Infrastructure - Energy and Water Supply map available in the *State Planning Policy Interactive Mapping System* with Overlay Map 16 - High Voltage Electricity Transmission Lines showing the location of major transmission infrastructure.

(2) High voltage electricity transmission lines are to be protected from encroachment by development that would compromise the ability of the high voltage electricity transmission lines to function safely and effectively.

3.4.5.7 Dispersive Soils

(1) Overlay Map 17 - Dispersive Soils identifies the spatial distribution of the major dominant soil types in the Ipswich Local Government Area based on the Australian Soil Classification Orders.

(2) Sodosols and other clay-rich soils such as Chromosols, Dermasols, Vertosols and some Hydrosols and Kandasols are likely to contain reactive / dispersive soils or subsoils which when exposed to non-saline water can result in gully and tunnel erosion that may damage buildings and infrastructure, and cause suspended sediments in water bodies and waterways.

(3) Development in areas with reactive / dispersive soils is to:
  (a) be designed to minimise as far as is practicable ground disturbance;
  (b) use treatments to disturbed areas to minimise exposure of the soils; and
  (c) employ sediment and erosion controls measures during and post-construction.

3.4.5.8 Contamination

(1) Mining, extractive industries, rural, industrial and land fill activities (both historical and current) have resulted in localised areas of contamination to surface land as well as ground water.

(2) Investigation and appropriate remediation of areas identified as being subject to contamination will be required before developments can proceed.

3.5 Growth management

3.5.1 Preliminary

(1) Ipswich has a distinctive physical form and character derived in part from its geographical setting and landscape characteristics and in part from its development from a series of historic river ports and railway settlements.

(2) The original form of the historic settlements has been expanded and changed through waves of immigration, activities including coal mining and industrial development and historical and natural events as shown in Figure 1 - Historical Timeline.

(3) Development in the Ipswich Local Government Area over time has resulted in a settlement pattern that:
- (a) located development including the Ipswich City Centre on and around the rivers;
- (b) grew around the original port on the Bremer River (now the Ipswich City Centre and surrounding historic areas) and along the railways, particularly the Ipswich to Brisbane line;
- (c) included rural townships such as Rosewood, Marburg and Grandchester;
- (d) from the middle of the 20th century, took the form of car-based suburban development and centres including stand-alone 'big box' shopping centres; and
- (e) from the late part of the 20th century included the development of large master planned communities and some residential densification and redevelopment in centres and around transit nodes.

3.5.2 South East Queensland Regional Plan

(1) The *South East Queensland Regional Plan 2017* (*ShapingSEQ)* integrates the state interests in the *State Planning Policy* at the regional level and provides the overarching statutory land use plan to manage growth in the Ipswich Local Government Area to 2041 through:
- (a) including projections for population, dwelling and jobs growth to be accommodated during the plan horizon;
- (b) identifying the land needed to meet planned urban growth (Urban Footprint regional land use category) and the areas of rural production, natural and landscape value (Regional Landscape and Rural Production Area regional land use category);
- (c) establishing a hierarchy and network of regional activity centres to meet the highest order retail, cultural, commercial and service needs of residents and visitors and to which investment in supporting infrastructure is to be directed;
- (d) in addition to the regional activity centres, identifying regionally significant economic areas including:
  - (i) regional economic clusters;
  - (ii) knowledge and technology precincts ;
  - (iii) major enterprise and industrial areas;
  - (iv) agricultural land; and
  - (v) key resource areas;
- (e) identifying supporting strategic transport and road networks, including locations for intermodal facilities, an integrated and activated public transport network and a strong focus placed on active transport;
- (f) identifying a regional biodiversity network;
- (g) setting goals, actions and strategies that support delivery of the planned outcomes for the region including:
  - (i) the regional growth pattern;
  - (ii) a strong focus on the quality of design and climate responsive design; and
  - (iii) affordable living though diversity in housing choice, prescribing density ranges, delivery of 'missing middle' housing and accessibility to jobs and service; and
- (h) providing sub-regional directions for the Western Sub-region, in which the Ipswich Local Government Area is located, that provide more detailed and specific actions and strategies.

Note 7: Growth Capacity

The *ShapingSEQ* sets a dwelling supply benchmark of providing an additional 111,700 dwellings (to accommodate an additional 319,900 people) between 2016 and 2041 and employment planning baselines of a minimum increase in additional jobs of 60,873 from 67,927 jobs in 2016 to 128,800 jobs in 2041.

The draft strategic framework, including the local area frameworks and precinct maps, is a refinement of the high level strategic outcomes of the *ShapingSEQ* (having regard to the valuable features to be conserved, development constraints, achieving sustainable growth management and the infrastructure to support the growth and development) and sets out the local policy framework for the location, intensity and extent of development in the Ipswich Local Government Area.

The draft Local Area Frameworks include a range of development options (with alternative development densities and land uses) for some areas, council is awaiting feedback from the Community, State Agencies and the Development Industry before it determines a preferred option and prepares the statutory zoning scheme.

The land identified in the Local Area Frameworks and Precincts Maps has a 'planned' capacity that is able to accommodate between 156,000 and 201,000 additional dwellings and 430,000 jobs to meet the dwelling benchmarks and employment baselines as set out in the *ShapingSEQ*.

(2) During the *ShapingSEQ* horizon (to the year 2041) the Ipswich Local Government Area is projected to grow rapidly, predominantly through the development of large, master planned communities and other land in expansion areas, with growth in consolidation areas to be focussed on compact, mixed use development in and around higher order centres and major transit nodes and in enterprise and industry areas within the Urban Footprint.

(3) Whilst the *ShapingSEQ* identifies Potential Future Growth Areas in Lanefield / Grandchester and Glamorganvale to the north of Marburg:
   (a) it is not needed to accommodate the dwelling supply benchmarks or employment planning baselines included in the *ShapingSEQ* and therefore will not be required to be released to accommodate growth within the planning horizon of this planning scheme; and
   (b) the potential of the areas for future urban growth is to be protected.

3.5.3 Sustainable land use

(1) Growth and development is to be managed in the Ipswich Local Government Area to:
   (a) be ecologically sustainable;
   (b) respond appropriately to the state interests in the *State Planning Policy* that are relevant to the Ipswich Local Government Area (refer to Part 3.1 Preliminary and Table 3.1);
   (c) align with, and integrate the outcomes of the *ShapingSEQ* (refer to Part 3.1 Preliminary and Table 3.1);
   (d) give effect to the Advance Ipswich vision statement (refer to Part 3, 3.2 Overall Vision);
   (e) achieve the sustainable and efficient use of land, including cost effective and efficient servicing of urban development land (refer to Part 3, 3.6 Infrastructure);
   (f) where possible, retain and protect valuable features (refer to Part 3, 3.3 Valuable Features) and respond appropriately to development constraints (refer to Part 3, 3.4 Development Constraints); and
   (g) progress the implementation of the land use aspects of council's strategies and programs (refer to Part 3, 3.1 Preliminary and Table 3.2).

(2) The overall pattern and distribution of land uses is shown on Strategic Framework Map 1 - Settlement Pattern and has been determined based on the *ShapingSEQ* with:
  (a) development for urban purposes limited to land within the Urban Areas;
  (b) development within the Rural Areas limited to non-urban purposes;
  (c) development of townships limited to the Township Areas; and
  (d) RAAF Base Amberley to accommodate ongoing defence forces uses.

3.5.3.1 Land use transect

(1) The Ipswich Local Government Area has developed as a network of connected urban centres and areas, towns and villages within a wider rural hinterland, each with their own identity, form and function, and with the Ipswich city centre being the civic and cultural heart of the city and the western growth corridor of South East Queensland.

(2) A sense of place is established through the development of high quality, individually identifiable places that foster community pride and promote attractive, safe and sustainable environments.

(3) Land uses in the Ipswich Local Government Area exhibit a progression from natural and largely undeveloped areas into grazing, agricultural and rural lands, through to suburban and to more urban environments including centres and special use areas, as shown in the transect (place model) in Figure 2 - Ipswich Transect.

Figure 2 - Ipswich Transect

Rural Areas				**Urban Areas**					
Natural Places **Important for their greenspace, ecological and landscape values.**	**Rural Places** **Important for their rural production and contribution to landscape setting.** **Includes rural living areas and smaller rural settlements.**			**Urban Places** **Important for their role in accommodating a range of urban land uses and activities and within which the SEQRP forecast population and employment growth is to be met.** **Includes larger rural towns.**					**Special Use Places** **Important in accommodating large single uses or those that do not fit within other place types.** **Includes industry areas.**
Land dominated by the natural environment and containing mostly undisturbed and unmodified natural conditions (in both public and private ownership).	Agricultural and Pastoral Land Areas of better quality soils on which rural production is or could be carried out.	Rural Living Areas Unserviced rural lots that provide specifically for non-urban living.	Rural Townships Smaller unserviced settlements with a limited mix of uses and detached housing.	Rural Towns Larger serviced settlements with a mixed-use, low scale main street focus, and a range of housing, local employment and community facilities and services.	Established Suburban Neighbourhoods Mainly car dominated, lower density and lower diversity of uses. Includes areas of historic 'timber and tin' character housing.	New Suburban Neighbourhoods Walkable local areas, that are people, rather than car focussed and contain a choice of housing types, are public transport activated and have access to local services.	Urban Neighbourhoods Walkable, higher density, mixed use local areas, that are people, rather than car focussed, contain a wider choice of housing types and range of uses than a suburban neighbourhood and are public transport activated.	Centres A series of places within a hierarchy reflecting the role of the centre and its service catchment. Centres accommodate concentrations of activities and services that meet the needs of residents and visitors. Higher order centres (Regional Activity Centres) are high density, mixed-use (including residential), walkable places focussed on a public transport hub. The Ipswich City Centre is the cultural and administrative heart of the city. Other centres are generally lower intensity and offer a lower mix of uses and range of services, reflecting their position in the centres hierarchy and their service catchment. Some centres may take the form of a 'stand-alone shopping centre'.	Larger sites and areas that have an intensity and form that reflects the use and activities including: (1) Regional business and industry areas: Carole Park Redbank Dinmore / Riverview Swanbank / New Chum Wulkuraka Ebenezer (2) Local business and industry areas (3) Motor sports / events facilities (Willowbank / Ebenezer) (4) RAAF Base Amberley

(4) The transect recognises that whilst each place has its own character and mix of uses and there are areas of overlap and transition between, they share common characteristics with other places that determines the location and the distribution of places within the transect based on:
  (a) function;
  (b) special qualities;
  (c) intensity;
  (d) built form / housing form; and
  (e) land uses and density supporting and integrating with transport modes, with a focus on public and active transport.

(5) The Ipswich Transect:
  (a) reflects and supports ecological sustainability;
  (b) utilises smart growth principles by providing the framework for aligning land uses and density of development with infrastructure investment, for example in public transport infrastructure;
  (c) has informed the location and distribution of land use designations (including density clusters and future zones) as outlined in the Local Area Frameworks and Precinct Maps (refer to section 3.7) using the:
    (i) Hierarchy of Centres in Table 3.3;
    (ii) locational criteria for other employment and non-residential uses in sections 3.5.4.2 Employment, 3.5.4.3 Business and industry areas and specialist nodes and 3.5.4.4 Rural economy; and
    (iii) Residential Typologies and Densities in Table 3.4; and
  (d) describes at a strategic level the development outcomes intended, with the use of land and intensity and form of development to be consistent with its location in the Ipswich Transect.

(6) Development in accordance with the Ipswich Transect will create complete communities and enhances the overall liveability within the Ipswich Local Government Area by creating places where people can:
  (a) live affordably in well designed, high quality environments;
  (b) easily access employment, goods and services by a variety of transport modes;
  (c) take part in recreational and cultural activities; and
  (d) live in communities that are cost-effectively and efficiently serviced with an appropriate standard of infrastructure and have access to reliable and affordable transport.

3.5.4 Centres and employment

3.5.4.1 City of Centres

(1) Owing in part to its historic development pattern but also as a function of commercial, economic and social efficiency, Ipswich has developed as a City of Centres. These centres serve as the primary meeting places and service centres for residents, and are important places of employment and commerce that is a major contributor to overall economic productivity.

(2) Centres vary in size, diversity of uses and function depending on their location, accessibility, extent of service catchment and the needs of the populations they service.

(3) The *ShapingSEQ* identifies a regional activity centres network that serves the current and future economic and social needs of the community and business and that drive productivity, collaboration and economic growth, comprising:
  (a) the Capital City Centre (Brisbane);
  (b) Principal Regional Activity Centres;
  (c) Major Regional Activity Centres;
  (d) Principal Rural Activity Centres; and
  (e) Major Rural Activity Centres.

(4) Within the Ipswich Local Government Area the *ShapingSEQ* identifies the following Regional Activity Centres; these centres are also identified as 'great places':
   (a) Ipswich City Centre as a Principal Regional Activity Centre - the cultural and administrative heart of one of the oldest cities in Queensland servicing the Ipswich Local Government Area and the western corridor of SEQ that operates as a significant transport interchange focussed on rail, bus and active transport connections and which is being revitalised into a modern mixed-use city centre including high density housing, cultural, administrative, health and education uses while retaining its rich history and character;
   (b) Springfield Town Centre as a Principal Regional Activity Centre - a mixed-use centre including high density housing developed as part of the Springfield master-planned community, focussed on a main street and education and health precincts, with major community assets such as the railway station, parklands and lagoon and which services the wider eastern suburbs in the Ipswich Local Government Area and adjacent Local Government Areas;
   (c) Goodna Centre as a Major Regional Activity Centre - a renewed, compact mixed-use town centre that services the north-eastern suburbs of the Ipswich Local Government Area with access to major rail and highway connections and open space network; and
   (d) Ripley Valley Town Centre as a Major Regional Activity Centre - a vibrant new town centre servicing the Ripley Valley master-planned community, focussed on a public transport hub, a main street and town centre parklands.

(5) The network of activity centres identified in the *ShapingSEQ* is supported by a network and hierarchy of lower order centres. The network of centres (Principal, Major, District, Local, Neighbourhood and Rural Centres) in the Ipswich Local Government Area is shown on Strategic Framework Map 2 - Centres and Employment Land, with the hierarchy set out in Table 3.3.

Table 3.3 - Hierarchy of Centres

Centre	Function	Locations
Principal Centre	Provide key focal points for employment and services of regional significance including professional, health, education, cultural and recreational services and incorporating high density living. They also serve as creative knowledge hubs and give their work force and resident catchment access to high-order comparison and convenience retail, hospitality functions and cultural and entertainment facilities, supported by existing and planned dedicated public transport that are key nodes in the regional public transport system.	• Ipswich City Centre; and • Springfield Town Centre
Major Centre	Provide focal points for sub-regional employment and sub-regional services and incorporating high density living. They contain business and related activities, cultural and entertainment facilities and support comparison and convenience shopping that meets the needs of their sub-regional catchments and are developed around public transport stations.	• Goodna Centre; and • Ripley Valley Town Centre

District Centre	Provide for a large variety of business, community, entertainment, professional and comparison and convenience retail uses to service the population of the district including: (a) a broad range of higher order retail, community and cultural facilities;. (b) mid-order professional office, business, financial and personal services; (c) district or local entertainment and recreation; (d) health care facilities; (e) local or district community facilities; and (f) are located on public transport and road corridors.	• Booval; • Brassall; • Brookwater; • Karalee; • Redbank Plains; • Redbank Plaza; • Rosewood; • Springfield Fair; • Yamanto; • Ripley East (future); • Ripley West (future); and • Walloon (future)
Local Centre	Provide a limited variety of commercial, community and local convenience retail uses to service local residents.	A network of conveniently located local centres ranging from 2,000m^2 to 6,000m^2 Gross Floor Area. The indicative locations of existing and planned local centres are shown on Strategic Framework Map 2 - Centres and Employment Land.
Neighbourhood Centre	Provide a small variety of local convenience retail uses to service the daily needs of residents in the immediate neighbourhood (generally within a walkable catchment).	A network of conveniently located neighbourhood centres with up to 2,000m^2 Gross Floor Area. The indicative locations of existing and planned neighbourhood centres are shown on Strategic Framework Map 2 - Centres and Employment Land.
Rural Centre	Provide convenience retail and local commercial and employment activities to service the needs of the township and the surrounding rural districts.	Marburg and Grandchester

(6) Centres are to be developed to sustainably and efficiently meet the needs of the community by:
- (a) being located, of a size and providing a variety of uses, facilities and services appropriate to their position in the overall hierarchy of centres;
- (b) uses, facilities and services being developed in accordance with the network of centres and the hierarchy of centres, with:
  - (i) out-of-centre development of uses and facilities that are of a scale and type that would potentially undermine the role and function of a centre or the hierarchy of centres to be avoided; and
  - (ii) uses, particularly retail and commercial uses, and other facilities and services being developed in the appropriate centre relative to their scale and type, with uses and facilities that are a scale and type that would undermine the role and function of other centres, for example by being located in a lower order centre, to be avoided;
- (c) being designed to integrate and connect the uses, facilities and services within the centre and the centre to its service catchment;

(d) being accessible and able to be moved through by a variety of modes of transport including public transport, cycling and walking, commensurate with the centre's location and its position in the hierarchy of centres;
(e) providing well designed and high quality buildings, public realm (including streets) and open spaces to maximise the functioning of the centre, comfort, safety and amenity through the:
    (i) sensitive treatment of landmark features, main approach routes, gateways and edges;
    (ii) protection, integration and sensitive treatment of places of cultural heritage significance;
    (iii) maintenance and framing of important view corridors and townscape elements;
    (iv) provision of distinctive and high quality architectural, streetscape and landscape treatments to enhance amenity, including visual amenity, and shading;
    (v) activating key frontages and public spaces, particularly where there is high pedestrian movements, including through incorporating street level windows and locating on-site car parking to the rear of buildings;
    (vi) incorporation of Crime Prevention Through Environmental Design (CPTED) principles within the design of buildings and spaces (including parking areas); and
(f) being adequately and efficiently serviced with supporting infrastructure, particularly public and active transport infrastructure including end of trip facilities and facilities that support changing between modes of transport, with a strong focus placed on investment in infrastructure to support the development of the Principal and Major Centres.

(7) Centres will need to respond to changes in demographics, technology and the format and the methods of delivery of goods and services overtime, however:
(a) there is no expectation that a centre will grow to a point where it will change its position in the hierarchy of centres from its current position as set out in Table 3.3 other than the size and function of some Neighbourhood Centres may increase overtime to that of a Local Centre where an increase in the population to be serviced occurs and the elevation of the centre in the hierarchy is appropriate;
(b) it is anticipated that all the Principal, Major and District Centres have the capacity for further expansion and diversification within the bounds established by the centres hierarchy, with the exception of the Brassall and Redbank Plaza District Centres which are constrained by their existing site and catchment areas; and
(c) the development of new higher order centres or changes to the current network of centres or the hierarchy of centres will need to be justified and may need to be informed by an economic impact assessment that demonstrates the need for the new centre or a change in a centre's position in the hierarchy of centres and that the change will not detrimentally impact on another centre or the hierarchy of centres.

3.5.4.2 Employment

(1) Historically, the economy of the Ipswich Local Government Area was primarily based on railway engineering and other manufacturing, mining, rural production and services to support the resident population.

(2) The economy of the Ipswich Local Government Area has been impacted overtime, and will continue to be impacted by local, national and international trends that are resulting in major changes to the structure of the economy and employment activities including:
(a) globalisation and increasing global connectedness;
(b) population growth and changing demographics;
(c) increasing resource dependency and depletion;
(d) increasing mobility of people and the labour force;
(e) changing technology and methods of production; and
(f) changing investment and financing models, markets and institutional structures.

(3) In responding to these trends and recognising South East Queensland's position as Australia's eastern global gateway to major markets in Asia and elsewhere, the *ShapingSEQ* identifies economic advantages in key export oriented industries that will drive employment and the economy within the Ipswich Local Government Area including:
(a) knowledge, education and creative industries;
(b) food production and agribusiness;
(c) energy and resources;

(d) tourism; and
(e) advanced manufacturing.

(4) The Ipswich Local Government Area also benefits from other locational and competitive advantages:
  (a) that are associated with:
    (i) overall liveability and affordability attracting new residents that continue to support a relatively young demographic profile / average age of the population and the workforce;
    (ii) a significant supply of expansion (greenfield) residential and business and industry land;
    (iii) established defence related uses and the associated opportunities for further development of supporting uses and related supply chains, particularly for:
      (A) RAAF Base Amberley which accommodates a significant number of defence forces personnel and defence related activities as well as a number of supporting technical industries such as aviation and aeronautical industries, aircraft maintenance and engineering; and
      (B) the military vehicle construction, testing and maintenance facility at Redbank;
    (iv) its large rural hinterland that supports a diverse range of rural activities and uses;
    (v) its gateway function between the urban areas of South east Queensland and Brisbane and the rural hinterland that extends into the Darling Downs and accessibility to the national highway and railway network, including the planned Inland Railway, that supports transport and logistics and the development of inter-modal freight facilities;
    (vi) university campuses and hospitals and allied medical facilities / precincts that support the delivery of educational and health service delivery and research and development opportunities; and
    (vii) tourism, sporting and major event facilities and attractions including:
      (A) national and regional attractions such as the North Ipswich Railway Workshops Museum, Queensland Raceway and other facilities and activities in the Willowbank (Ebenezer) motorsports and events precinct, Ipswich Art Gallery, Queens Park and Robelle Domain;
      (B) a broad range of small to medium sized sporting facilities and tourism attractions distributed across the City, including the Cabanda / Rosewood Railway Line, accommodation, bed and breakfasts and rural farm stays;
      (C) local government and privately operated nature-based tourism, eco-tourism and adventure sports, such as the facilities at Ivory's Rock, Old Hidden Vale and Woodlands; and
      (D) a rich and diverse cultural heritage, for example, the heritage buildings and historic streetscape in the 'Top of Town' precinct in the Ipswich City Centre;
  (b) will support further economic activity and employment in other key industries and sectors that are in addition to those identified in the *ShapingSEQ* including:
    (i) property and construction;
    (ii) retail;
    (iii) financial and other professional services;
    (iv) social assistance and health care;
    (v) education and training;
    (vi) defence industries;
    (vii) transport and logistics; and
    (viii) advanced manufacturing.

(5) The *ShapingSEQ* identifies:
  (a) Major enterprise and industrial areas as accommodating medium and high impact industries and other employment uses associated with or having access to state transport infrastructure, that are major drivers of economic growth and that are of a significant size or have the potential to expand to provide for business and industry clusters of regional and state significance; and

(b) Regional Economic Clusters (RECs) as areas where there are synergies across important economic and employment areas (regional activity centres, knowledge and technology precincts and major enterprise and industry areas) that contain a concentration of significant employment activity and that in the Ipswich Local Government Area include the:
  (i) Ipswich REC - including the Ipswich City Centre (Principal Regional Activity Centre) and knowledge and technology precincts associated with the university campus and private and public hospitals and the major industry and enterprise areas of Wulkuraka / Karrabin, Amberley and Ebenezer;
  (ii) Springfield REC - the Springfield Town Centre (Principal Regional Activity Centre) and knowledge and technology precincts associated with the university campus and private hospital; and
  (iii) South West Industrial Corridor REC (part) - extending from western Brisbane to include the major industry and enterprise areas of Carole Park, Redbank, Bundamba / Riverview, Swanbank / New Chum and including the centre at Goodna (Major Regional Activity Centre).

(6) To support the sustainable development of the Ipswich Local Government Area by increasing economic productivity and employment, the following key outcomes are to be achieved:
  (a) maximising employment self-containment to improve access to local jobs by residents and reduce the length of travel time and distances to access employment;
  (b) maximising expenditure (with associated 'multiplier' benefits) within the Ipswich Local Government Area;
  (c) expanding and diversifying the economy of the Ipswich Local Government Area including increasing highly skilled and paid employment;
  (d) making land available (through zoning and supporting infrastructure planning and delivery) to ensure that there is adequate capacity to accommodate the projected development of economic and employment uses having regard to the locational and competitive advantages of the Ipswich Local Government Area and its position in South East Queensland to increase productivity and the value of exports and to provide local services to the resident population;
  (e) maintaining flexibility in land use policy and development assessment to accommodate economic restructuring, for example, allowing for the use of business and industry land and commercial land for emerging uses (for example manufacturing using 3d printers or gyms) where compatible with the continuing use of the business and industry area or centre and does not detrimentally impact on surrounding and nearby uses, particularly sensitive uses;
  (f) prioritising and leveraging the economic enabling infrastructure to support the synergies created by the relationship between the land uses, particularly in the Regional Economic Clusters, the major enterprise and industrial areas and the Principal and Major Centres;
  (g) providing local business and industry land to support the development of low impact industry and service and trade uses primarily servicing the residents of the Ipswich Local Government Area;
  (h) encouraging and facilitating home based working and businesses subject to not having an unacceptable detrimental impact on the amenity of the area or nearby sensitive land uses;
  (i) facilitating increased learning and training opportunities through supporting the development of educational facilities; and
  (j) wherever practicable, business and industry uses:
    (i) use clean production techniques;
    (ii) utilise renewable resources in production including recycled water and renewable energy; and
    (iii) manage and use waste as a resource.

Note 8: Key Employment Locations

The additional jobs to meet the *ShapingSEQ* minimum employment planning baselines (refer to section 3.5.2) will primarily be located in the Centres (capacity for 226,000 jobs) and the business and industry areas and specialist activity nodes (capacity for 241,000 jobs).

3.5.4.3 Business and industry areas and specialist activity nodes

(1) As well as showing the network of centres, Strategic Framework Map 2 - Centres and Employment Land shows the location and extent of the business and industry areas and specialist activity nodes in the Ipswich Local Government Area including the:
   (a) Regional business and industry areas (major enterprise and business areas) at:
      (i) Carole Park;
      (ii) Redbank;
      (iii) Bundamba / Dinmore / Riverview;
      (iv) Swanbank / New Chum;
      (v) Wulkuraka / Karabin; and
      (vi) Ebenezer / Willowbank;
   (b) local business and industry areas;
   (c) specialists activity nodes at RAAF Base Amberley and the facilities and activities at the Willowbank (Ebenezer) motorsports and events precinct; and
   (d) the extent of the Regional Economic Clusters.

(2) Regional business and industry areas:
   (a) are to accommodate high, medium and low impact industries, with high impact industries to be located centrally to maximise separation distances and transitioning to lower impact uses on the edge to reduce the potential for impacts on surrounding land uses outside the regional business and industry area;
   (b) if located in a regional business and industry investigation zone, may be developed subject to resolution of development constraints and servicing requirements, and in situations where these cannot be resolved may be limited to land extensive or low to very low yield activities that have minimal building requirements or may not be appropriate for development;
   (c) reflecting their accessibility to the strategic freight network, will accommodate large scale transport and logistics uses, and where on a railway line, may accommodate an inter-modal freight terminal;
   (d) will accommodate larger scale (both in terms of building size and land requirements) business and industrial uses;
   (e) have a defined buffer area that is to be maintained by avoiding business and industrial uses and activities being established in the defined buffer area or encroachment by sensitive land uses;
   (f) may include the development of large format single retail uses where it is demonstrated that:
      (i) no other site is available in an appropriate level of centre that can accommodate the use;
      (ii) the location is appropriate relative to access from the service catchment and overall pattern of urban development, for example, it is not in a location that is remote from the urban population in the Local Government Area;
      (iii) it will not potentially undermine the role and function of a centre or the hierarchy of centres; and
      (iv) it will not adversely impact on the function of the regional business and industry area and the operation of existing and planned industrial uses, including through 'reverse-amenity' impacts; and
   (g) may accommodate other uses where they are compatible with the function of the area and are either:
      (i) ancillary to, or provide support to regional business and industrial uses; or
      (ii) supporting infrastructure facilities.

(3) Local business and industry areas:
   (a) provide a mix of compatible business and industry uses including commercial, service and trades and appropriate low impact manufacturing that support, and are within close proximity to, Major or Local Centres;
   (b) if a local business and industry investigation zone, may be developed subject to resolution of development constraints and servicing requirements, and in situations where these cannot be resolved may be limited to land extensive or low to very low yield activities that have minimal building requirements or may not be appropriate for development;
   (c) compliment and do not undermine the centres network; and

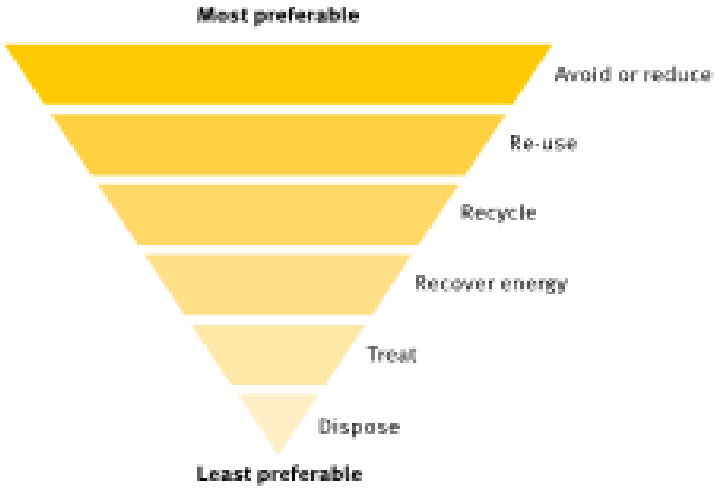
(d) are of a scale and form, located and designed to mitigate adverse impacts on surrounding uses, particularly sensitive land uses, to an acceptable level and where possible avoid environmental risks and environmental nuisance to people and property.

(4) Specialist activity nodes comprise larger sites and areas that have an intensity and form that reflects the use and activities of the site and area and offer specific major economic development opportunities:
- (a) RAAF Base Amberley and adjacent properties to the south and west:
  - (i) comprise a mix of public and private land primarily focussed on and around the substantial Commonwealth land holdings which currently support national defence activities;
  - (ii) while defence activities on the Commonwealth lands are exempt from the provisions of the planning scheme, is planned to integrate as far as is practicable the defence and civilian activities;
  - (iii) is primarily developed for defence purposes relating to the operation of the Amberley Airbase and for other compatible or allied commercial, business and industrial activities, particularly relating to aeronautical engineering, research and development including joint defence and civilian activities;
  - (iv) accommodates the increasing defence activities on the Amberley Airbase through compatible supporting and allied uses being established adjacent to the Airbase where:
    - (A) consistent with the operational requirements and security of the Airbase and mitigate development constraints including risks from flooding;
    - (B) located, of a scale and form and designed to mitigate impacts on the amenity of the surrounding area, particularly that of the nearby Willowbank Township; and
    - (c) suitably serviced with infrastructure including major transport access, water and sewerage;
- (b) the Willowbank (Ebenezer) motorsports and events precinct:
  - (i) is located in an established Noise Buffer Area that manages the impacts from noise emanating from the site and that provides the opportunity for further:
    - (A) motorsports facilities and activities to be established;
    - (B) holding noise generating events such as concerts and music festivals; and
    - (C) the development of supporting facilities including temporary accommodation and camping sites to cater for visitors; and
  - (ii) is located within the Ebenezer Regional Business and Industry Area and in which allied motorsports and specialist engineering uses may be established.

3.5.4.4 Waste

(1) Waste is to be managed within a ‘circular economy’ model and waste management hierarchy:
- (a) to avoid and minimise the amount of waste being produced through sustainable consumption and production;
- (b) to support reuse, resource recovery and recycling and maximise the associated economic benefits of managing waste as a resource including through the establishment of specialised industrial and business uses;
- (c) using waste as a source for energy; and
- (d) treating and disposing of waste, particularly through landfill, as a ‘last resort’ with the development of landfills to be generally avoided.

Figure 3 - Waste Management Hierarchy



(2) The occurrence of former open cut mining voids located within the Ipswich Local Government Area has resulted in the establishment of waste activities including landfills and compost manufacturing, particularly in the regional business and industry areas of Swanbank / New Chum and Ebenezer / Willowbank.

(3) Waste activities in general, and landfills and compost manufacturing in particular, where not appropriately located, designed and operated can result in significant adverse impacts on sensitive land uses and other sensitive receiving uses, surrounding properties and the environment through:
- (a) reducing air quality through odour and dust;
- (b) noise;
- (c) reducing water quality, including by dewatering former mines;
- (d) risks associated with fire and ground subsidence;
- (e) reduced visual amenity including when viewing from private properties and from public roads and recreation areas;
- (f) emission of substances that are harmful to public health; and
- (g) degraded environmental values including vegetation and habitat and impacts on fauna.

(4) Strategic Framework Map 3 - Waste Activity and Buffer Areas shows within the Swanbank / New Chum and Ebenezer / Willowbank regional business and industry areas:
- (a) land that has a minimum separation distance from existing and planned sensitive land uses and other sensitive receiving uses of 750 metres as Waste Activity Areas; and
- (b) the remaining land as Waste Activity Buffer Areas.

(5) Waste activity uses may only be developed providing:
- (a) landfills, other than where solely containing clean earthen material:
  - (i) there is a demonstrated need for the additional landfill capacity above that already approved;
  - (ii) are limited to within the identified Waste Activity Areas shown on Strategic Framework Map 3 - Waste Activity and Buffer Areas, with landfills outside of the Waste Activity Area to be avoided; and
  - (iii) are developed and managed in a manner that:
    - (A) establishes and maintains a buffer to sensitive land uses, particularly residential areas, and includes other measures that mitigates environmental impacts from light, noise, odour and dust from the landfill on the sensitive uses;
    - (B) limits filling to the top of the former mining voids and retains vegetation to manage the potential visual impact of the landfill; and
    - (C) effectively manages environmental impacts, particularly on water quality and watercourses and air quality, to required standards;

(b) enclosed compost manufacturing is located within the identified Waste Activity Areas shown on Strategic Framework Map 3 - Waste Activity and Buffer Areas, with the development of enclosed compost manufacturing outside of the Waste Activity Areas to be avoided;
(c) unenclosed compost manufacturing is avoided throughout the Local Government Area;
(d) waste to energy facilities are co-located where practicable with existing or planned power generation stations and are located to have access to the electricity grid and provide the opportunity for combined heat and power generation to be utilised by high energy users such as industrial activities; and
(e) waste activity uses are of scale and are designed and managed to mitigate adverse impacts and risk to sensitive land uses, other sensitive receivers, surrounding properties and the environment to an acceptable level.

3.5.4.5 Rural economy

(1) The Ipswich Local Government Area has an extensive Rural Area that supports a strong and diversified rural economy with a range of important rural industries and economic activities including:
(a) agricultural production comprising:
(i) crop growing;
(ii) keeping of livestock;
(iii) forestry; and
(iv) aquaculture;
(b) horse training, breeding and agistment;
(c) new and emerging specialised rural industries such as viniculture and hydroponics; and
(d) nature-based, eco and adventure tourism and recreation.

(2) To strengthen the rural economy and its contribution to economic productivity, diversification of rural uses and activities is supported where:
(a) the type, scale and form of development is consistent with its location in the Ipswich Transect and protects and maintains the rural character, amenity and environmental values of the site and nearby properties;
(b) it involves innovative farming practices or value adds to rural production including through 'on-farm' processing of produce from the property;
(c) involves the direct selling of agricultural produce and rural products from the property where they are grown or produced;
(d) diversifies and supports a rural business, for example, by providing tourism accommodation or a tourism attraction where related to the primary rural business;
(e) where involving intensive farming such as feedlots and poultry sheds, is of a scale, designed and located away from areas of rural housing and other sensitive uses (for example recreation areas and tourism facilities) so that impacts from the use are mitigated to an acceptable level; and
(f) involves the establishment of businesses that relate to rural and eco-tourism activities that are undertaken in the Rural Area.

3.5.5 Housing

(1) The *ShapingSEQ* provides the regional direction and framework for the development of housing and includes:
(a) a projected population and number of dwellings that is to be accommodated in the Ipswich Local Government Area;
(b) related dwelling supply benchmarks for urban consolidation and expansion areas, with the majority of the projected population for the Ipswich Local Government Area to be accommodated in expansion areas;
(c) a focus on fairness relating to access to transport and the integration of land uses and infrastructure to address socio-economic disadvantage and consideration of overall energy costs and real costs to the broader community; and
(d) goals, elements and strategies to sustainably accommodate the growing population by matching housing location with a more sustainable urban form, and encouraging housing diversity that supports changing lifestyles, demographics and housing preferences and that focus on:

(i) a diversity of housing being delivered to meet the changing make-up of the population, community needs and lifestyles, providing housing choice and that is affordable (with a particular emphasis on supporting the delivery of the 'missing middle' housing typology), supporting the provision of housing types along the housing continuum from high needs supported housing, social housing and a range of market housing forms, sizes and tenures;
(ii) urban development using land and infrastructure efficiently in a compact urban settlement pattern and form;
(iii) improving the affordability of living through higher density residential development being located within the walkable catchments of railway stations and other high frequency public transport stops, and employment and services in centres; and
(iv) creating high quality, well designed and climate responsive communities.

(2) The quantity, types and tenures of housing constructed will need to meet the projected population growth and the needs of residents, including groups with specific housing needs such as the aged, vulnerable and disadvantaged persons, people with disabilities and Aboriginal and Torres Strait Islander people.

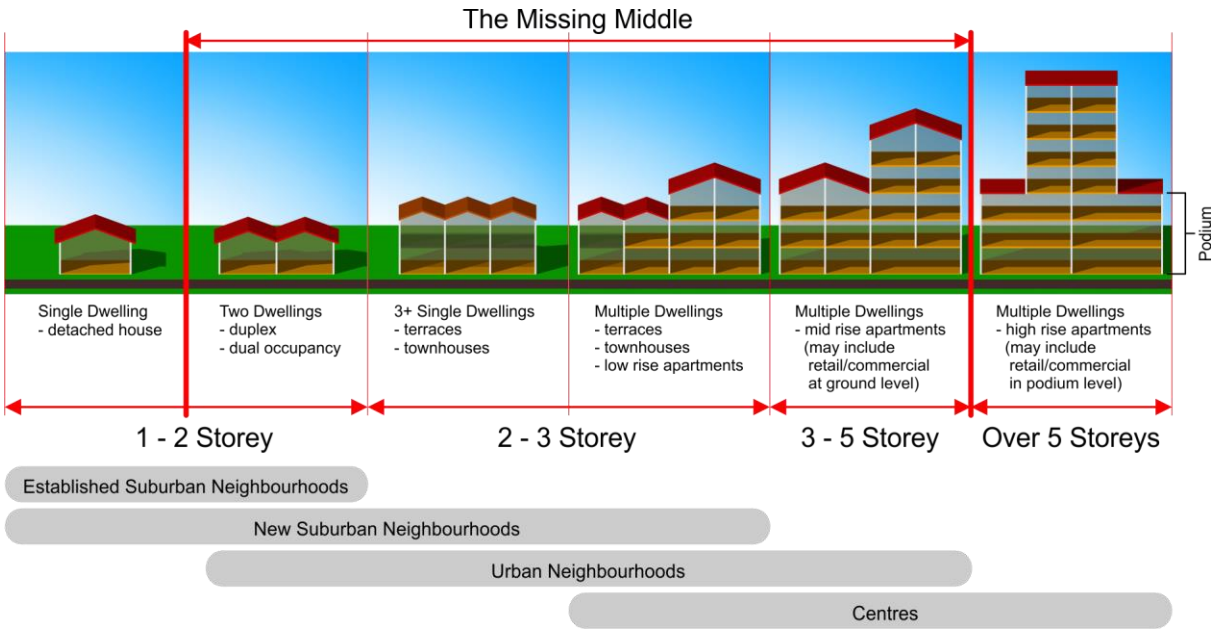
(3) The allocation of the residential zones and provisions in the planning scheme:
(a) support the delivery of affordable housing and provide choice in housing through supporting the development of a diversity of housing types, forms, sizes, densities (including lot sizes) and tenures in appropriate locations;
(b) support affordable living outcomes by people living close to employment opportunities, transport and facilities and services, and
(c) reduce social exclusion and disadvantage by integrating low cost and social housing within residential areas.

(4) Housing demand is to be met:
(a) through residential uses being developed in the Urban Area:
(i) primarily in large master-planned communities and other expansion areas including:
(A) the Springfield development and the eastern suburbs of Augustine Heights, Bellbird Park, Redbank Plains and Collingwood Park;
(B) Ripley Valley and Deebing Heights; and
(C) along the western railway corridor from Walloon to Rosewood; and
(ii) in consolidation areas focussed in and around higher order centres and in locations with good access to public transport;
(b) limited residential development outside the Urban Area; and
(c) by identifying an adequate supply of suitably serviced or serviceable land in the Local Government Infrastructure Plan to accommodate the projected urban residential growth.

(5) Strategic Framework Map 4 - Housing Areas shows the distribution of land identified to accommodate the diversity of housing to meet the projected population growth and housing needs and to support the efficient and cost effective provision of state government infrastructure, council trunk infrastructure, other supporting infrastructure and utilities, in the:
(a) Urban Areas comprising:
(i) Suburban Neighbourhoods;
(ii) Urban Neighbourhoods; and
(iii) Centres; and
(b) Rural Areas comprising:
(i) Rural Living Areas; and
(ii) Townships.

(6) Based on the type, form and density and accessibility to public transport, employment, services and amenities, residential uses are to be:
(a) developed in the appropriate position within the Ipswich Transect (refer to Figure 4 - Missing Middle Housing Typologies and Position in the Ipswich Transect); and
(b) appropriately located in an area as shown on Strategic Framework Map 4 - Housing Areas.

Figure 4 - Missing Middle Housing Typologies and Position in the Ipswich Transect



(7) Where development is located within the walking catchments for high-frequency public transport stations and stops or to a higher order centre, higher intensity forms of housing may be achievable where consistent with the established or planned character of the surrounding area.

(8) Table 3.4 - Residential Typologies and Densities shows the residential lot sizes, dwelling densities and number of storeys achievable within each Residential Precinct in the Urban Area, grouped within the transect typologies as follows:

(a) Suburban Neighbourhoods include the Large Lot, Established Suburban, Character Low Density and New Suburban Precincts;

(b) Urban Neighbourhoods include the Character Mixed Density, Character Mixed Use, Low - Medium Density and Medium Density Precincts and may include High Density Precincts where located in proximity to high-frequency public transport stations and stops; and

(c) Centres include Character Mixed Density, Character Mixed Use, Low - Medium Density, Medium Density and High Density Precincts, with the appropriate density provided in accordance with the centre's position within the Centres Hierarchy.

Note 9: Housing Diversity

In the past, the majority of residential growth within the Ipswich Local Government Area has been delivered predominantly in the expansion (greenfield) development areas and with some subdivision of lots in the established suburban areas. The dominant housing typology that has been constructed has been single dwellings, with only limited construction of multiple dwellings.

The strategy and approaches to residential development included in this draft strategic framework supports increased diversity in the housing typologies and particularly the construction of the missing middle housing typologies in the Ipswich Local Government Area by:

(a) maintaining a predominance of single dwellings on a variety of lot sizes within the established suburban neighbourhoods, rural living areas and on rural lots;

(b) providing for a higher mix of duplexes, terraces, townhouses and low-rise apartments in new suburban neighbourhoods; and

(c) supporting the development of mid-rise and high-rise apartments in Urban Neighbourhoods and Centres (within both the consolidation (existing urban) areas and expansion (greenfield) areas).

(9) Residential uses in the Urban Area are to be developed in the typology and at the densities consistent with those set out in Table 3.4 - Residential Typologies and Densities providing the development is:

(a) of a scale, form, density and design that is consistent with existing or planned development and the existing or preferred character of the area and surrounding properties;
(b) of a high quality design, enhances the overall amenity of the area, responds to the sub-tropical climate of the Ipswich Local Government Area and appropriately addresses and is integrated with the public realm and the transport network; and
(c) serviced by appropriate infrastructure and utilities, including residents having appropriate access to parkland and other recreation spaces where on-site private open space is minimal including single dwellings on lots less than 300m^2 and medium and high density residential development.

Table 3.4 - Residential Typologies and Densities

Precinct (Transect) Typology	**Precinct Designation**	**Indicative Lot Size Range (m^2)**	**Minimum Lot Size (m^2)**	**Dwellings / Hectare *1**	**Number of storeys**
Suburban Neighbourhoods					
Large Lot (Acreage)	LL1	4000 - 6000	4000	1 - 2.5	1 - 2
Large Lot (Half Acre)	LL2	2000 - 3000	2000	3 - 4	1 - 2
Established Suburban	ES1	1000 - 1500	1000	7 - 10	1 - 2
Established Suburban	ES2	800 - 900	800	8 - 12	1 - 2
Established Suburban	ES3	600 - 700	600	10 - 16	1 - 2
Established Suburban	ES4	450 - 550	450	12 - 22	1 - 2
Established Suburban (mixed lots)	ES5	450 - 1000+	450	7 - 22	1 - 2
Established Suburban (unsewered)	ES6	No further subdivision			
Character low density	CL1	1000 - 1500	1000	7 - 10	1 - 2
Character low density	CL2	800 - 900	800	8 - 12	1 - 2
Character low density	CL3	600 - 700	600	10 - 16	1 - 2
Character low density	CL4	450 - 550	450	12 - 22	1 - 2
Character low density	CL5	450 - 1000+	450	7 - 22	1 - 2
New Suburban	NS1	300 - 500	***2**	15 -25	1 - 2
New Suburban (constrained)	NS2	***3**	***3**	3 - 15	1 - 2

Urban Neighbourhoods and Centres					
Character mixed density	CMD			20 - 40	1 - 2
Character mixed use	CMU			20 - 40	1 - 2
Low - medium density	LMD			20 - 40	1 - 2
Medium density	MD1			30 -50	1 - 2
Medium density	MD2			50 - 75	2 - 3
Medium density	MD3			50 - 100	2 - 5
High density	HD1			75 - 150	3-5+
High density	HD2			100 - 150	5-10
High density	HD3			150 - 400+	10+

***1** The number of dwellings per hectare is expressed as either a:

(i) net density (land area of roads and local parks removed) where the Neighbourhood Typology is generally located in consolidation areas that are predominantly developed and the further construction of new roads and parks is limited; or

(ii) gross density (englobo land area without roads or local parks removed) where the Neighbourhood Typology is generally located in expansion areas that are predominantly undeveloped and the further construction of roads and local parks will be required.

***2** Minimum lot size is to be determined based on overall subdivision layout and transect principles. Lots less than 300m^2 are to be located within 200m of a local or district level recreation park that contains a playground and a kick-a-bout area and preferably within 400m of an existing or proposed bus stop, corner store, local or neighbourhood centre.

***3** Lot size and range are to be determined based on appropriately responding to individual site constraints (for example slope, drainage or significant vegetation).

(10) Future Investigation Areas (Emerging Communities) are identified as being potentially suitable for urban development including for housing, subject to detailed investigation, with:
- (a) the development of the area to generally align with the strategy and broad land use designations in the relevant Local Area Framework;
- (b) the location of different housing types, forms and densities to be determined through detailed investigation and set by a land use concept master plan or other approved master plan and which may subsequently be reflected in the zoning of land; and
- (c) residential uses to be developed in accordance with the master plan and zones.

(11) Reflecting that full urban services and infrastructure are not available in the Rural Areas:
- (a) residential development is generally limited to a single dwelling on a rural lot; and
- (b) the reconfiguring of land to create new lots in the Rural Area is avoided unless:
  - (i) in an unconstrained Rural Living Area as shown on Strategic Framework Map 4 - Housing Areas;
  - (ii) the lot size and configuration is consistent with the prevailing size of lots and pattern of subdivision in the area; and

(iii) there being no net increase in the number of lots within the Rural Area by the creation of an additional lot only occurring following a corresponding amalgamation of lots in the Rural Area and the transfer of a dwelling entitlement from the amalgamated lots to the additional lot.

(12) Residential development within the Township Areas of Grandchester and Calvert;
- (a) is generally limited to a single dwelling on a residential lot where of an adequate size and dimensions to accommodate on-site waste treatment;
- (b) new residential lots created are to be of adequate size and dimensions to accommodate onsite waste treatment and maintain the prevailing subdivision pattern of the township; and
- (c) is to be located, of a form and designed to maintain the character and amenity of the township.

3.5.6 Other significant land uses

(1) There are a number of sites and areas within the Ipswich Local Government Area where the future use of the land cannot be definitively determined, with these special opportunity areas including:
- (a) land that performs a transitional or buffering function;
- (b) where the land provides a variety of use and development opportunities that require further detailed investigation and may require market feasibility assessment; or
- (c) where there is a need to facilitate a flexible approach to uses and works which is responsive to valuable features and constraints.

(2) Where development is proposed in a special opportunity area it should be located, of a type, designed and managed to:
- (a) be compatible with and maintain the amenity and character of the land uses and activities in the surrounding area;
- (b) maintain the safety of people, buildings and works; and
- (c) be serviced with necessary infrastructure.

3.6 Infrastructure

3.6.1 Preliminary

(1) The delivery of necessary infrastructure networks, facilities and works that are integrated with land use planning and servicing development is fundamental to supporting sustainable growth in the Ipswich Local Government Area and to ensure that the needs of the community are met.

(2) Infrastructure networks, facilities and works that are necessary to support development include:
- (a) transport;
- (b) parks and recreation facilities;
- (c) social infrastructure and community facilities;
- (d) stormwater drainage;
- (e) water supply;
- (f) sewerage;
- (g) power and energy; and
- (h) telecommunications and digital infrastructure.

(3) The *State Planning Policy* places a focus on the integration of infrastructure with land use planning including significant plans and initiatives by different levels of government to:
- (a) promote the efficient and flexible use of existing and planned infrastructure;
- (b) realise the economic, social and environmental benefits of infrastructure investment;
- (c) ensure proper consideration is given to planning for infrastructure and optimise its location to maximise accessibility to facilities and services and productivity improvements; and
- (d) ensure existing and planned infrastructure is protected from development that would compromise the ability of infrastructure and associated services to operate safely and efficiently.

(4) The integrated planning and delivery of infrastructure and development is identified in the *ShapingSEQ* as being necessary to deliver the outcomes of the Regional Plan, and which informs the State Infrastructure Plan to coordinate and prioritise state government transport, energy, water, digital and social infrastructure to meet the needs of South East Queensland.

(5) The overall urban settlement pattern and form, including location, mix of uses and densities of development, have been based on the efficient, co-ordinated, cost effective and equitable provision of supporting infrastructure (existing and planned) that is integrated with and supports the outcomes of the *State Planning Policy*, *ShapingSEQ* and the planning scheme by aligning:
- (a) the location, form and density of development with infrastructure capacity and servicing to optimise the use of the infrastructure and maximise the cost effectiveness of investment in infrastructure, with development being located:
  - (i) in consolidation areas where adequate infrastructure exists or only requires limited augmentation;
  - (ii) in expansion areas for urban development where infrastructure networks and facilities have been planned;
  - (iii) in areas with limited infrastructure, to be consistent with the limit in the infrastructure, for example in unsewered areas lot sizes being large enough to accommodate on site treatment; and
  - (iv) to avoid areas unable to be adequately, efficiently or economically serviced by necessary infrastructure;
- (b) Commonwealth, State and local government infrastructure planning and delivery where relevant;
- (c) the infrastructure planning and delivery for water and sewerage in the Water Distributor-Retailer's Water NetServ Plan with the land use outcomes in the planning scheme and with council's trunk infrastructure network planning in the Local Government Infrastructure Plan;
- (d) the delivery of infrastructure, for example for power and telecommunications, by other providers;
- (e) the standards of service for infrastructure networks and facilities to ensure an appropriate and equitable level of service is provided across the whole of the Ipswich Local Government Area; and

(f) the timing of delivery of infrastructure with demand and growth to enable and service development and meet the needs of the community in a timely manner.

3.6.2 Transport

(1) Transport networks and facilities are funded and constructed by all levels of government and by the private sector to facilitate the movement of people, goods and materials.

(2) The *ShapingSEQ* seeks to shift the approach from demand-based 'predict and provide' transport infrastructure planning and investment, particularly in relation to building road capacity, by:
- (a) integrating transport infrastructure with complimentary land uses and densities to increase the share of trips made by cycling, walking and public transport;
- (b) considering social equity in land use and transport planning;
- (c) using technology to improve the efficiency, reliability and capacity of transport;
- (d) providing extended and reliable high-frequency public transport connections to improve accessibility and create more efficient and functional urban environments; and
- (e) considering the demands of the whole freight supply chain network when making land use decisions.

(3) The *ShapingSEQ* identifies strategic transport infrastructure to be delivered at the regional and sub-regional levels (for example through the State Infrastructure Plan and the Regional Transport Plan) to support growth and development in the Ipswich Local Government Area including:
- (a) the Ipswich to Springfield Public Transport Corridor (including the extension of the public transport corridor to Ripley Valley) as priority region-shaping infrastructure that supports the take-up of expansion areas including higher densities close to planned stations and which will reduce demand on the Ipswich Motorway;
- (b) a strategic public transport system at 2041 that includes high-frequency public transport connections:
  - (i) from Ipswich via Yamanto, Ripley and Springfield to Darra along the Ipswich to Springfield Public Transport Corridor;
  - (ii) from Ipswich to Darra on the alignment of the current railway line;
  - (iii) from Ipswich to Rosewood on the alignment of the current railway line;
  - (iv) a road-based north-south connection between Yamanto and Brassall via the Ipswich City Centre;
  - (v) along the Cunningham Highway from the interchange with Redbank Plains Road to Dinmore;
  - (vi) a road based connection between the Ipswich City Centre and Springfield Central along Redbank Plains Road;
  - (vii) investigation of the railway line between Rosewood, Laidley, Gatton and Toowoomba for public transport;
- (c) a strategic road and freight system at 2041 that includes:
  - (i) the existing freight road corridors provided by the highway network incorporating the Cunningham Highway, Warrego Highway and Ipswich Motorway;
  - (ii) a future road connection between the Warrego and Cunningham Highways to the west of Amberley (the Western Ipswich Bypass);
  - (iii) investigation of a freight link between the Cunningham Highway at Ebenezer / Purga to the Logan Motorway;
  - (iv) the existing freight rail corridor along the current alignment of the Toowoomba to Brisbane railway that runs from Grandchester to Gailes; and
  - (v) a future freight rail corridor linking the existing railway to the west of Rosewood through Ebenezer to Bromelton (the Southern Freight Rail Corridor and route for the proposed Inland Rail), with a future intermodal terminal identified in the Ebenezer Regional Business and Industry Area.

(4) The City of Ipswich Transport Plan ('iGO') provides the framework for developing a safe, effective, affordable, equitable and socially inclusive transport system in the Ipswich Local Government Area through:
- (a) setting out the Objectives, Key Outcomes and Key Actions across a number of transport policy focus areas to achieve the vision "Ipswich's transport system is safe and reliable and provides for the sustainable movement of people and goods for all travel modes";
- (b) supporting the:

(i) Ipswich Local Government Area being developed as a '20 minute city' where access to high level goods, services and facilities as well as employment are within 20 minutes travel time of where people live;
(ii) creation of '10 minute neighbourhoods' where a range of basic everyday goods, services, recreation and social interaction opportunities can be accessed within a 10 minute walk, cycle or public transport ride from where people live;

(c) providing a framework to support the integration of land use planning and development with transport routes and services to:
(i) align land uses and densities of development with transport modes, routes, high-frequency public transport stations and stops and other facilities to ensure they mutually and appropriately support accessibility, modal shift and optimal development outcomes; and
(ii) reduce travel and trip demand by reducing trip lengths through minimising distances between trip origins and destinations and increasing the opportunity for linked trips to reduce the number of trips made by providing multiple facilities and services in accessible locations;

(d) supporting the sustainable movement of people, goods and freight and reducing reliance on the private motor vehicle by:
(i) creating a comprehensive multi-modal transport network that effectively connects and supports places of business and commerce, work, human service provision and living, and the movement between these places within the Ipswich Local Government Area and to areas outside the Ipswich Local Government Area;
(ii) connecting and integrating the railway, road and active transport networks, services and facilities to provide easy travel by, and across the different networks and modes of transport; and
(iii) facilitating the movement of freight by rail and on the identified and protected strategic freight routes, and avoiding freight movements on the local road network unless necessary to service uses at the local level and where achieving an appropriate balance between freight efficiency, community safety, amenity and environmental outcomes;

(e) integrating the transport infrastructure and networks planning and initiatives by other levels of government including those in the *ShapingSEQ*, State Infrastructure Plan and Regional Transport Plan; and

(f) identifying major and other transport infrastructure projects and actions in addition to those in the *ShapingSEQ*, State Infrastructure Plan and Regional Transport Plan that will support the sustainable, effective and efficient growth and development of the Ipswich Local Government Area.

(5) The key strategic components of the transport network in the Ipswich Local Government Area:
(a) are shown on Strategic Framework Map 5A - Strategic Transport Network and Strategic Framework Map 5B - Strategic Active Transport Network;
(b) will be supported by a transport system comprising:
(i) a network of roads and streets;
(ii) a network of on-road and off-road cycle paths and pedestrian paths, with a focus on priority routes within:
(A) the Principal and Major Centres; and
(B) the typical walking and cycling travel catchments (as outlined in the Table within (7) below); and
(iii) public transport routes, stations and stops.

(6) The Local Government Infrastructure Plan:
(a) identifies council's trunk road network (arterial and sub-arterial roads) that is required to support the planned growth of the Ipswich Local Government Area;
(b) sets out the standard of service to be achieved for the identified trunk roads;
(c) sets an indicative sequence and prioritisation for construction based on forecast growth and demand from development;
(d) provides the basis for funding the network through the levying of charges and equalising the costs across all development from which a demand arises; and
(e) does not include:
(i) highways, motorways and other roads such as state controlled roads which are the responsibility of other levels of government;

(ii) strategic cycle and pedestrian paths other than where they form part of a trunk infrastructure road; and
(iii) streets (including major collector streets) that provide access to and from developments.

(7) Active transport is an integral component of the transport system and plays an important role in providing connections, particularly at either end of trips by public transport and over shorter distances:
(a) cycling and walking have typical travel catchments that reflect how far people are prepared to travel:

Mode	Distance	Time	Typical Walking Catchments
Cycling	2km	6 minutes	N/A
	3km	9 minutes	N/A
	5km	15-20 minutes	N/A
Walking	400m	5 minutes	Bus stop and local shops
	800m	10 minutes	Railway station and major centre
	1.2km	15 minutes	Principal centre

(b) is an affordable and socially inclusive mode of transport;
(c) can be beneficial to health through supporting physical activity, and reduce carbon emissions and pollution levels and have less impacts on amenity relative to motorised forms of transport;
(d) provides a cost effective means of connection including linking places where people live to local services and facilities, public transport hubs and employment areas, and for movement within higher order centres; and
(e) the typical walking catchments provide a basis for determining land use mix and density distributions relative to transport and service accessibility;

(8) The reduction of the use of the private motor vehicle and increasing the use of public and active transport will be supported by:
(a) as far as is practicable, the integration of public transport modes and services in co-located and connected interchanges;
(b) the provision of active transport end-of-trip facilities within major developments and at key destinations; and
(c) parking being provided and managed, for example, by reducing the level of on-street and on-site car parking provision in locations that are within the walking catchments of high-frequency public transport stations and stops and within Principal and Major Centres.

(9) Roads and streets are to be designed and constructed to appropriately prioritise modes of transport through:
(a) complying with the Ipswich Road and Street Hierarchy (refer Table 3.5) that:
(i) defines the primary function of roads and streets; and
(ii) shows the vehicular and pedestrian priorities based on the ‘link and place function’ approach to ensure that traffic is managed appropriately by showing where priority is to be given to pedestrians and local movements and where priority is given to vehicular through movements;
(b) providing a safe environment through being designed and treated to manage the speed of vehicular movements to support the link and place function, with lower design speeds to be achieved in areas where priority is to be given to pedestrians;
(c) being of an appropriate geometry to accommodate bus movements, the dedication of priority travel lanes for buses where practicable, particularly on identified high-frequency public transport routes, and the provision of safe and accessible bus stops that have shade and protection from the rain;
(d) including dedicated cycle lanes that are appropriately designed and protected where practicable to provide safety and appropriate priority to cyclists;
(e) footpaths being of sufficient width to accommodate pedestrian movements, and generally to be constructed to the full width of the verge along the key pedestrian routes within the Principal, Major and District Centres;
(f) using signalisation and other design measures at the key intersections where priority needs to be given to public transport, cycle and / or pedestrian movements over other vehicle movements; and

(g) providing a comfortable pedestrian and cycling environment, with shading where practicable and appropriate to its location in the Ipswich Transect and the link and place function, particularly along the priority pedestrian routes within the Principal, Major and District Centres.

Table 3.5 - Ipswich Road and Street Hierarchy

<table>
<tr><th colspan="2">Classification</th><th>Primary Purpose</th><th>Link and Place Functions</th></tr>
<tr><td rowspan="2">Roads</td><td>Motorway / Highway

Arterial

Sub-arterial</td><td rowspan="2">Movement

Access</td><td rowspan="2"> 
</td></tr>
<tr><td>Streets</td><td>Major collector

Minor collector

Access Street

Laneway</td></tr>
</table>

(10) Where not provided as part of the road and street network, walking and cycling infrastructure should:
- (a) be constructed where it provides a connection within the planned active transport network;
- (b) be integrated with the open space network where practicable and compatible with the use of the open space for recreational and environmental purposes, and does not detrimentally impact on the amenity of surrounding sensitive land uses through, for example, lighting or noise outside the time of use of the open space;
- (c) be designed and constructed to meet required standards and to meet the needs of the intended users in line with its purpose and function, including being of an appropriate width and vertical and horizontal geometry (grades of slope and alignment); and
- (d) maximise as far as practicable the use of trees for providing shading.

(11) New transport connections and infrastructure are to be located and designed to:
- (a) in existing developed areas, apply design standards that achieve the functional requirements for the transport infrastructure as far as is practicable within existing transport reserves to minimise the need to acquire additional land and impacts on existing communities and development;
- (b) avoid or mitigate the impacts caused by the severance of communities and natural systems including significant fauna movements and habitat areas;
- (c) minimise impacts, as far as practicable, on identified heritage character places and areas of indigenous cultural significance; and
- (d) avoid or mitigate impacts on the amenity of existing development, particularly sensitive uses, to an acceptable level.

(12) Where future transport corridors and facilities have been identified or designated, they are to be protected from encroachment by development and sensitive uses that may adversely affect the construction or operation of the transport infrastructure.

3.6.3 Parks and recreation facilities

(1) Parks and recreation facilities form an important part of a connected, multi-functional and integrated green infrastructure network that:
- (a) comprises both publicly (council and state government) and privately owned and managed land and facilities;
- (b) supports improved health outcomes by increasing recreation opportunities through providing land and infrastructure to meet the passive and active recreational and sporting needs of the community; and
- (c) supports wider recreation and sporting activities by clubs, and the holding of sporting and other events and competitions.

(2) The Local Government Infrastructure Plan identifies council's public parks trunk infrastructure network that:
- (a) will equitably service the needs of the community based on the planned growth of the Ipswich Local Government Area; and
- (b) provides the statutory framework for the provision of land and the embellishment of public parks in accordance with the desired standard of service to meet the community's needs through delivery of a range of public parks and facilities that:
  - (i) are provided at the citywide, district and local levels based on the area of the catchment, purpose, function and the need that they service;
  - (ii) are accessible to the public;
  - (iii) comprise recreation parks, sport grounds, linear parks and waterside parks;
  - (iv) are located on the basis of the physical characteristics of the land supporting the planned recreational outcomes; and
  - (v) are embellished to the standards of service appropriate to the level and function of the park.

(3) Where appropriate and practicable, the public parks trunk infrastructure network should be integrated with other green infrastructure including state government open space land, for example reserves, and land used by other private organisations for recreational or sporting purposes.

(4) Where consistent with achieving the required recreational outcomes and desired standards of service, other non-park functions and outcomes may be aligned and delivered alongside the public parks trunk infrastructure network including the:
- (a) accommodation of drainage, waterway functions and flooding;
- (b) provision of active transport infrastructure;
- (c) protection of significant native vegetation and provision of habitat and fauna connections to natural areas and conservation areas;
- (d) providing for wider social interaction and entertainment, for example, in club houses or through the establishment of cafes and kiosks;
- (e) integration of buffer areas and provision of breaks in the urban areas through areas required to mitigate impacts, for example from industrial uses and areas, being maintained to visually integrate with areas of adjacent public parkland; and
- (f) linear open space adjacent to waterways, visually reinforcing the edges and the extent of neighbourhoods.

(5) Parks and recreation facilities should be located and designed:
- (a) to be accessible relative to the catchment that they serve and by appropriate modes of transport, for example by walking to local parks or by cycling, car, or public transport to district and citywide parks;
- (b) using Crime Prevention Through Environmental Design (CPTED) principles to increase natural surveillance and foster appropriate behaviour;
- (c) to respond to natural features and constraints, for example by locating facilities and equipment to minimise the risk and impacts of flooding;
- (d) to retain cultural heritage features and provide for their interpretation;
- (e) where involving buildings or structures, are of a high quality design and respond appropriately to the climate of the Ipswich Local Government Area;
- (f) to integrate with adjacent development and the surrounding area through:
  - (i) construction of esplanade roads on park boundaries and avoiding development, including residential lots, backing onto parks unless the boundaries are treated to facilitate surveillance of the park;

(ii) as far as is practicable, locating activities that may give rise to adverse impacts on amenity through noise, lighting or loss of privacy, such as play areas or sports courts, away from adjacent residences;
(iii) provision of high quality, low maintenance landscaping; and
(iv) where located in a mixed-use urban environment, for example a higher order centre, use high quality urban materials and features that are compatible with the design standards for the public realm in the centre and recreational outcomes for the park.

(6) Major stadiums and indoor sports facilities:
(a) are generally not included in council's public parks trunk infrastructure network but may be located within the network where consistent with the recreational outcomes for the park; and
(b) are to be located and designed to mitigate adverse impacts, including from traffic, on surrounding areas.

(7) Strategic Framework Map 6 - Strategic Green Infrastructure shows the location and extent of the elements that make up the strategic green infrastructure network within the Ipswich Local Government Area (refer to Note 10) and which includes:
(a) the existing and planned public parks network;
(b) natural areas and links including areas of high environmental value and areas that have a multi-functional purpose and range of values (for example land use buffer areas) as shown on Strategic Valuable Features Map SVFM 1 - Strategic Greenspace Areas and Links;
(c) significant watercourses within the urban area that are to be retained and managed in their natural form;
(d) other significant areas of land and constructed assets that form part of the drainage network; and
(e) other key green infrastructure assets (such a strategic fauna crossings).

Note 10: Green Infrastructure

Green Infrastructure is a multi-functional network of connected assets (living and constructed) which provide life sustaining benefits (ecosystem services). Green infrastructure includes natural and constructed green spaces and systems across both the rural and urban environments, and incorporates larger areas and constructed assets as well as solutions that are applied at the individual building scale, such as green roofs and walls. Green infrastructure provides environmental, social and economic benefits to the community and contributes to climate change response and resilience, through for example supporting urban cooling, providing refuge for native fauna or managing water.

3.6.4 Social infrastructure and community facilities

3.6.4.1 Preliminary

(1) Social infrastructure and community facilities:
(a) support social development and opportunity, the health and wellbeing of the community and are also important places for social interaction and cultural activity;
(b) comprise facilities and the delivery of services relating to:
(i) health;
(ii) education;
(iii) culture, arts and theatre;
(iv) library and information services; and
(v) community meeting spaces; and
(c) are provided by the state government, council, community associations, not-for-profit organisations and businesses.

3.6.4.2 Health

(1) Health services:
  (a) are generally delivered through:
    (i) large scale emergency, diagnostic and treatment facilities such as hospitals;
    (ii) day surgery clinics, general practice surgeries and consultants rooms;
    (iii) outreach services in the community including clinics and consultations in smaller scale health and other facilities and in the home; and
    (iv) standalone pathology and medical scanning units;
  (b) may be supported by, or associated with:
    (i) administrative services;
    (ii) ambulance services;
    (iii) laboratory services;
    (iv) pharmacies;
    (v) research and education; and
  (c) should meet the health and wellbeing needs of, and be accessible to all the community.

(2) Hospitals should generally be located in the Principal Centres, and particularly in the medical precinct in the vicinity of Ipswich Hospital and St Andrews Hospital in the Ipswich City Centre and the Health City Precinct in the Springfield Town Centre.

(3) Other facilities and services should be located in centres appropriate to their service catchment to maximise accessibility and the potential co-location with other related and supporting facilities and services.

(4) Outreach health services that require flexibility in delivery (for example immunisation or community health programs) may be provided from facilities that also provide other social and community services where compatible with those other services.

3.6.4.3 Education

(1) Access to high quality education and training supports opportunities for self-development and access to employment and provides wider social and economic benefits.

(2) Education facilities and services are provided primarily by the state government, not-for-profit and other community organisations and the private sector.

(3) In the Ipswich Local Government Area access to a wide range of high quality, lifelong learning opportunities should be provided including:
  (a) pre, primary and secondary schooling;
  (b) tertiary (university) education; and
  (c) vocational and other training.

(4) Schools should be:
  (a) planned and designed to meet the educational needs of the community that they service;
  (b) located and designed to provide safe access to and from the transport network, and in particular support walking and cycling to school where age appropriate;
  (c) where practicable, be co-located with other social and community infrastructure to allow for the potential sharing of facilities and access by the public;
  (d) integrated with surrounding development through:
    (i) the location of schools being determined during the master planning phase and being constructed as part of the planned sequencing of development in expansion areas;
    (ii) buildings being orientated and designed to address external road and other boundaries adjacent to public spaces and avoiding solid walls and fencing, and which will also support surveillance of the school when not in use;
    (iii) where practicable, sports fields being on the outside boundary of the school site to facilitate after hours community use; and
    (iv) areas that are likely to cause adverse impacts through noise, light spillage or privacy (for example drop-off areas) being located, designed and attenuated to mitigate the impacts on the surrounding area.

(5) The university campuses in the Ipswich City Centre and Springfield Town Centre:
  (a) will be the main locations for the provision of university education services;

(b) play an important role in driving innovation and productivity in the Ipswich Regional Economic Cluster and Springfield Regional Economic Cluster, particularly through facilitating research and development;
(c) are to be supported by accommodation for students; and
(d) present opportunities for the development of specialised businesses and industries within the Regional Economic Clusters that are allied to or benefit from activities at the campuses.

(6) Vocational training provides skills that are important to the economy of the Ipswich Local Government Area, including construction trades, health care and wellbeing provision and administration, and will be provided either through specialised facilities (for example TAFE) or in commercial buildings that are in locations that are accessible by public transport and where the use will not have adverse impacts on surrounding amenity.

3.6.4.4 Community facilities

(1) Community facilities are buildings that are open to the public and within which community and cultural activities are undertaken and from which services are delivered.

(2) As well as including state government and council provided facilities, community facilities are also provided by community organisations and religious bodies (for example community halls) but may have limitations on access and use.

(3) The Local Government Infrastructure Plan identifies the land required to accommodate council's community facilities trunk infrastructure network that:
(a) equitably meets the needs of the community for council services based on the desired standards of service;
(b) provides facilities within a hierarchy based on the scale and function of the facility where:
(i) Citywide facilities will be accessed by all residents of the Ipswich Local Government Area and typically accommodate larger and higher order uses such as libraries, cultural and performing arts centres and art galleries, as well as multi-purpose meeting spaces;
(ii) District Community Facilities that are generally used by the residents within districts and which typically accommodate smaller scale performance and theatre spaces as well as multi-purpose meeting spaces; and
(iii) Local facilities that are generally accessed by local communities and provide flexible space, such as hall space and meeting rooms;
(c) supports social inclusion by facilities being centrally located and accessible by active and public transport as well as private vehicles from the catchment they serve, and generally within a centre; and
(d) takes into account the facilities and services provided by other organisations or public sector entities to ensure that facilities are not duplicated.

(4) Community facilities provided by council are designed and constructed:
(a) to provide integrated, flexible, multi-purpose facilities that can, whenever possible, incorporate a range of community uses rather than stand-alone specialist facilities;
(b) with a flexible floor plan and configuration to accommodate new services and activities in response to the changing needs of the community and models of service delivery over time;
(c) where located within a centre, integrate with surrounding development and activate streets and other public spaces; and
(d) at a time when the demand threshold for the facility has been reached.

3.6.5 Stormwater drainage

(1) Stormwater:
(a) takes the form of sheet or concentrated flows (for example in gulleys) outside the main creek and river flows that are caused by a rainfall event in a local catchment;
(b) forms an integral part of the water cycle and creek and river systems;
(c) may be a hazard with associated risks to people and property;
(d) can have detrimental impacts on water quality and the health of watercourses;
(e) is an environmental resource; and
(f) where appropriately managed can contribute to urban cooling and climate change resilience.

(2) Stormwater is to be managed to achieve no worsening of hydrological and hydraulic impacts on upstream and downstream properties and within the catchment and to protect receiving watercourses from adverse impacts caused by changed flow regimes and pollution by:
   (a) development and works avoiding areas of high hazard and risk;
   (b) maintaining and rehabilitating existing natural features and ecological processes as far as is practicable;
   (c) maintaining, where possible, the natural behaviour of the stormwater including through constructing piped and above ground stormwater management systems that seek to replicate natural patterns of flow and infiltration;
   (d) the construction of structures and devices to mitigate the impacts of the development on water quantity and quality; and
   (e) implementing sediment and erosion control measures, particularly during the construction phases of development.

(3) Where an offset is to be provided (including payment of a contribution) instead of the construction of on-site devices it should directed to the delivery of an alternative stormwater solution that achieves an equivalent or better outcome.

(4) Where practicable and feasible, drainage systems should provide for harvesting of stormwater, particularly where it provides an alternative to using potable water.

3.6.6 Water supply and sewerage

3.6.6.1 Preliminary

(1) Water is a valuable resource that should be conserved and managed to maximise benefits and reduce costs of water supply and sewerage services.

(2) A demand management approach should be applied in development to reduce the use of potable water where possible through using:
   (a) technologies and management systems that reduce water flows and usage; and
   (b) alternative water sources, such as harvested rainwater and recycled water in the place of potable water.

3.6.6.2 Bulk water supply

(1) Bulk drinking water supply is delivered by Seqwater (a state government statutory authority) who are responsible for the development and operation of infrastructure such as dams and the South East Queensland bulk water conveyance network / grid.

(2) The main components of the bulk water grid for the Ipswich Local Government Area includes the:
   (a) Mount Crosby Water Treatment Plant;
   (b) Bundamba Advanced Water Treatment Plant and associated Western Corridor Recycled Water Scheme conveyance network; and
   (c) Southern Regional Water Pipeline.

3.6.6.3 Local water supply and sewerage

(1) The delivery of drinking water, recycled water (in conjunction with drinking water) and sewerage services to the Ipswich Local Government Area is provided through Queensland Urban Utilities (the water distributor-retailer).

(2) Queensland Urban Utilities' infrastructure comprises a:
   (a) potable water supply network including reservoirs, conveyance pipes, water pump stations and a recycled water network; and
   (b) sewerage network including conveyance pipes, sewage pumps stations and wastewater treatment plants.

(3) The Water Netserv Plan:
   (a) is the framework for water and sewerage infrastructure planning and delivery by Queensland Urban Utilities;
   (b) is integrated with and supports the land use planning in the *ShapingSEQ* and Ipswich planning scheme including the assumptions about the type, scale, location and timing of future development; and
   (c) provides the basis for water connection approvals and infrastructure charges.

(4) The safe, reliable, efficient and cost effective provision of water supply and sewerage services is achieved through:
   (a) the water and sewerage networks being planned having regard to the delivery of infrastructure by other providers and the planned land use outcomes to align as far as is practicable with the delivery of other infrastructure, for example with road construction and stormwater drainage works, and minimise conflict between infrastructure network provision and impacts on the amenity of the surrounding area (existing and planned) both during the construction and operational phases;
   (b) wastewater treatment plants being:
      (i) located, designed and operated to mitigate noise and odour impacts on the amenity of the surrounding area to the required standards; and
      (ii) protected from encroachment by land uses and development that adversely impact on the operations of the plant through establishing a buffer to the plant (refer to Section 3.4.2.4 Wastewater treatment plant buffers);
   (c) other water supply and sewerage infrastructure that may impact on the amenity of surrounding uses, for example pump stations, being located and designed to mitigate adverse impacts on the surrounding area to acceptable levels; and
   (d) allowing for the delivery of innovative and de-centralised solutions where they meet the service requirements and standards in a cost effective way.

3.6.7 Power and energy

(1) Power and energy is fundamental to maintaining quality of life in our modern society.

(2) Power and energy is normally generated and distributed through:
   (a) a centralised generation and distribution model in the form of a high voltage grid network that links power generation stations to the local distribution network and subsequently to users;
   (b) decentralised ‘on-site’ generation, for example from roof top photovoltaic cells and which may include on-site storage and feeds back into the distribution network;
   (c) other power generation that feeds directly into the local distribution network including local generation schemes and combined heat and power schemes; or
   (d) a pipe network from a central storage facility, for example for the distribution of natural gas.

(3) Power and energy infrastructure is to:
   (a) be provided to service development;
   (b) designed and located to mitigate adverse impacts on the amenity of the area, including the visual impact of transmission structures and substations, particularly within areas of cultural heritage significance, cultural landscapes or scenic amenity, where major infrastructure works should generally be avoided; and
   (c) be protected from encroachment by incompatible development and uses that would adversely impact on the operation of the infrastructure.

(4) Power and energy generation that relies on fossil fuels and the burning of other carbon based materials contributes to greenhouse gas emissions.

(5) To help reduce greenhouse gas emissions:
   (a) power and energy from renewable sources, for example solar, wind, geothermal and other natural energy sources is supported where consistent with the overall development outcomes and amenity of the area;
   (b) development should where feasible and as far as is practicable:
      (i) use energy efficient technologies, for example in lighting, heating and cooling;
      (ii) incorporate site scale renewable energy generation and energy storage devices; and
      (iii) use passive solar design principles and heat management systems; and
   (c) capture and sequestering emissions or using emissions in other processes is supported where consistent with the overall development outcomes and amenity of the area.

3.6.8 Digital infrastructure and telecommunications

(1) Digital networks and telecommunications provide an important and ever increasing role in connecting people and businesses as well infrastructure (the 'internet of things'), enabling transactions and data flows and providing telemetry systems to manage the operation of other infrastructure.

(2) To ensure that the Ipswich Local Government Area remains competitive in a global market place and to maximise the benefits to the community, the development of high capacity digital and telecommunications infrastructure is required.

(3) To facilitate the delivery of digital and telecommunications services with the capacity to support both current and future needs, digital and telecommunications facilities and networks are to:
   (a) be delivered throughout the Ipswich Local Government Area in a planned, sequenced and prioritised manner (for example digital and telecommunications in the Ipswich and Springfield Regional Economic Clusters or in association with other infrastructure to support telemetry and data management) to ensure the efficient and cost effective rollout of infrastructure and services and to maximise the benefits;
   (b) be located (including co-located with other services) to maximise network efficiency providing adverse impacts, including on visual amenity, are mitigated to an acceptable level;
   (c) use other municipal infrastructure where practicable, for example electricity and light poles; and
   (d) be capable of adaptation and expansion over time.