

BROOME NORTH PLANNING DESIGN FORUM INFORMATION PACK



BROOME NORTH IS INTENDED TO SUPPLY THE MAJORITY OF BROOME'S MEDIUM TO LONG TERM LAND SUPPLY, AND WILL PROVIDE A RANGE OF HOUSING OPTIONS AIMED AT DELIVERING MORE AFFORDABLE LAND AND HOMES FOR THE TOWN, WITH A FOCUS ON CLIMATE RESPONSIVE AND INNOVATIVE DESIGN.

This information pack provides participants with information about the upcoming Broome North Planning Design Forum to be hosted by LandCorp between 19 - 22 August 2009 (inclusive) at the Mangrove Resort Hotel, Broome.

The Planning Design Forum is a proven means of bringing together peoples' expertise, experience and local knowledge to create a shared vision for the development of the land.

This information pack includes details about the objectives and desired outcomes of the Forum, the programme structure and other information to assist you with getting the most out of the process and maximising your contribution.



BROOME NORTH IS AN EXCITING NEW DEVELOPMENT THAT WILL PROVIDE LAND, HOUSING, BUSINESS OPPORTUNITIES AND COMMUNITY FACILITIES FOR THE FUTURE EXPANSION OF THE TOWN.

The development will cater for growth in population and the tourism industry as well as potential increased demand from the resources industry through projects such as the proposed Kimberley LNG hub.

The project will provide the vast majority of Broome's medium to long term land supply, and has capacity for several thousand homes as well as schools, workers accommodation, tourism, light industrial and commercial/retail opportunities.

The area is being developed in consultation with the Shire of Broome, traditional owners and the local community. The development will respect the cultural and environmental heritage of the area, and include social facilities to help enhance the community.

We'll be working with private developers to provide a range of housing options and deliver more affordable land and homes with a focus on planning excellence and climate responsive and innovative design. The site will provide a range of living options and opportunities for public and social housing.

LOCATION

The area is located north of Gubinge Road and is bordered by Broome Road to the east and Lulfitz Drive to the west. It is separated into two areas north and south of Fairway Drive.

PROJECT AREA

Total: 694.26(approx) Developed: 0.0ha

SCOPE OF DEVELOPMENT

The land is expected to yield several thousand lots in addition to potential for schools, retail and tourism areas and the expansion of the Blue Haze Industrial area.

OPEN SPACE

Estate design will be sensitive to the culture of the traditional owners and is intended to have an overall strong connection to country. Environmental Cultural Corridors will link the habitats across the peninsula.

DEVELOPMENT GUIDELINES

The development plan for the area will set out climate responsive design criteria. Water Sensitive Urban Design principles will be incorporated within the design.

APPROVALS

Work has started on the necessary planning and environmental approval processes.

TIMING

Jun - Dec 2009: Community consultation and preparation of masterplan.
2010: Approvals and planning process.
2011: First lots released to market.

COMMUNITY FACILITIES

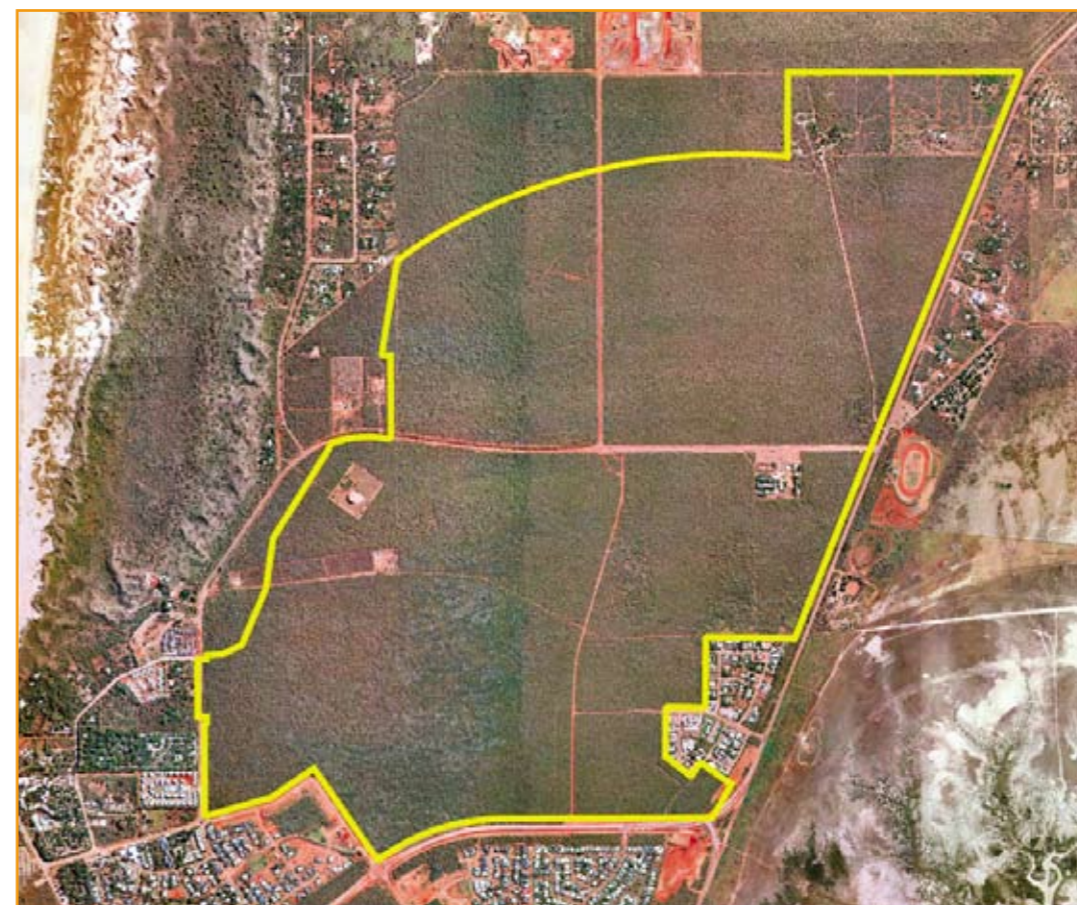
The development is within the Shire of Broome, approx 4km from the centre of town.

PARTNERSHIPS

We're working in close consultation with the Shire of Broome, the traditional owners and the wider community to plan the development. Private developers are likely to play a significant role in the delivery of the project, through partnering and superlot opportunities.

PROJECT TEAM

- Engineering - Sinclair Knight Merz (SKM)
- Town Planning - Roberts Day
- Architectural Consultant - CODA Studio
- Landscape Architect - UDLA
- Surveyor - Whelans
- Community Consultant - Creating Communities
- Environmental Consultant - GHD



PROGRAMME

DESIGN FORUM PROCESS

The Broome North Planning Design Forum will be a collaborative effort by participants, facilitated by LandCorp and its project team, to ensure the best development outcome for the site and the community.

The purpose of the Planning Design Forum is to:

- Identify what matters to the local community and other key stakeholders in the development of the land;
- Detail the issues, opportunities and values of the site;
- Establish the overarching design principles for future development and how these can be incorporated into a Masterplan;
- Agree on the best urban design and built form outcomes that celebrate the land's values; and
- Prepare a final design concept that has the support of forum participants.

The Forum commences with a series of welcoming presentations. LandCorp and the Shire of Broome will share their aspirations for the development of Broome North. Roberts Day will then describe what is intended to occur during the course of the Forum and will establish some common reference points that will inform the design process. Some of these ideas are included towards the end of the information pack. A tour of the site and townsite will then occur. All transport will be provided by LandCorp. The tour map is on the back of this booklet.

The afternoon of Day One is set aside for interactive group sessions to explore the various issues and opportunities relevant to the site. These sessions are intended to encourage you to share your views and experience about what matters to you for the development of the site.

Days Two and Three comprise a series of invited technical sessions that aim to translate the ideas and expertise of forum participants into a final design concept. Members of the project team will present a short PowerPoint that shares the information the team has gathered about the site as a prelude to detailed consideration of the key issues.

At the end of each of these three days a Summary Session will be held to provide an overview of what has been learned and achieved that day. These sessions are open to everyone to attend.

Real time design is continuous throughout the Forum, responding to the ideas and issues raised during each days proceedings.

By Day Four a design concept (or concepts) will have been prepared that will be presented to participants at the Forum's Closing Presentation. All participants will be invited to return to the Forum for the presentation to reflect on the process and share the outcomes.

WORKING TOGETHER AND SHARING INFORMATION

The success of the Forum is all down to how the participants work together and listen to each other. Collaboration and cooperation are the hallmarks of the process.

Up to date information and how it is used is also critical to making good decisions. Much of the Forum will be about developing ideas and testing these ideas against the information at hand. The more relevant information participants are able to introduce to the process, the better. Any documents you wish to introduce should ideally come in digital form and be given to Dan Pearce of Roberts Day as soon as possible on arrival.

Your invitation included specific sessions that you have been invited to. If for some reason, you are unable to attend, feel free to send another representative who can adequately represent your organisation or views.

You are encouraged to voice your opinion and ask questions throughout the Forum. Everyone is entitled to their view and participation will be valued and listened to.

DAY 1 WEDNESDAY	DAY 2 THURSDAY	DAY 3 FRIDAY	DAY 4 SATURDAY
<p>OPENING PRESENTATION 8.30AM - 10.00AM - Welcome to Country - Welcome to Forum - Liveability Presentation</p> <p>SITE AND CONTEXT TOUR 10.00AM - 12.00PM</p> <p>LUNCH 12.00PM - 1.00PM</p> <p>INFORMATION SHARING, VISIONING & ISSUE IDENTIFICATION 1.00PM - 3.00PM - Facilitated sessions</p> <p>SUMMARY SESSION (open to public) 3.00PM - 4.00 PM</p>	<p>INTRODUCTION 9.00AM - 9.30AM</p> <p>TECHNICAL SESSIONS: CULTURE & LANDSCAPE 9.30AM - 11.00AM</p> <p>NATURAL ENVIRONMENT 11.00AM - 12.30PM</p> <p>WORKING LUNCH 12.30PM - 1.30PM</p> <p>TRANSPORT, ACCESS & SERVICING 1.30PM - 3.00PM</p> <p>HOUSING 3.00PM - 4.30PM</p> <p>SUMMARY SESSION (open to public) 4.30PM - 5.30PM</p>	<p>INTRODUCTION 9.00AM - 9.30AM - Recap Day Two</p> <p>TECHNICAL SESSIONS: URBAN DESIGN & PLACE 9.30AM - 11.00AM</p> <p>COMMUNITY, ECONOMY & WELLBEING 11.00AM - 12.30PM</p> <p>WORKING LUNCH 12.30PM - 1.30PM</p> <p>INTERNAL DESIGN STUDIO 1.30PM - 4.30PM</p> <p>SUMMARY SESSION (open to public) 4.30PM - 5.30PM</p>	<p>INTERNAL DESIGN STUDIO 8.00AM - 2.00PM</p> <p>CLOSING PRESENTATION (open to public) 2.00PM - 3.30PM</p> <p>FELLOWSHIP & REFLECTION 3.30PM - 4.30PM - includes opportunity for informal review and one on one discussions with project team</p>

Dan Pearce of Roberts Day is responsible for managing the day to day operation of the Forum, including documenting the proceedings, information management and ensuring everything runs as smoothly as possible. Dan is your first port of call should you have any queries or problems you need addressed. Queries or problems may also be directed to Martine White of Roberts Day Dan and Martine can be contacted at:

Level 1, 130 Royal Street EAST PERTH WA 6004
T: +61 8 9218 8700 F: +61 89218 8701
M: 0400 209 823 (Dan) E: dan@robertsday.com.au
M: 0408 900 161 (Martine) E: martine@robertsday.com.au

Forum equipment will be provided by LandCorp, including stationary printers, scanners, data projectors and other items. It is recommended that you bring along any specific items that you require beyond those provided by LandCorp.

All meals and refreshments will be provided by LandCorp during the Forum.

The Planning Design Forum will be held at the Mangrove Resort Hotel, Broome:
47 Carnarvon Street BROOME WA
T: +61 8 9192 1303 F: +61 8 9193 5169



THE TRANSECT

The Transect is an idea which comes from ecology, especially the sequence of environments based on their place in the landscape. The character of each transect place reflects the individual 'fit' of vegetation, soils, climate, and landform from one place to another (eg, from the beach to the bush, as illustrated). Their individual parts (such as flora and fauna) don't always fit into other landscape transects, often because the right conditions don't exist in those other places.

When planning a community, it is useful to apply the idea of a transect to planning and design.

However, instead of mapping the transition of natural environments, the planning transect maps the progression of living environments.

The Transect diagram overleaf provides a simple picture of the progression of 'typologies' starting from natural areas and finishing at town centres. It is an 'organising principle', and is a useful tool to make sure different places in neighbourhoods and towns 'make sense' and fit together logically ... otherwise we often see parts of a neighbourhood or town that appear that they don't belong; that they should be somewhere else.

The planning transect extends from the natural environment through different human habitats via increasing density and immersive urban character.

Like its natural counterparts, the human response to each transect element is internally coherent. For example, streets and landscaping in the "Natural Transect" (or "T1") may be unsealed, unkerbed, paths may be constructed to protect the environment from uncontrolled pedestrian access, and landscaping is essentially selected on purely ecological principles in terms of species and function. The corresponding streets and landscaping in the "Town Centre" ("T5") condition completely favour human requirements; streets are highly engineered, parking is prevalent, footpath design and construction favours pedestrian numbers and the needs for socialisation, and landscaping is selected in terms of its functional capacity to provide abundant shade and relief for pedestrians, etc.

Intervening transect elements are likewise internally-coherent character zones of bush-living, neighbourhoods (suburban), and town living (urban).

Not only does this approach help to build on a 'sense of place', it also helps to:

- allocate resources logically,
- create legible and safer traffic environments,
- encourage housing diversity,
- foster economic diversity,
- maximise lifestyle opportunities, and
- encourage landscape diversity.

LIVEABILITY

'Liveability' is increasingly being used to measure the success and health of cities and communities.

We have developed a series of Liveability Measures to assist us with the planning of new communities.

The Planning Design Forum is structured around these measures ensuring that each element is considered by the Forum participants and reflected in our planning.

The 'Liveability Sheets' contained within this booklet describe aspects of each of the Liveability Measures listed below and are intended to promote discussion at the Forum. The sheets are "live" documents that we will continue to develop throughout the course of the Forum.

- Community, Economy and Wellbeing
- Natural Environment
- Housing
- Landscape and Culture
- Servicing
- Transport and Access
- Urban Design and Place

We encourage you to review the 'Liveability Sheets' and to contribute to the successful planning of Broome North.

BROOME NORTH TRANSECT

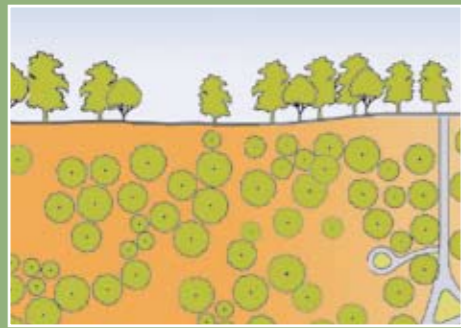


As observed in natural ecosystems, a community will function properly and sustain life in the face of change if it is full and diverse. Using the ecosystem as a model for human settlements suggests that places of varying intensity and character are required in order to cater for the full cross-section of the community. The change in vegetation complexes as you move away from the coast forms the basis for the creation of distinct transect zones. Our task is to identify the nature of the Broome transect and use this as the foundation for the northern extension of the town.

DEFINING CHARACTER

transect graphics derived from DPZ

NATURE



Untouched natural land
Song lines
Learning

BUSH LIVING



Natural landform preservation
Under engineered
Tread lightly

NEIGHBOURHOOD LIVING



Old Broome style

TOWN LIVING



New Broome style (contemporary reflection of Old Broome style)
Mixed use

TOWN CENTRE



Convergence of Old Broome and New Broome style
Shops, commercial and civic buildings

COMMUNITY SPACES



Interpretive signage | Paths | Natural



Natural landscape | Informal spaces | Little grass



Cultural corridors and breezeways | Formal and informal active play areas | Shaded landscape | Links to nature reserves and the active open space



Shaded landscapes | Cultural interpretations and expressions through landscaping, public art and community spaces | More formal public spaces



Cultural interpretations and expressions through public art, community spaces, streets, lanes, community buildings and events | Formal public spaces, squares | Shaded landscapes and breezeways for maximum comfort

STREETS



Unsealed surface | Narrow lane width | Unkerbed, vegetated edges



Larger setbacks | Unkerbed edges with natural style footpaths | Narrow pavements



Semi-formal landscaping | Shaded footpaths | Narrow pavements with landscaped setback areas



Kerbing | Formal shade landscaping | Continuous shaded footpaths | Reduced setbacks | Mixture of wide and narrow urban streets with tight corners

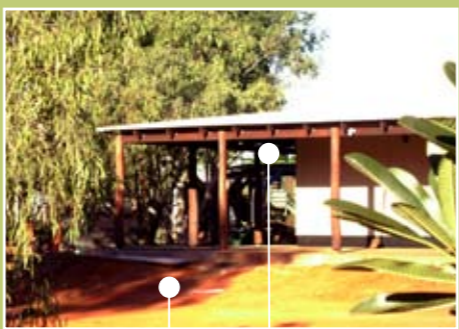


Landscaped medians | Street parking | Verandahs and alfresco seating | Generous footpath width

BUILDINGS



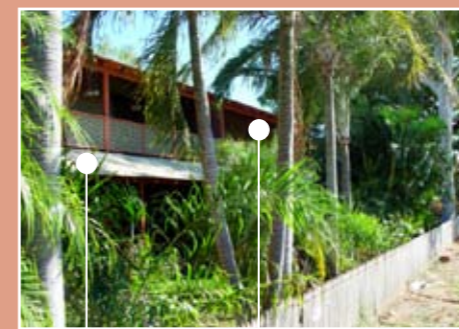
Blend with natural landscape | Picnic shelters, toilets and public facilities



Work sheds | Defined building envelopes | Larger lots and large setbacks | Single storey near sensitive areas or 2 storey to minimise footprint



Schools | Single houses and townhouses | Wide usable verandahs



Awnings to provide shelter | 2 storeys and reduced setbacks | Single houses, townhouses, apartments, tourist accommodation | Smaller lots



2 to 3 storeys | zero setbacks | Mixed commercial, civic, tourist uses | Awnings to provide shelter | Active shopfronts, alfresco seating

COMMUNITY, ECONOMY AND WELLBEING



Shared values, tolerance, empowerment of people, social networks and thriving local commerce.

TOPICS

community facilities - recreation facilities - education - local town centres - main street - employment - industry - social networks - community groups - community interaction - health facilities

KNOWLEDGE some background information

"Great places have the power to fire the imagination of their citizens. No one can create them on their own. If, collectively, we are to create them once again, we must first share a common view."

- John Thompson, Chairman, The Academy of Urbanism

Social Capital: Healthy communities are ones in which there are networks of people who trust one another and co-operate to make things happen ... even if that is simply friendship.

Question - How do the networks of Broome interact to ensure that all people have access to information, decision making processes and social support?

Wellness: The health of an individual is the amalgam of physical, social, intellectual, spiritual, psychological, material and emotional well-being.

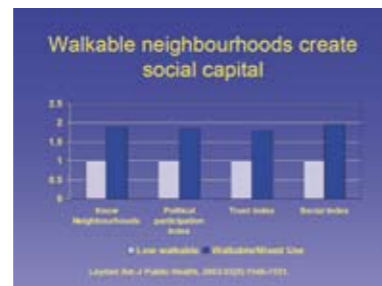
Question - What are the most important health issues in Broome or what needs to be done to enhance well-being?

Quality of Life: Deals with the manner in which the whole community operates. It involves leadership, shared values, the local economy, strong community structures, community safety and the like.

Question - What parts of the quality of life of Broome need to be focused on to create a stronger, more robust and inclusive community?

Cultural Anthropology: The manner in which people celebrate their place, are connected to history, culture and shared experience and celebrate diversity.

Question - What defines the character of Broome and how can that be enhanced?



Education is a crucial component of planning for a sustainable future – learning problems facing society, historical trends, discovering solutions from both contemporary research and technology as well as wisdom of Indigenous cultures, cultural tolerances, employment prospects...

International Art Space Kellerberrin Australia (IASKA), (population 870) - non-for profit organisation that runs an international program of visual arts/new media projects that are based on an in-depth engagement with specific local social and environmental situations. It provides the opportunity for international artists to experience Australian rural life, untouched by contemporary art. The IASKA program brings international artists to live and work in Kellerberrin for a three month period. These stays lead to the production of original artworks based on their experiences and interaction with the town's people and places. Through workshops and mentoring programs, exhibitions are generated reflecting the distinctive cultural and social fabric of the region.

QUESTIONS here are just a few - feel free to raise more!

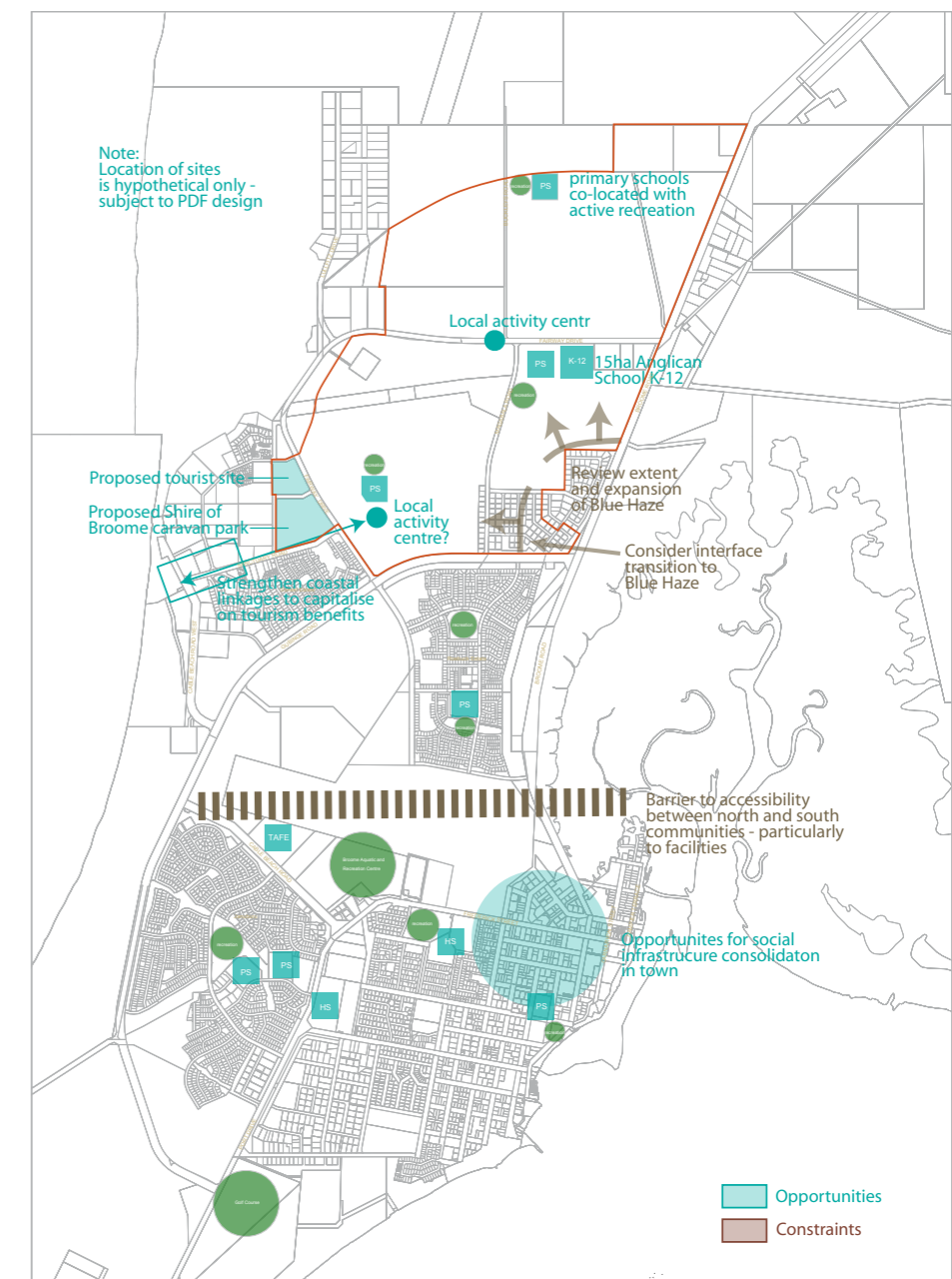
- What community facilities are needed (libraries, halls, function centres, recreation centres, outdoor courts, ovals, sports clubs, playgrounds)?
- Which community facilities should remain in the vicinity of Old Broome (and upgraded if necessary) and what new facilities should be located in Broome North?
- How many primary schools and high schools should be provided and where should they be located?
- Are other education facilities required (such as tertiary or adult education centre)? If so is there an opportunity to share facilities with schools or is separate facility required?
- Are additional health facilities required?
- How many and how large should the local activity centres be?
- What needs to be added to the local economy to ensure that there are employment opportunities for everyone?
- Is there a need for school to work transition programs?
- What can be done to ensure that children and young people feel part of the Broome community?
- What can be done to keep young people in Broome?
- How do we link the networks of Broome together?
- How can we make new people to Broome welcome and engaged in the community?
- Is there an opportunity to better engage with tourists who spend three plus months in Broome each year?
- What can we do to better accept itinerant people into the community?

GOALS this is just a start - feel free to suggest others!

- Timely provision of local community facilities and spaces
- Provide opportunities for cultural expression interaction and celebration
- Establish/ strengthen residents associations
- Encourage environmental stewardship through community and school environmental programs
- Involve community, school and Indigenous groups in the design of community buildings, spaces and art
- Home business opportunities
- Provide supportable floorspace of employment generating landuses in local activity centres
- Investigate opportunity for international art space with accommodation, teaching workshop facilities, function centre, gallery etc to promote Kimberley artists
- Investigate opportunities for community farms – cheap food, social interaction, healthy diet, physical activity, reduced energy involved in transporting food

OPPORTUNITIES + CONSTRAINTS

- schools
- tourism areas
- light industry expansion
- recreation areas
- town centres
- social infrastructure



NATURAL ENVIRONMENT



Our life support system, our greatest responsibility.

TOPICS restoration - integration - conservation - sustainability - balance - efficiency - recycling - local production - biodiversity - water sensitive urban design

KNOWLEDGE some background information

"Our choices at all level - individual, community, corporate and government - affect nature. And they affect us." - David Suzuki

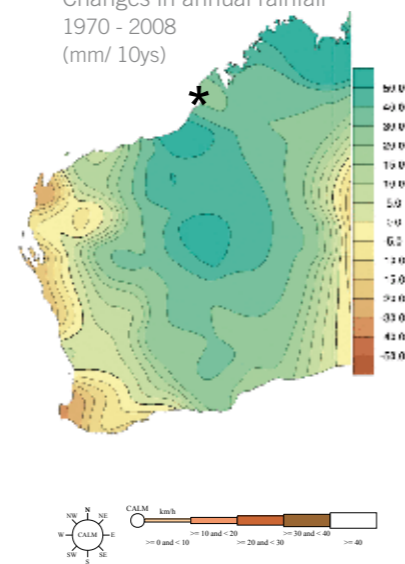
The Pindanland subregion, which includes land between Port Hedland and Derby comprises gently undulating sandplain landscapes with wooded shrublands dominated by wattles, and occasional low hills with hummock grasslands. The region's extensive coastal plains comprise mudflats that support mangal, samphire and couch grasslands fringed by low paperbark forest, as well as beach strand and coastal limestone outcrops with shrub-Spinifex communities.

'Pindan' comes from Aboriginal groups within the region and the name indicates 'wild, arid or waterless country'. It also describes fairly open areas of bush. Groups described themselves as being 'bindai' or 'pindai' meaning 'belonging to the wild or bush country'.

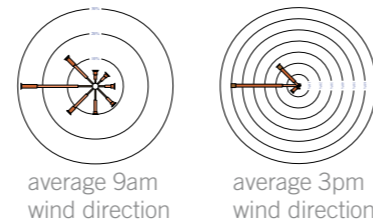
A large number of fauna species have been identified in the Broome North land. These include Northern Brushtail possum, snakes, lizards and frogs.



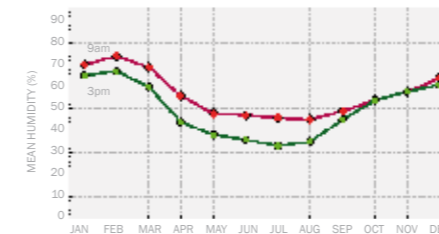
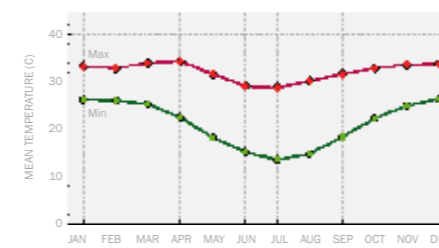
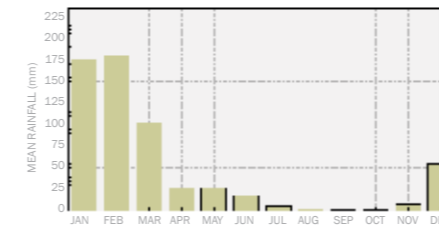
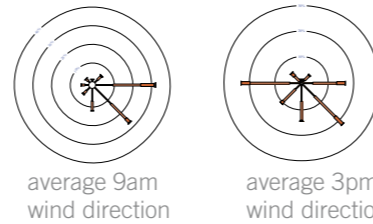
Changes in annual rainfall 1970 - 2008 (mm/ 10ys)



December - March:

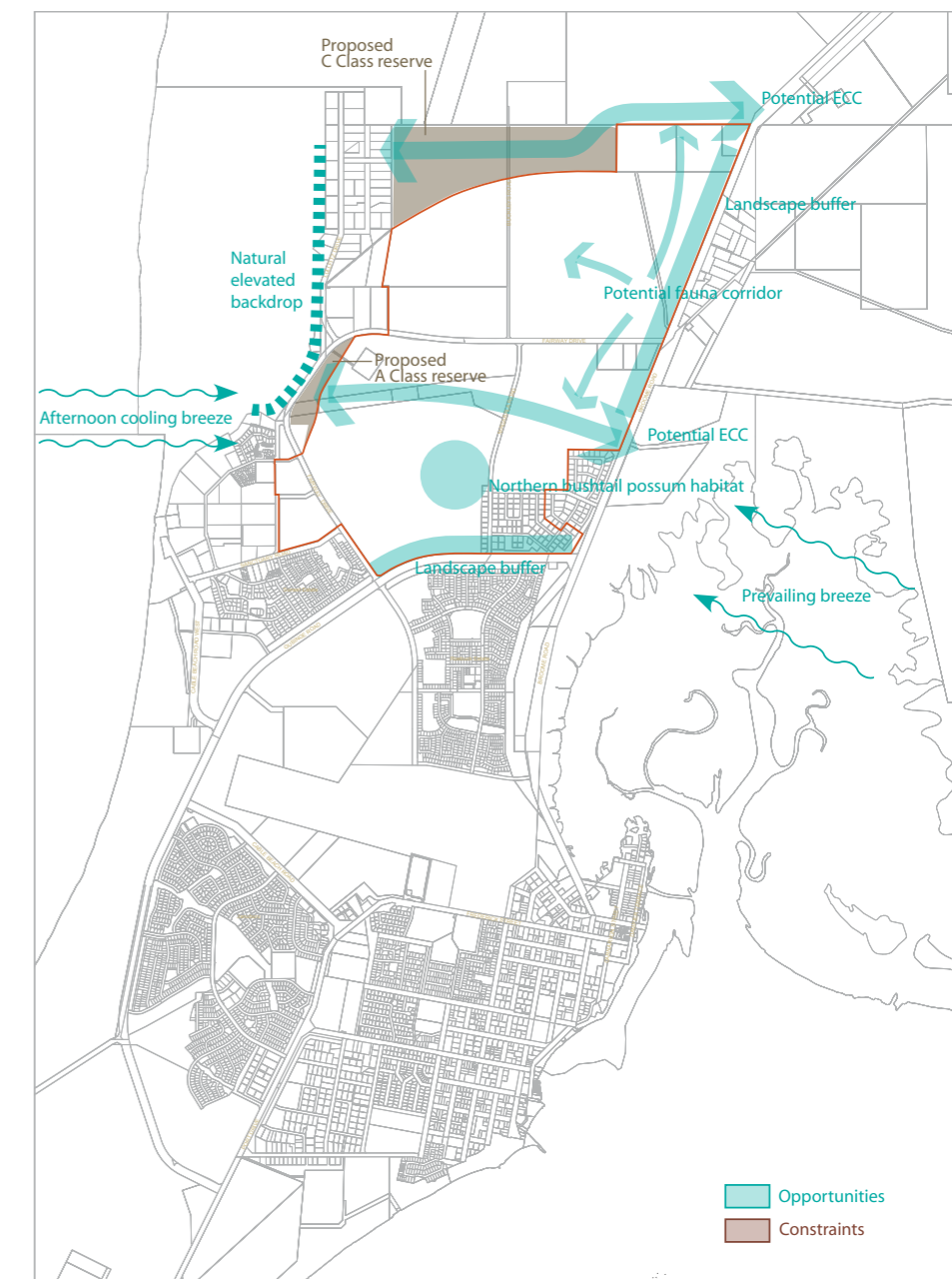


April - November:



OPPORTUNITIES + CONSTRAINTS

- conservation reserves
- environmental and cultural corridors
- fauna movement
- microclimate
- buffers



Weather Stations: As part of the development of a Broome Housing Guide, Landcorp sought a detailed understanding of the Broome North micro-climate factors. Landcorp, CODA and ENGAWA Architects are using six Kestrel Weather Monitoring stations in and around the Broome North site to record temperature, wind speed, wind direction, and humidity to enable a comprehensive set of the site's microclimatic factors to influence the Design Guidelines, lot layouts and street design. Our early analysis reveals distinctly different temperature scales and wind speeds/directions from the Bureau of Meteorology weather station located at the Broome Airport.

This level of analysis is unique to the Broome North project and the weather monitoring will continue for the next twelve months. Valuable data and a deeper understanding of how the urban design, topography, vegetation and built form (houses) affect wind ground speed and direction and temperature will be gained through this process. This knowledge will be essential to ensuring all residents at Broome North are able to maximise cross ventilation and cooling breezes within their homes and their outdoor living areas.

QUESTIONS here are just a few - feel free to raise more!

- How will conservation be balanced with land supply, affordability, transport, employment?
- What density is acceptable to minimise urban footprint and maximise conservation?
- Where should Environmental/ Cultural Corridors (ECCs) be located?
- How will we treat the interface to conservation areas?
- What measures need to be taken to preserve native plants and animals?

GOALS this is just a start - feel free to suggest others!

- Maintain the integrity of local ecosystems
- Protect and enhance native flora and fauna
- Use locally native species in landscaping
- Provide breezeway corridors with trees for air cooling
- Maximise shading of public spaces and hard surfaces
- World's best practice Water Sensitive Urban Design including waste water recycling
- Preserve significant natural landform and respond to topography
- Provide walkable neighbourhoods to reduce car use and promote walking & cycling
- Encourage more environmentally sensitive behaviour such as energy efficiency, water efficiency, local food production with a Sustainable Living guide
- By co-locating schools near conservation corridors, provide an opportunity for students to study and monitor the health of ecosystems
- Investigate opportunity for community recycling and re-use centre
- Protect representative portions of the major vegetation types
- Retain corridors of a suitable width for providing opportunities for fauna to move between preserved areas or other remnants (e.g. the coastal dune area or bushland to the north)
- Develop a Managed Plan for the bushland remnants and corridors which considers: drainage management, fire protection, weed reduction & control, fauna protection, protection/restoration of vegetation, education of users & residents
- Encourage landowners to preserve bushland on blocks where possible
- Consider multi use linkages including bushland corridors, Aboriginal values and walking areas

HOUSING



The foundation for living, safety and comfort, our greatest investment.

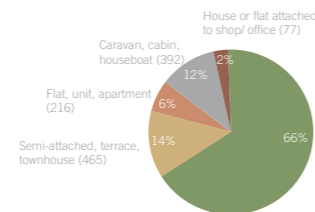
TOPICS

housing types - density - architecture - sustainable design - affordability - streetscape - household types - demographics - construction costs

KNOWLEDGE some background information

Broome's population is expected to increase from 20,000 to 30,000 in the next decade with half of the population growth expected to be accommodated in Broome North

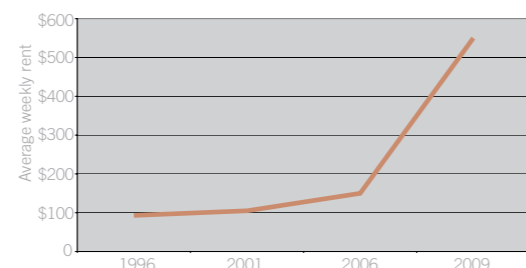
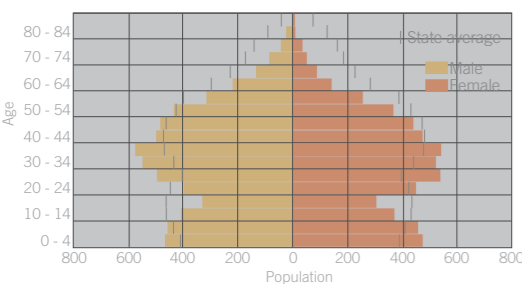
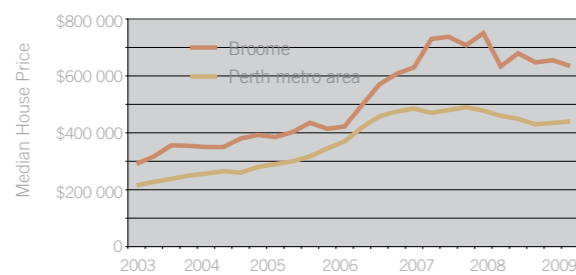
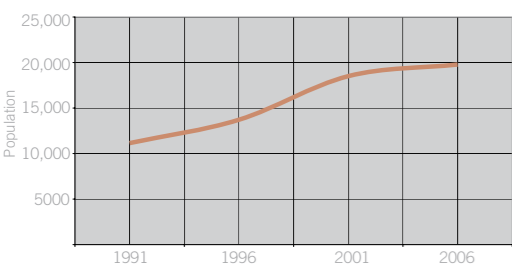
Compared to the state average, Broome has less people aged 10-20, more aged 25-40 and less over 55s



Broome has a rich history of housing typologies, construction methods and architectural innovation. This has been driven by its remote location, challenging environment and climate and multicultural population. South east asian and japanese carpenters and shipwrights brought carpentry skills to the Broome township enabling cleve adaption of boat building techniques to permeate local housing construction from the early part of the 20th century.

Broome housing has always been led by a spirit of innovation and direct response to lifestyle and climate. Materials were chosen for their robustness, availability and adaptability. Shutters, louvres, screens and lattice were technological responses to cyclones, the need for breeze and shade. Wind scoops, whitewashing walls and the colours of the shipyards gave a character unique to the peninsula.

The Broome style has evolved and continuously adapted to meet current material, technology and construction methods, and Broome North seeks to foster a spirit of innovation, climatic response and cultural appropriateness in its housing typologies.



OPPORTUNITIES + CONSTRAINTS

- variety of housing to cater for the different lifestyles of a diverse community



QUESTIONS here are just a few - feel free to raise more!

- What sort of housing would suit you best – are you single, couple, family with kids, long term resident, wanting to downsize, wanting to rent or buy, need a large house, small house, studio, apartment, live-work arrangement, or something else?
- What styles of housing/ architecture would complement Broome's character?
- What styles/ architecture would not?
- What building types are desirable in local activity centres?
- How should a house act differently during the wet season and the dry?
- How much operability is desirable? (i.e. night time shutters, louvres, roof vents vs closed house with air-conditioned air)
- What kinds of house types are missing from Broome? (the single bedsit? the shop house? apartments? aged care? group housing? hostels?)
- What are the hous/s that best exemplify the "Broome House"?

GOALS this is just a start - feel free to suggest others!

- Diverse range of housing to cater for a diverse and changing community including conventional single houses, smaller cottages with laneways, studios leased by the main dwelling, live-work units and apartments.
- Make 30% housing available to social housing providers with a range of housing types in strategic locations than enable affordable living with reduced travel
- Sustainable housing innovations that are climate sensitive, energy efficient, support local industry and are cost effective to construct.
- Develop design guidelines for housing and landscape to drive sustainability outcomes and provide attractive streetscapes
- All Broome residents to have access and a right to housing.
- Flexible housing layouts to allow for multi-generational, multi-family, share house or transient occupants, as well as family units.
- Culturally and climatically responsive housing design available from a range of local and national builders.
- Smaller, more responsive houses that allow for greater access to the outdoors.
- More engaged streetscapes, with a Broome style verge and streetscape.
- Shaded outdoor spaces that interact with the street
- Affordable housing that takes into account land, construction and running costs, and reduces energy and water consumption
- Alternative housing and land tenure models, with an aim to reducing Broome's homelessness rate (including the marginally housed).

LANDSCAPE AND CULTURE



The visual, sensory and emotional impression, the memory of heritage, the artistic expression, the essence of identity.

TOPICS character - public spaces - streetscape - parks - songlines - environmental cultural corridors - plants - shade - water - microclimate - religions

KNOWLEDGE some background information



Proposed Local Street Trees

- Corymbia flavescens
- Eucalyptus miniata
- Melaleuca dealbata
- Corymbia ptychocarpa
- Corymbia bella
- Eucalyptus alba
- Corymbia polycarpa
- Eucalyptus bigalerita
- Eucalyptus jensenii
- Eucalyptus microtheca
- Planchonia careya
- Terminalia petiolaris
- Mimusops elengi
- Melaleuca argentea
- Lophostemon grandiflorus
- Nauclea orientalis
- Lysiphillum cunninghamii
- Canarium australianum

Multi Use Corridors

'Bush' or 'nature' areas within the subdivision have the opportunity to provide informal connection to 'country' through local planting, materials and informal open spaces.

Ideally linear in shape, these areas may become multi use corridors, providing the community with a myriad of opportunities including the following:

Urban & environmental systems

- natural and urban drainage including flood management
- flora and fauna linkages
- cultural linkages

Community opportunities

- kick about areas
- formal play
- dual use paths/tracks
- exercise equipment
- cultural, heritage and environmental interpretation/education
- public and community art opportunities



Cultural Landscape Design Strategies

Development is inevitable in Broome, and can bring many positive outcomes for the community as a whole. However, with an increase in population comes pressure and the need to maintain a sustainable LIFESTYLE for trees, animals and its people.

Developers must remain aware of the impact of an increasing population on lifestyle and specifically indigenous lifestyle and traditions (access, stories, culture to pass on, a lifestyle for our children's future).

Before considering what will be brought to a site in regard to development, all landscape design should start with considering what already exists.

Learning from Januburu Six Seasons

Site Drainage

The latest subdivision in Broome, Januburu Six Seasons, attempted to change the way development dealt with drainage. Januburu drew heavily on the concept of using the existing site and local knowledge as an informant and guide to the design, ensuring minimal initial disturbance occurred, allowing the development to relate to its context.

The drainage system at Januburu Six Seasons exemplifies this concept by re-establishing and connecting existing drainage networks.

Januburu incorporated the following interventions to deal with site drainage:

Maintain overland flows offsite in accordance to those prior development;
 - redirect and evenly distribute clean water flows from the development area across Gubinge Road (historically acted as a superficial dam) into the highly valued Minyirr Park area.

- evenly distribute overland flows to the back of dunes along Cable Beach where a large distribution of vegetation relies on annual inundation.
 - drainage run-off is directed from housing lots onto roads, then into free form swale retention basins.

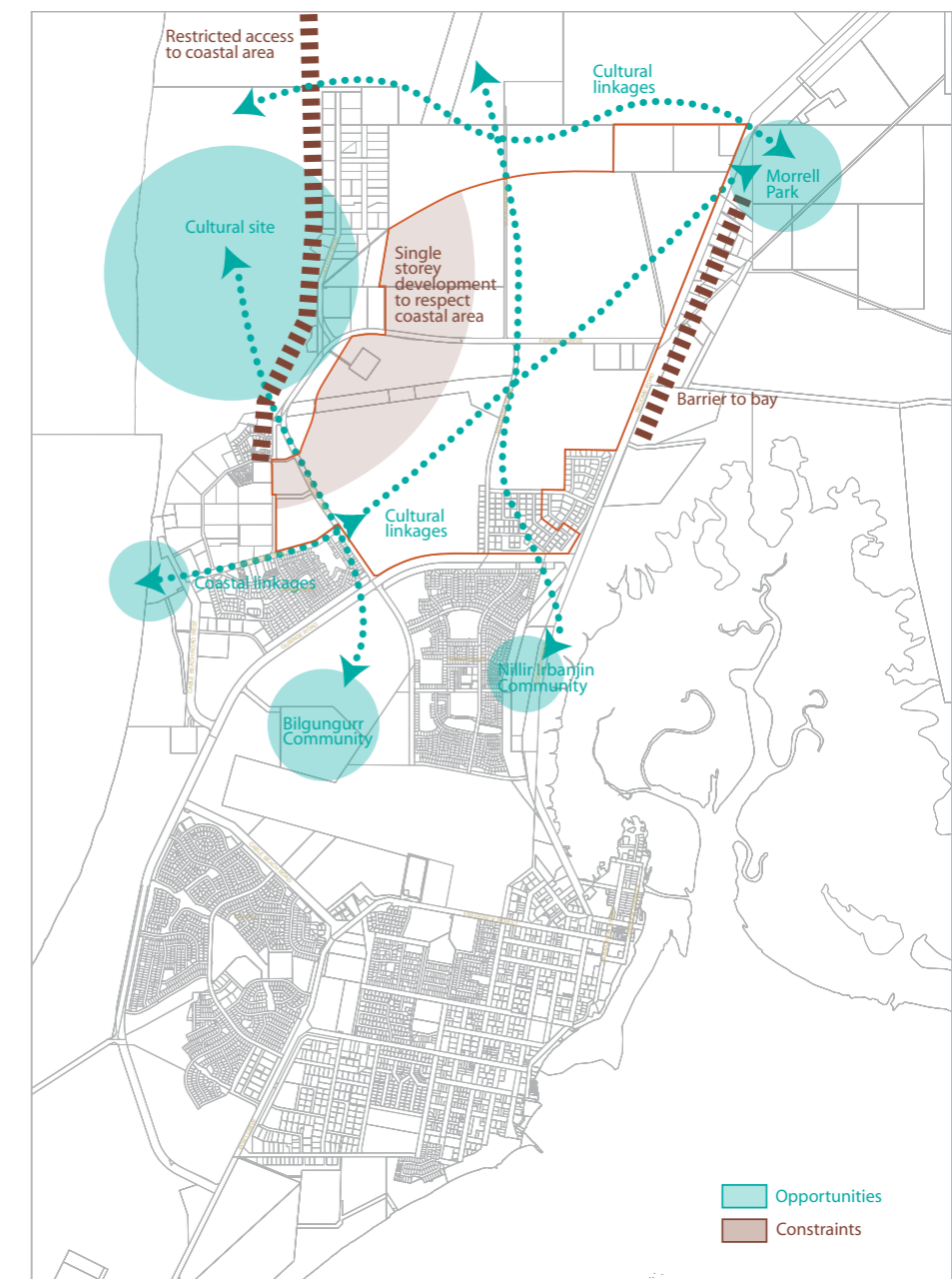
- Retarding basins, designed to slow overland water flows and deliver the volumes at a lesser pace to large compensating basins. These basins allow settlement of free pindan soils, exotic weed and seeds before distribution to Minyirr Park.

- Low infiltration properties of the deep red Broome pindan soils requires drainage management to include low flow devices, such as V-weirds and dam structures with small outlet pipes (low flow pipes) whose purpose is not to hold the water, however impede or slow the run-off rate back to a natural flow rate, i.e. a rate that existed before development occurred.



OPPORTUNITIES + CONSTRAINTS

- landscape linkages to important cultural sites
- topography and views
- native vegetation



QUESTIONS here are just a few - feel free to raise more!

- What is Broome's considered landscape?
- What existing trees are most appropriate for Broome and provide the most shade?
- What type of open space is required in Broome?
- Are bikes and pedestrians provided for in Broome?
- Is public art and interpretation important for Broome open spaces?

GOALS this is just a start - feel free to suggest others!

- Strengthen the identity of Broome by drawing on the natural landscape, the indigenous and cultural and European heritage and character of Old Broome
- Use of local species and landscape materials where possible
- Provide a range of public spaces, from formal town squares to informal bush settings including the opportunity for active and passive recreation, i.e. kick about areas, playgrounds, meeting spaces, exercise and walk trails
- Integrate urban and local drainage into multi use corridors that includes opportunity for recycled water use on lawn areas as required
- Provide culturally sensitive linkages across the site in the form of Environmental Cultural Corridors that continue to provide a 'lifestyle' for fauna/flora and community
- Consider public art, interpretation and education throughout the development and open spaces
- Continue a Broome 'sense of place' and space by considering local scale and materials
- Provide information in significant places that recognises places / plants / people

SERVICING



The mechanics of the settlement, providing more sustainable development.

TOPICS water supply - wastewater - stormwater - drainage - water recycling and reuse - renewable energy - telecommunications - earthworks

KNOWLEDGE some background information

WATER AND SEWER.

- No additional water source is required
- An additional site (adjacent Buckley's Road) for water reservoir (or recycled water reservoir) will be required
- A new Type 180 sewerage pump station is being built on the corner of Gubinge Road and Broome Highway. This will pump effluent to the new Waste Water Treatment Plant (WWTP) at Crab Creek.
- Up to three additional sewerage pump stations will be required for the development
- New WWTP at Crab Creek will have sufficient capacity to meet the future demand

Effluent Reuse

- Would be used for non-drinking uses (toilet flushing and garden watering).
- Will require advanced treatment (e.g. MBR and disinfection) and duplication of the reticulation system.
- A dual reticulation scheme in Broome North would reduce the water demand and delay the expansion of the groundwater borefield.
- Costing and operational responsibilities for the scheme need to be established.

POWER

- Horizon Power has advanced planning for the new 'Bilingurr' Zone Substation on the north-west corner of Fairway Drive and Buckley's Road. This Zone Sub-Station will service the Broome North development and reinforce the existing HV system.
- A preferred express 33kV cable route has been indentified under the airport runway; conduits have already been installed under the runway in readiness for the express cables.

SUSTAINABILITY

- Solar Power:
- Small scale grid connected Solar Photo Voltaic (PV) cells..
 - Solar hot water systems

Demand Side Management:

- Smart grid technology
- Meter data management systems
- Advanced metering providing in-house consumption, smart tariffs and direct load control by the network operator
- Smart network sensors and distributed automation
- New digital communications and advanced SCADA applications
- Energy aggregation

- Distributed and micro generation
- Distributed Under-Frequency Load Shedding (UFLS) at customer main switchboards
- Air-conditioner load control
- Energy efficiency (heating, cooling, appliances and lighting)
- Wind power generation - Wind generation can take the form of grid connected small scale micro-turbines installed at residential and commercial premises much like solar PV cells.
- Bio energy (land fill gas and biodiesel) -Potential for land fill gas generation using methane reclamation from rubbish dump could be an option to examine further.
- Construction - Selection of building and insulation materials

DRAINAGE *The storm water design is to be based on the following principles:*

- Roads are used as drains and carry the majority of the flows for all events. Gullies and pipes are only used to manage flows where they cannot be carried in the road between the kerbs and for low flow drains from detention basins.
- Storm water is carried by the roads and open unlined drainage swales to the Dry/Ephemeral detention basins. The Dry /Ephemeral detention basins are designed as outlined in the Water Sensitive Urban Design Manual.
- The project area will require detention basin storage so that the peak runoff outflows for up to 1 in 50 year ARI events are no greater than that which would occur under pre-development conditions.
- The area required for drainage is approximately 3% of the gross land area.
- The 1:50 and 1:100 year events are to be contained within the road reserve.



example of a constructed open drainage swale that has been re-vegetated



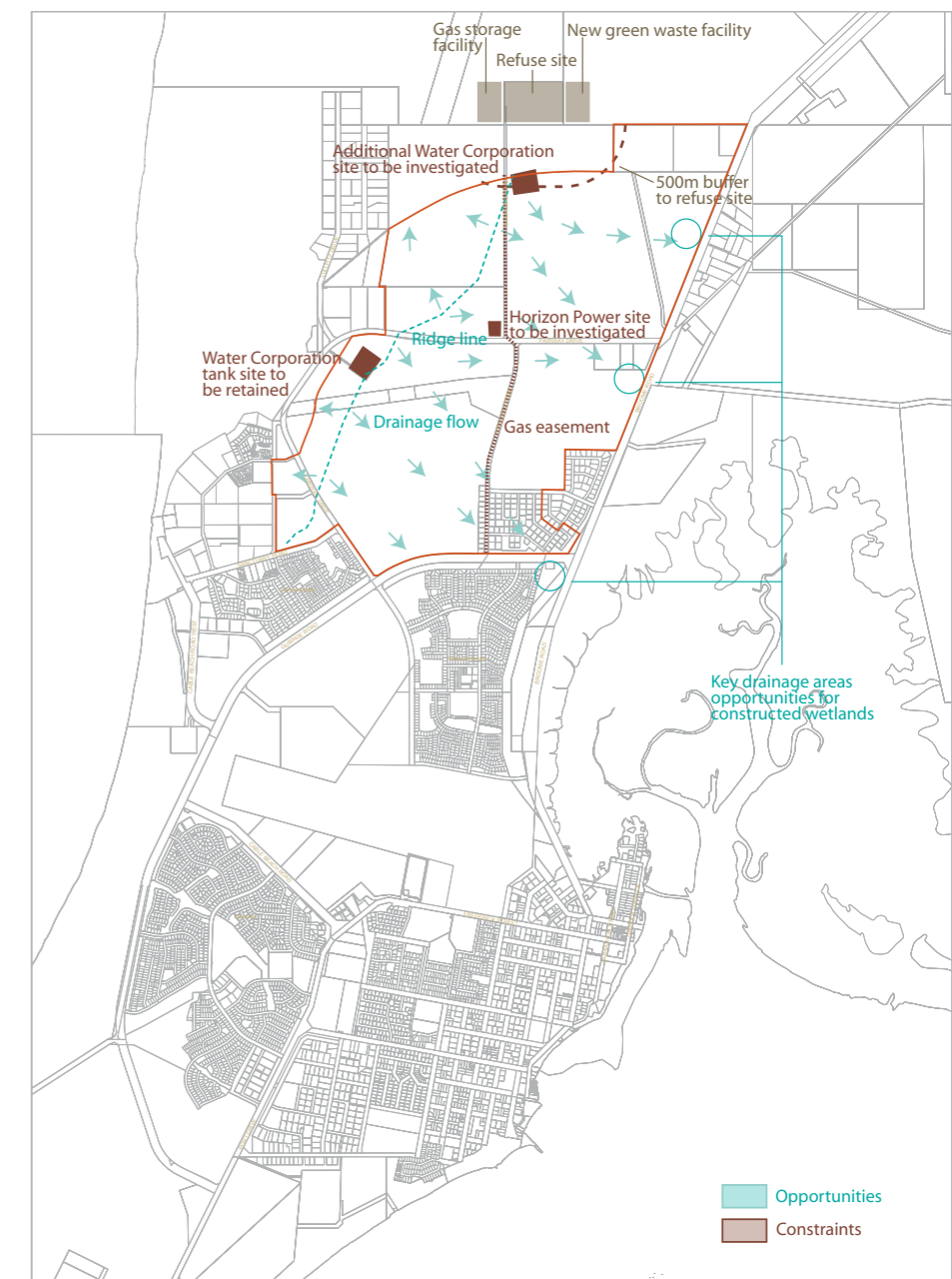
example of a small dry/ephemeral detention basin with weir control - recently constructed



example of an open drainage swale where mulched vegetation has been used on the embankments to encourage re-growth

OPPORTUNITIES + CONSTRAINTS

- drainage
- utility sites



QUESTIONS here are just a few - feel free to raise more!

- What form should drainage take?
- What sort of water recycling scheme might be feasible?
- What sort of renewable energy generation might be feasible in Broome?
- What sort of recycling program could be established and how would it be coordinated between the developer, the community and the Shire?

GOALS this is just a start - feel free to suggest others!

- Investigate opportunity for neighbourhood scale waste water recycling system piped back to houses via 3rd pipe for use in gardens and laundry
- Investigate opportunities for household and/or neighbourhood scale renewable energy generation (on-site and offsite)
- Investigate schemes to offset carbon emissions of project
- Establish renewable energy targets
- Establish program to eliminate landfill waste by use of greenwaste composting, worm farms, reuse and recycling centre
- On-site construction materials re-use and recycling depot and program in place for duration of project
- Design earthworks to minimise disturbance to natural vegetation and soil stability and maintain topography wherever possible
- Best practice water sensitive urban design (WSUD) consistent with the particular requirements of the Kimberley
- Maximise the re-use of materials on site through mulching of all cleared materials and use of topsoil to encourage re-growth
- Encourage non structural best practise storm water management techniques such as construction practice that controls the pindan erison onto the road system, maintenance of all roads and the drainage system and an Education campaign to increase the awareness of the drainage system and how best practise techniques can make a difference at the household level.

TRANSPORT AND ACCESS



The movement of people, the activity corridors, the arteries of the community.

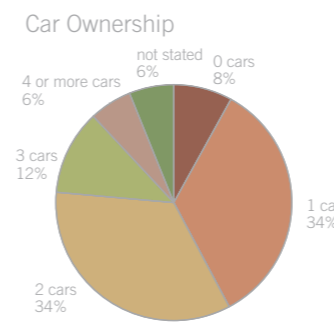
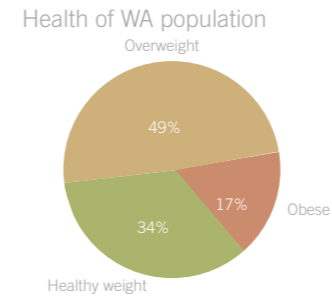
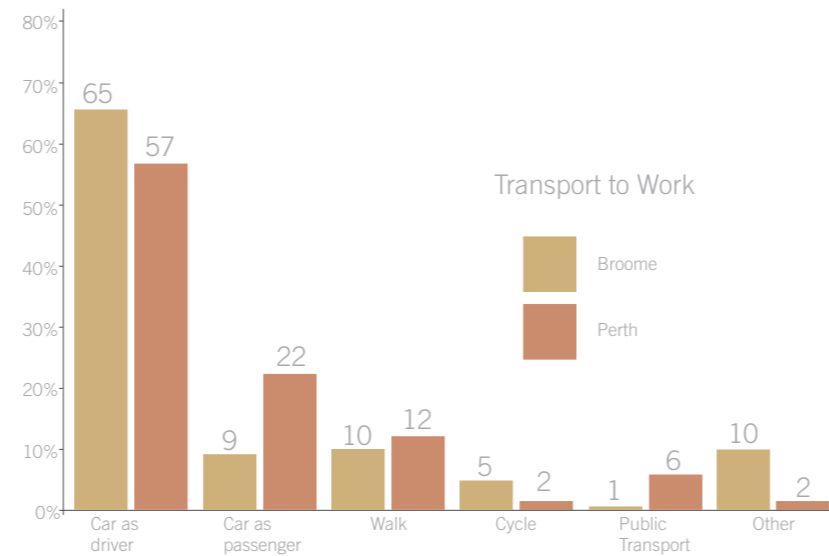
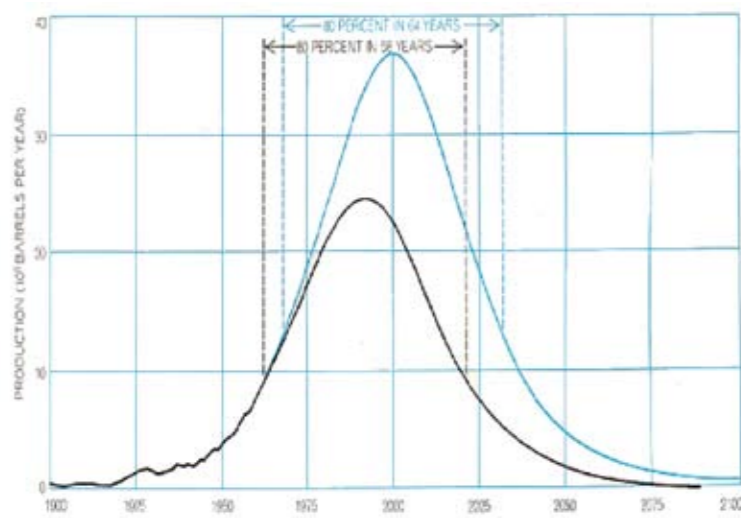
TOPICS

connectivity - legibility - walking - cycling - vehicular movement - public transport - service vehicles - road widths - intersection treatments - verge widths - setbacks - landscaping - parking

KNOWLEDGE some background information

“By making cities more people friendly, we also create cities that are livelier, safer, more sustainable and healthier.”
- Jan Gehl

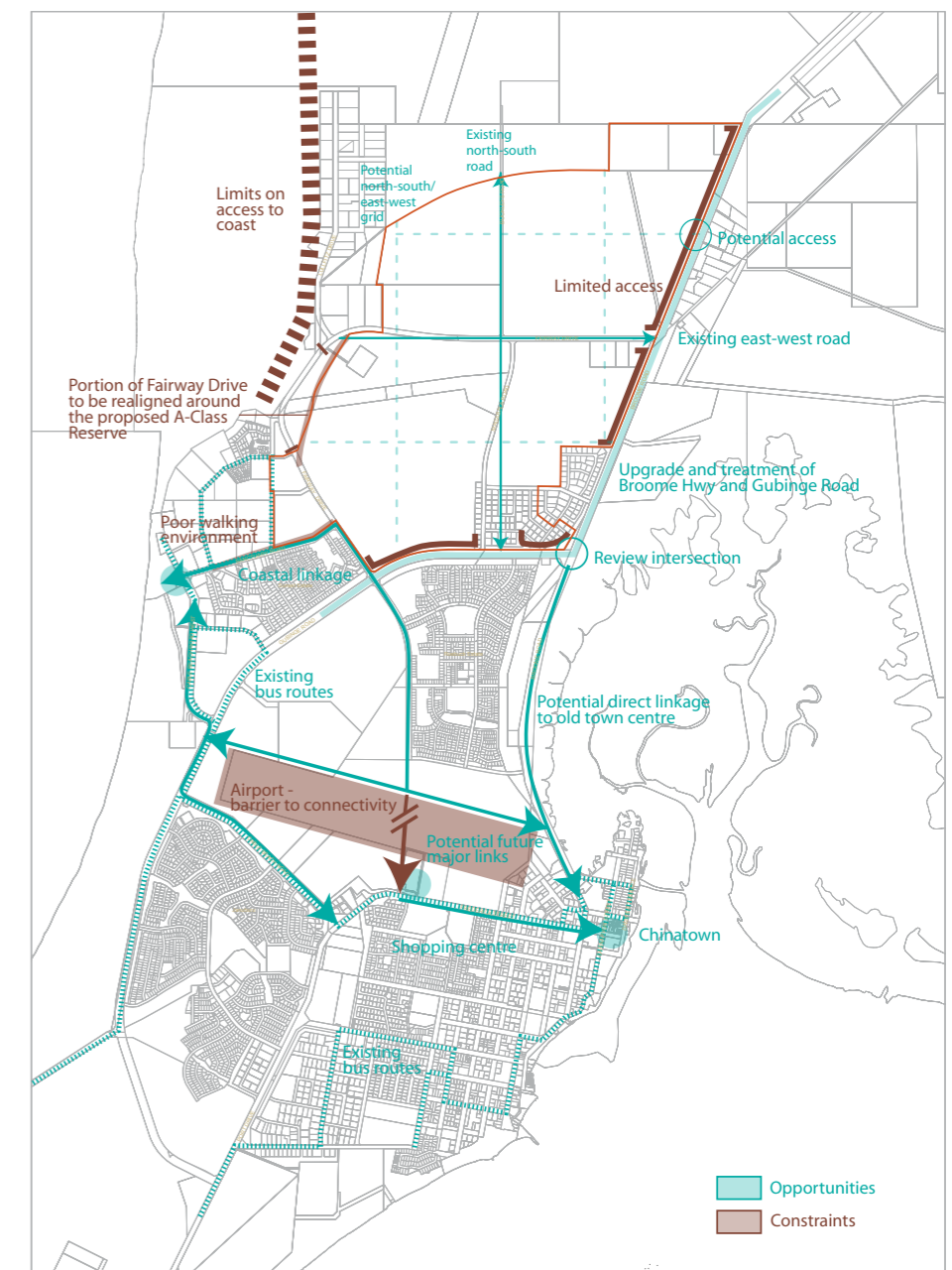
Peak oil is occurring now, how should we design for change?



Car ownership levels in Broome are identical to the state average, however less people drive to work and more people walk and cycle

OPPORTUNITIES + CONSTRAINTS

- intersections to Gubinge and Broome Road
- main thoroughfares
- linkages to Old Broome and the coast



QUESTIONS here are just a few - feel free to raise more!

- What design aspects are required to support walking and cycling? Think about distances, street paths, shading, resting places, end of trip facilities etc
- What are your favourite streets in Broome (or elsewhere)? Why?
- What are your least favourite streets in Broome (or elsewhere)? Why?
- What are the key destinations in Broome and which linkages need to be improved?
- What level of provision should be made for cycling and public transport?
- How big a problem is Gubinge Road for pedestrian and bicycle crossing - what can be done about it?
- When you walk around Broome -
 - Are the cycle paths easy to find?
 - Is it easy to cross the street?
- Round-a-bout - your comments?

GOALS this is just a start - feel free to suggest others!

- Legible, well connected and shaded streets
- Safe, convenient movement network for all modes
- Provide good connectivity and adequate capacity for travel to/from Broome North and major destinations including Cable Beach and “Old Broome”
- Reduce parking rates to accommodate reciprocal use in mixed use areas
- Maximise use of on street parking with commensurate reductions in off street parking
- Design local and neighbourhood connector streets for low traffic speed to improve safety and amenity for non-motorised travel

URBAN DESIGN AND PLACE



Our living environment, the neighbourhoods we call home, the underlying sense of identity derived from the physical environment.

TOPICS

heritage - neighbourhood structure - character - climatic response - breezeways - human scale - walking - cycling - land use - density - sensory stimulation - local centres - 'main street' - streetscapes - public life and private life - accessibility - lifestyle choice - changing households - transect - crime prevention through environmental design

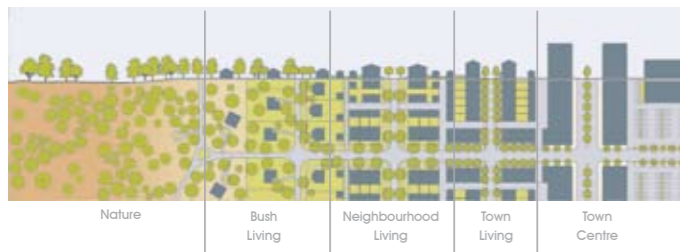
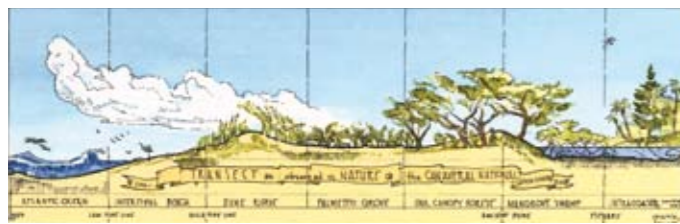
KNOWLEDGE some background information

A sense of place creates a feeling of belonging, fosters community interaction and plays an important role in mental health. Depression is predicted to be the leading cause of disability in WA by 2020 and currently is second only to heart disease as the leading cause of disease burden

Sense of place may be drawn from the landscape, the Aboriginal history and culture, the pearling industry, the tourism, the architecture, the sunset, the people, the festivals, post office boxes - anything uniquely Broome that resonates with you and makes you proud to call Broome home

"Design should tell a story about place and people - and be a pathway to understanding ourselves within nature"

- Sim Van der Ryn, Ecological Design Institute

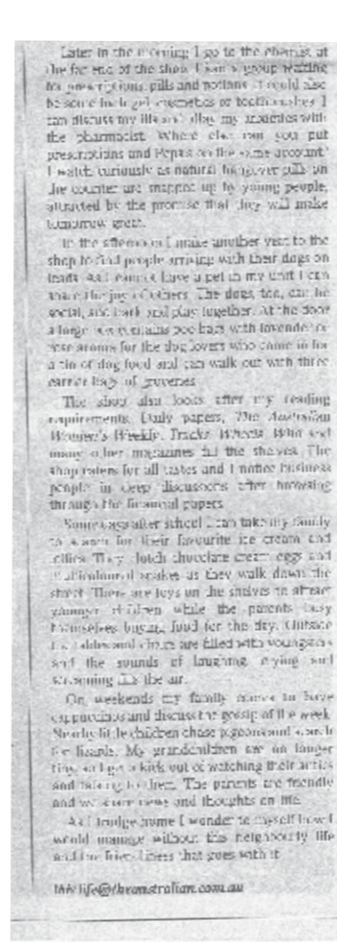


Natural Transect

In nature we can identify distinct changes in the transect from the coast to the bush. The whole ecosystem of each transect, including all the plants and animals, have adapted to the local conditions, the soil type, the wind and the water availability of their location. There are also varying levels of intensity, for example compare a rich biodiverse wetland with the harsh outback desert.

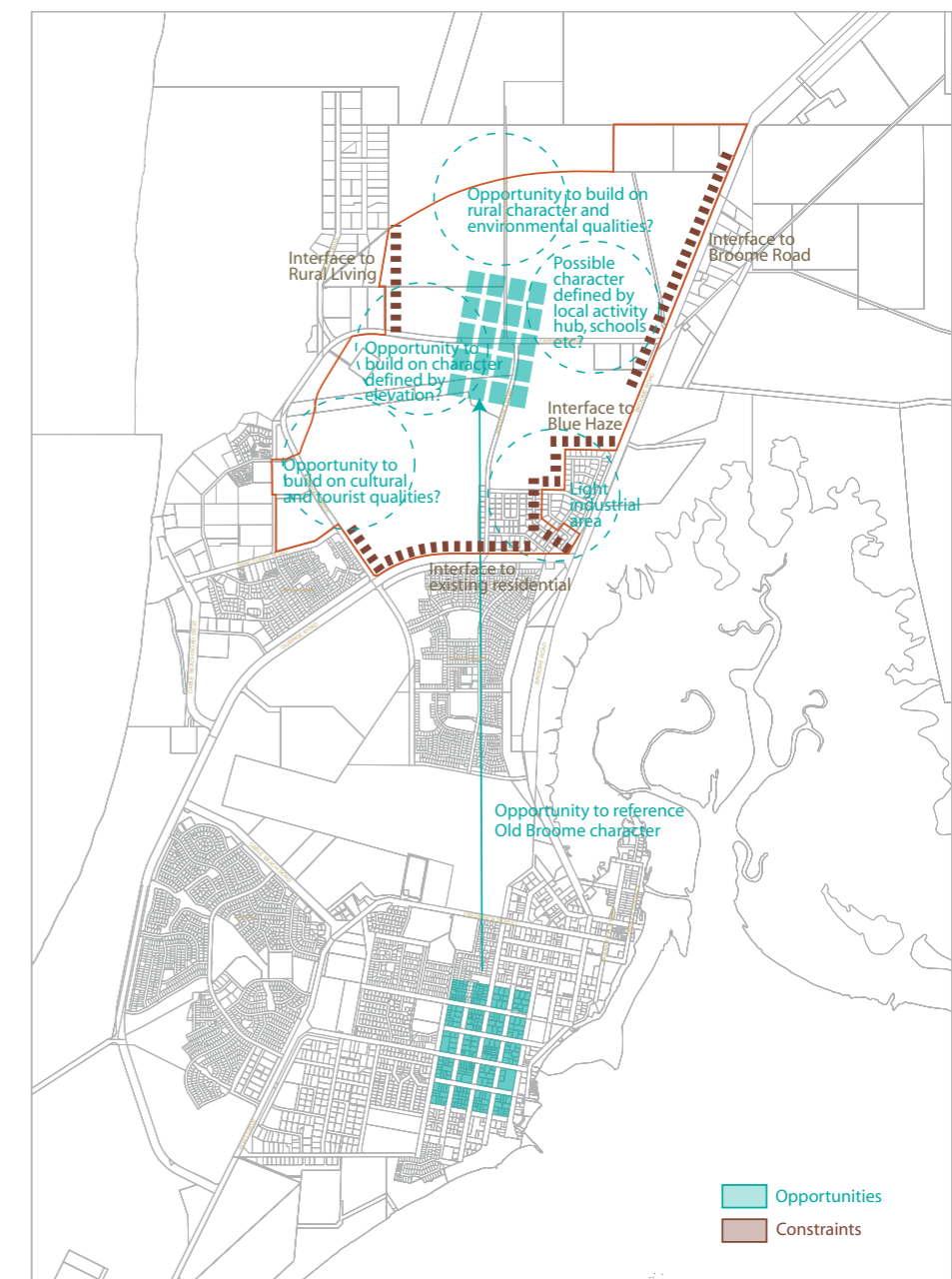
Broome Transect

There are also distinctly different human settlement types with varying levels of intensity. Consider the activity in a local centre with shops, libraries, post offices etc, through to neighbourhoods with recreational areas, through to quiet residential areas set amongst nature. All aspects of the environment including streets, public spaces, landscaping, lot size and building type should suit the character of the particular transect.



OPPORTUNITIES + CONSTRAINTS

structure
interface to existing areas
character references
local centres
key road connections



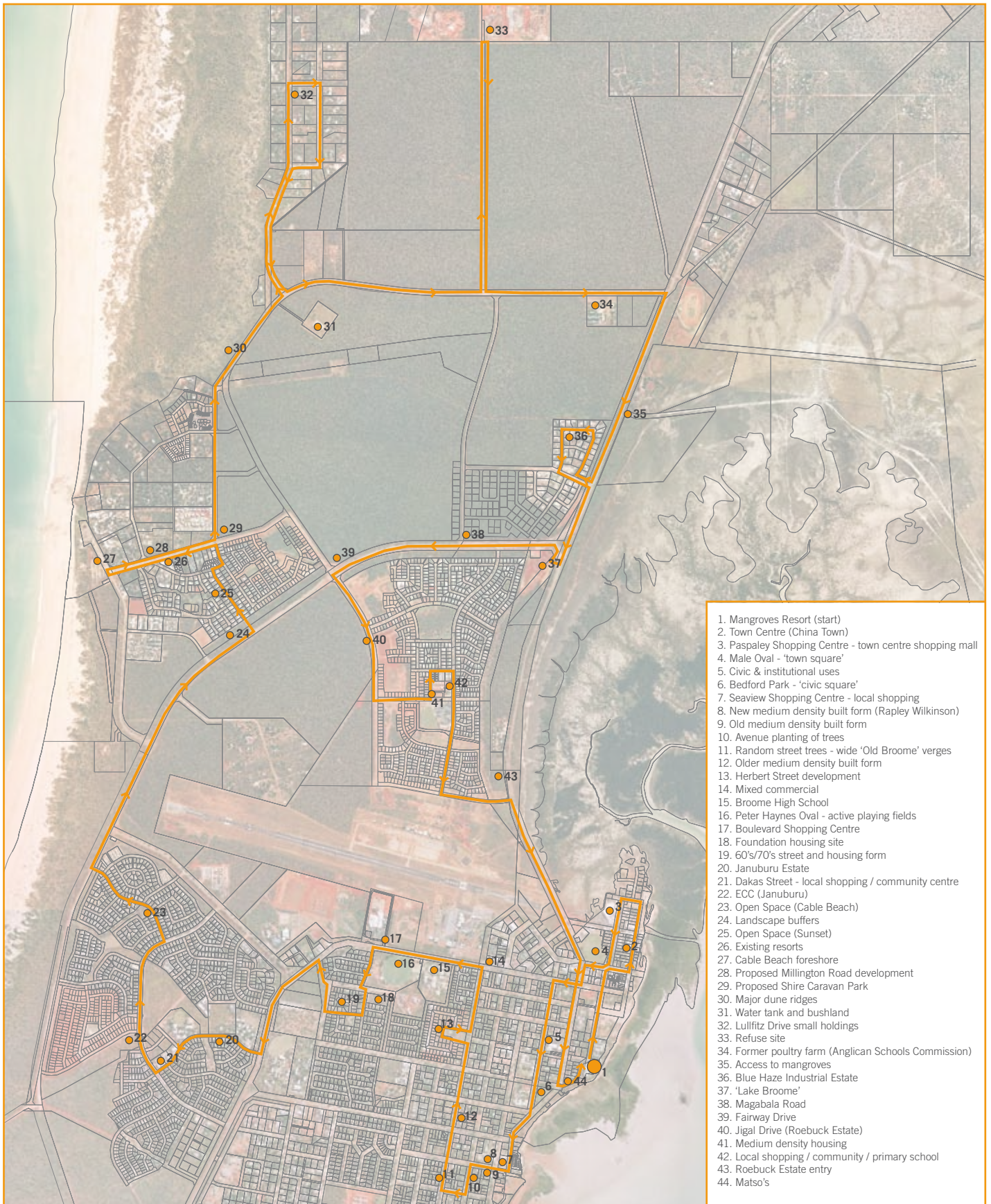
QUESTIONS here are just a few - feel free to raise more!

- What makes a place liveable?
- What aspects make you proud to call Broome home?
- What aspects of the streets, the landscaping, the buildings etc represent Broome's identity?
- What places should Broome North look and feel like? Feel free to provide photos
- Are there any places in Broome that should not be repeated? Why?

GOALS this is just a start - feel free to suggest others!

- Provide a network of connected neighbourhoods, each with their own character and identity
- Design each neighbourhood with a central gathering space, playground or community building
- Offer a range of lifestyle options to promote a diverse community
- Develop design guidelines to ensure the streets, public spaces, landscaping, lot size and building type are coordinated together and are appropriate to their location
- Provide a network of green corridors for cooling breezes, cultural linkages and habitats
- Encourage 'eyes on the streets and parks' through design guidelines to create safe public spaces
- Make provision for local centres to ensure residents day-to-day needs can be catered for within walking distance of their homes

SITE + CONTEXT TOUR



1. Mangroves Resort (start)
2. Town Centre (China Town)
3. Paspaley Shopping Centre - town centre shopping mall
4. Male Oval - 'town square'
5. Civic & institutional uses
6. Bedford Park - 'civic square'
7. Seaview Shopping Centre - local shopping
8. New medium density built form (Rapley Wilkinson)
9. Old medium density built form
10. Avenue planting of trees
11. Random street trees - wide 'Old Broome' verges
12. Older medium density built form
13. Herbert Street development
14. Mixed commercial
15. Broome High School
16. Peter Haynes Oval - active playing fields
17. Boulevard Shopping Centre
18. Foundation housing site
19. 60's/70's street and housing form
20. Januburu Estate
21. Dakas Street - local shopping / community centre
22. ECC (Januburu)
23. Open Space (Cable Beach)
24. Landscape buffers
25. Open Space (Sunset)
26. Existing resorts
27. Cable Beach foreshore
28. Proposed Millington Road development
29. Proposed Shire Caravan Park
30. Major dune ridges
31. Water tank and bushland
32. Lullfitz Drive small holdings
33. Refuse site
34. Former poultry farm (Anglican Schools Commission)
35. Access to mangroves
36. Blue Haze Industrial Estate
37. 'Lake Broome'
38. Magabala Road
39. Fairway Drive
40. Jigal Drive (Roebeck Estate)
41. Medium density housing
42. Local shopping / community / primary school
43. Roebeck Estate entry
44. Matso's