

Bobieding Layout Plan 1

Background Report

February 2004

Date endorsed by WAPC



Amendments

Amendment 1 - February 2011

Amendment 2 - May 2013

Amendment 3 - December 2016

Amendment 4 - November 2018

Table of contents

	page
<i>The Provisions</i>	
The Community Layout Plan	1
Purpose of the Community Layout Plan	1
Plan Area	2
Responsible Authority	2
Land Use Types	2
Purpose, Objectives and Principles for Land Use Types	3
Development Guidelines	9
Changes to the Plan & Review	15
<i>Layouts</i>	
Location Diagram	
Bobieding Community Layout Plan	
Bobieding Lot Numbering Layout	
Endorsements pages – Community Council, local government and Western Australian Planning Commission	
<i>The Report</i>	
Major changes since the report was prepared in 2002	
Background	17
General Information	22
Existing Facilities	23
Planning Approach	25
Development Constraints and Opportunities	26
Housing	28
Economic, Enterprise and Recreation	33
Health and Education	36
Fire and Disaster Management	38
Essential Services	42

.....	
Roads and Drainage	50
.....	
Other Aspects of the Plan	55
.....	

Attachments

- Attachment 1 – Land Apportionment – Beagle Bay and Bobieding
- Attachment 2 – Extract from CSIRO Report on Greenhouse and Global Warming
- Attachment 3 – Section of Housing Survey and Needs Projection
- Attachment 4 – Shire of Broome Planning Application Requirements
- Attachment 5 – Process and Phases of Planning
- Attachment 6 – List of Acronyms



History and process for the development of the plan

Background

The Bobieding strategic plan was initiated in July 1998. The project was temporarily interrupted mid 99 after the development of a preliminary ATSIC Business Plan (including housing survey, needs assessment and projections) and a draft layout.

The project recommenced early 2001 aiming to the completion of the town planning component of the plan, the review of the housing plan & the development of community based management systems for housing.

The Bobieding Executive Committee and community residents have committed time and efforts to the planning project. The plan touches a broad range of inter-dependant community development aspects affecting living, eg, housing, essential services, roads and infrastructure issues, environmental health & fire management aspects. Specific areas of the plan were extensively investigated and debated with the community to generate aware community decisions, ensure the development and implementation of appropriate community based strategies and to promote a coordinated approach to developments.

The objectives pursued in the plan revolve around improved quality of life, access to sound housing and appropriate infrastructure, efficient community management systems. The project gave special attention to community empowerment, recognising self-determination and seeking the participation and support of key stakeholders. The plan focussed on addressing expressed community concerns with developments.

The Bobieding planning report

The Bobieding planning report presents an overall picture on the factors that influence the development or physical growth of Bobieding.

The report is to be read in conjunction with the Planning provisions and layout dated December 2002. The report presents an overview on consultation, processes used to develop the plan, current circumstances (Bobieding now), community aspirations for the development of the land, community projects, development and planning limitations & opportunities, etc.

Recommendations have been introduced in the report to ensure that priorities for improvements and developments established through the planning project are available to all parties involved in Community development and to assist with coordination.

Improvements to the living standards and health in Bobieding rely on concerted agencies' support (including funding agencies, resource agencies project & program managers, designers/ engineers, local government, etc) and appropriate allocation and coordination of resources. The report provides reliable information to assist in the selection and development of future projects.

Role of the planner & the community ***For the development of the plan***

The development of the plan was founded on mutual respect and lead to the establishment of a trustworthy and effective working relationship.

The Planner

- Ensure appropriate consultation with the community aiming to the production of a community responsive town plan / strategic plan.
- Seek and develop community aspirations and incorporate Bobieding views, knowledge and aspirations in the plan
- Provide advice and raise community awareness and understanding on key development factors to be considered when making strategic planning decisions
- Convene relevant agencies to meetings with the community to advance some planning and development aspects

Or

- Inform relevant agencies on issues or concerns identified during the development of the plan or raised by the community

And/ or

- Direct Bobieding to relevant agencies to advance community development aspects
- Gather relevant information; investigate key aspects and compliance of the plan with key regulations unless for cultural or other reasons these can not be adhered to.
- Consult with stakeholders (including the Shire of Broome & Department of Planning & Infrastructure) to ensure agencies' awareness on Bobieding planning aspects and to facilitate the endorsement of the plan
- Develop a layout, provisions and report

Bobieding

- Seek the planner's advice on strategic planning and community development matters
- Transfer relevant information (physical data, community projects, aspirations, etc) to the planner to enable the development of the plan
- Consult and / or assist consultation with the Bobieding residents
- Contribute to the coordination of project & programs
- Investigate some planning and community development aspects.
- Make key decisions for the organisation of the land and future developments
- Review planning documents and endorse the Final Bobieding Layout plan.

The roles described above were adhered to during the development of the plan.

Consultation and coordination

An emphasis was placed on guiding the community to reflect on key issues, identify remedies and strategies, prioritize future developments & projects and preserve an overall approach to community developments to link and coordinate all projects in Bobieding.

Consultation with Bobieding

The plan was progressed in the form of workshops with the Bobieding Executive Committee. Issues were thoroughly debated and the Executive Committee demonstrated a high level of involvement in the project.

Site inspections were undertaken to confirm the location of existing and future facilities

Dates	Type	Purpose
16/ 07/ 98	Initial discussions	Introduction to planning Gathering community aspirations and site data
14/ 08/ 98	Workshop	Planing and housing aspects
09/ 12/ 98	Workshop	Planning and housing issues

On going discussion between Bobieding and Planner to advance community business plan

22/ 02/ 99	Workshop	Planing and housing
18/ 03/ 99	Community workshop	Work through housing issues Advance preliminary Business plan
10/ 06/ 99	Town planning workshop With Planner community and NBC	Progress the layout and planning aspects Coordinate with proposed housing project (NBC)
14 -15/ 02/01 or 21 and 22 / 02/ 01 CHECK		
23/ 04/ 01 (confirmed)	Joint agencies workshop. Convened Shire of Broome EHO & planner RAESP project manager & engineer, MFP, EHW,	Work through some planning issues and water upgrade project and layout Included site visit.
09/ 06/ 01	Workshop	Planning and community development aspects / Review layout/ Preliminary endorsement
04/ 07/ 01	Housing, town Planning workshop	Confirm the plan, review a couple of planning aspects, work through Housing issues
13/ 08/ 01	Strategic planning, housing, fire management and environmental health Joint meeting with the Kimberley Public Health Unit and the Fire and Emergency Services	Review the planning provisions, education information on agencies roles Work on Environmental health programs and training and fire management
19/ 11/ 01	Planning workshop:	Final review of the provisions and finalisation of housing policy. Advance housing lot numbering...etc.



Meeting in Bobieding April 2001



Additional meetings were held in 2002 / 2003.

Coordination and consultation with stakeholders

A range of agencies have been involved in the development of this project. These include but are not limited to the Shire of Broome, the Aboriginal Lands Trust, the Army, HGM project engineer, KRSP, Kimberley Public Health Unit, FESA, The Department for Planning & Infrastructure.

The Bobiending strategic plan coordinated with a number of key current and future projects including:

- AACAP program (ATSIC Army Community Assistance Program). The planner initiated research into alternative waste disposal technics and took the army engineering team to visit a sub-flow waste disposal trial in Derby “the Waste Water Gardens”.
- The RAESP water upgrade program. A full water upgrade will be undertaken in Bobiending through the state RAESP program. Water upgrade includes upgrade of bores, new water tanks and reticulation. The planning project was developed in close association with the RAESP project manager & engineer, and in association with the Shire of Broome Environmental Health / planning section.

Detailed information on the water upgrade program is presented in section “Essential services- Water”

- TAFE community training and projects including the Aquaculture and tourism programs.
Details about these programs, anticipated impact on the community & derived planning undertaking are presented under Section “Public facilities, Economic aspects- Enterprise”.
- Community survey organised and coordinated by the planner with the support of ATSIC regional council
- 1999- CHIP building project providing advise and planning for the construction of a new house in Bobiending (in conjunction with NBC, project architects)
- The Dampier Peninsula agreement (which targets Shire services to 5 large remote communities). When the plan was initiated Bobiending was the first “emerging community” on the Peninsula subject to extensive planning with the involvement of the Shire of Broome. Key services include Environmental Health and planning

The Development of a community based capacity for fire prevention and control as well as environmental Health training and Shire services were advanced through the plan. Negotiations were initiated with The Department of Sport and Recreation for funding for a basket ball court on the community.

ATSIC business plan

The Housing (management) plan and town plan will be compiled into a Business Plan or “Community Development Plan”. This document will support Bobiending with funding submissions to ATSIC and other relevant funding agencies.

Housing data collected has been a significant resource to anticipate housing needs for Bobiending and to assist with the physical organisation of the land and identification of future projects.

Limitations with the development of the plan

- Survey data not available until June- July 1999. Survey was undertaken on request from planner with the support from ATSIC Kullarri regional council.
- Wet seasons limit access to the community
- Other community/ planner commitments

Recommendations

Use of the plan & transfer of information,

The success of strategic planning in general and of the Bobieding Layout Plan in particular will depend on the frequency and the extent of its usage. The layout provides a sound basis for discussions, project selection, etc. Agencies are encouraged to work from and refer to this document as it acknowledges the community commitment to its development. Presentations to stakeholders (including service providers, funding agencies etc.) will improve coordination of developments, contribute to appropriate funding allocation and ensure all parties uses the plan when making decisions about developments in Bobieding.

<p>GOAL: "To inform agencies on needs and opportunities in Bobi to achieve appropriate projects & improved coordination"</p> <p>ACTION: The Bobieding plan to be presented to key agencies & councils (eg, ATSIC regional council, the board of the Ministry Of Housing Aboriginal Housing Directorate, etc.)</p> <p>TIME FRAME: Once the plan is finalised</p>	<p>ACTION RECOMMENDATION</p> <p>Bobieding&/or Planner</p>
--	--

Monitoring & Review

The Bobieding Community layout plan will need to be updated and reviewed on a regular basis to ensure that it incorporates incorporate new or emerging agendas and to monitor its implementation.

<p>GOAL: "To monitor the implementation of the plan"</p> <p>ACTION: The Bobieding Executive Committee & residents to meet to:</p> <ul style="list-style-type: none"> Reconsider priorities established in the plan and ensure they are still appropriate Refine existing strategies and identify new community based projects Anticipate needs to review of the plan and advocate for funding. <i>Community discussions (new issues & strategies) should be recorded to support future planning reviews. This information may be presented on an A4 format and attached to the ATSIC business plan and community layout plan.</i> <p>TIME FRAME / FREQUENCY: On a yearly basis</p>	<p>ACTION RECOMMENDATION</p> <p>Bobieding Exec. Com</p>
--	--

<p>GOAL: "To generate appropriate developments in Bobieding"</p> <p>ACTION: Undertake a full review of the plan.</p> <p>TIME FRAME / FREQUENCY: Four to five years</p>	<p>ACTION RECOMMENDATION</p> <p>Funding Agencies- State planning program managers- Bobieding</p>
---	---

General information

The Bobieding Community is named after a local fresh spring water hole called Bobbies Spring. Bobieding consists of members of an extended family and was founded by Mr Phillip Cox, community elder. Bobieding Community was incorporated under the Councils and Association Acts 1976 on the 26 August 1988. Since its incorporation Bobieding has grown from a group of three to a community of 50.

Essential services and housing were initially developed with funds provided by AAPA (bores), ATSIC (housing, transport and generator) and private contributions (early accommodation and water supply).

The Bobieding Executive Committee

Chairperson	Pauline Murphy
D/Chairperson:	<i>Vacant (Resigned)</i>
Secretary:	<i>Vacant (Resigned)</i>
Treasurer:	Fred Murphy
Committee Members:	Celine Howard Regy Cox Aquinas Howard Preston Cox
Adviser:	Marie Claire Cox (Snr) <i>Marie Claire Cox and Husband - Foundation members</i>
Associated members:	Sarah Murphy, Trevor Cox, Sylvia Shovellor, Cissy Blacky, Justin Howard, etc.

Executive Committee constitution in July 2002

Location, classification, land and tenure

Location

Bobieding is located on the Dampier Peninsula approximately 130 kms from Broome, 4 kms West of the Beagle Bay Community on the coast. From Broome access to Bobieding is via the Dampier Peninsula road, then pass through Beagle Bay and finally a track of approximately 3 kilometres leads to the community.

Issues regarding access are presented under "roads & drainage"

Classification

Bobieding is classified an emerging community in the DIA / ATSIC programs. Bobieding has a stable core population of approximately 50 people residing permanently on the land.

Population projections and anticipated increase and needs are presented in the housing plan and section "Housing" of the report.

Western Australia

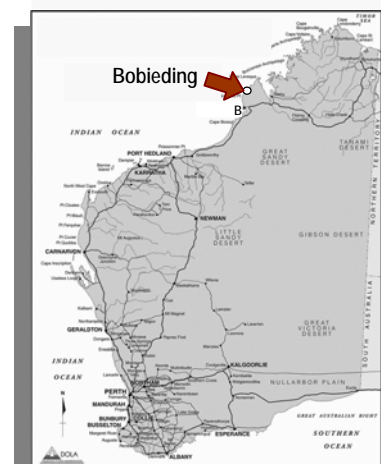


Diagram: location

Land aspects

The community is located on Dampier Location 5 (to be registered reserve number 46705/ Dampier location 429 in the future), which is part of the land formally managed by the Diocese of Broome.

The old "Mission land" is being surrendered to the State of Western Australia and the ALT indicated that it would be set aside as a reserve for Use and Benefit of Aboriginal Inhabitants with a Management Order issued to the Aboriginal Lands Trust.

An agreement between the Aboriginal Lands Trust and the Bobieding Corporation was drawn on the 27th August 1990 stipulating that when Dampier Location 5 came under the Trust (as part of the Mission Lands transfer Project) then a ninety nine year lease would be issued to Bobieding.

On completion of the mission land transfer process the Aboriginal Lands Trust will work with the Bobieding community to issue a lease over the land.

Bobieding requested an additional portion of land to undertake its cattle grazing activities. The proposed section of land is contiguous to Dampier Location 5. The leasing of the extra land to B will be subject to the outcomes of consultation with relevant parties who have interest in the land, including the Beagle Bay Community. The boundaries of the additional portion of land have been surveyed by a consultant and are subject to confirmation.

Information was provided by the Aboriginal Lands Trust

Bobieding is developing on its traditional land. Mr Phillip Cox is recognised as one of the traditional owners of the Niminbour area of Beagle Bay and also a member of the Nyul Nyul land area. A native title claim is being processed and considered by the Niminbour Land Council.

It is expected that once the Mission Land transfer will be finalised the land occupied and then leased to Bobieding will be subject to the Aboriginal Lands Trust "Land Transfer Program" which consists in handing back ALT land to Aboriginal interests.

Relationship to Beagle Bay, Broome and Derby

Bobieding is only some three kilometres away from Beagle Bay which the community accesses regularly for basic shopping, schooling, religious and regular health / medical services. Power is also provided by the Beagle Bay power station.

Bobieding relies on Broome for its major civic and administrative services, shopping needs and important health treatments. Some residents also have connections to Derby which is accessible during the dry season through a dirt track known as Nilli Bubaca road.

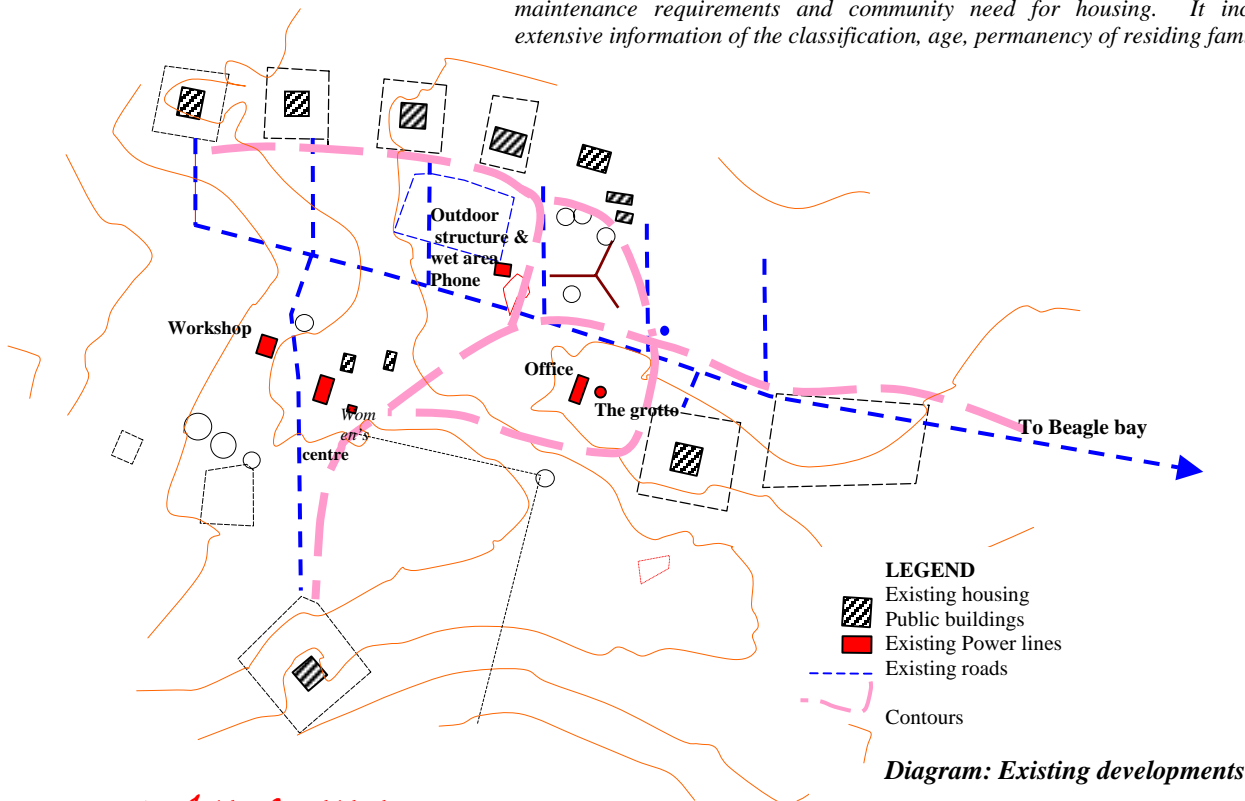
Existing facilities

The community currently consists of:

Housing

7 houses	The most recent house was constructed in 1999
2 Transportable buildings	Poor / unsafe condition
1 upgraded office	Structural problems due to Singapore ants/ Building "not considered worth upgrading" by the Army
1 caravan	Poor conditions do not meet basic housing/ accommodation standards

The Housing Plan presents details on the type, state, suitability of dwellings, maintenance requirements and community need for housing. It incorporates extensive information of the classification, age, permanency of residing families.



Public facilities

Office	Consists of a small room and the community has started to build an additional room
Women's centre	Has sentimental value/ Building occasionally used for meetings
Toilets / Wet areas	These are scattered in the community, next to the Women's Centre and in the central Community purpose area and at the back of the office
Phone box.	Located on the community purpose area (next to the wet area)

Maintenance activities

I Workshop	Storage and basic repairs of equipment and machinery
------------	--

Rural activities

Bees shed	
Stock yards	The land surrounding the community is used for grazing of cattle
Orchard	
Aquaculture / pond	(Currently experimental)

Essential services

Waste disposal	Septics/ Leach drains. Issues linked to raising water tables
Power	Supply from beagle bay power station
Water	Independent water system
Tele-communications	Telstra tower located in the centre of the community/ installed in the early nineties

Extensive information of essential services is provided in section of the report

Planning approach

Community aspirations

The Bobieding Executive Committee aspires to achieving good Living standards in Bobieding including:

- Appropriate housing for families living and working in Bobieding, supported by suitable community based mechanisms to maintain and improve the housing stock
- Improvements to community facilities and infrastructure
- Create opportunities for economical development and employment.
- Improve youth participation in community affairs
- Recreation for the community youth and workforce
- Autonomy with management of the community affairs and workforce

Self determination is anchored in Bobieding practices and the Executive Committee oversees every aspect of development.

Concept, overall land organisation

Extensive details on these aspects are provided in the following sections

Bobieding preferred to keep the main access road, workshop, women's centre, the Grotto (religious feature displaying Mary in a stone alcove located next to the office) and rural activity areas in their existing location. The Grotto and women's centre have sentimental value for the community.

The Bobieding community layout plan builds up on existing land organisation and uses. Residential developments (housing) have been arranged in a U shape around the central community purpose area making optimum usage of existing serviced land. This option incorporates the community requirements for privacy and separation between residences. A second residential / housing site has been established East of the existing settlement to cover for the medium to long term population increase and housing needs.

Community purpose areas include the main central area, a site at the entrance (that the community selected for visitors parking), the existing office site for administrative purposes and the site that houses the recreation centre. The latter was expanded to include more land and enable the upgrading of existing facilities or the development of new facilities. In general community purpose areas will house, civic, recreation, and meeting gathering activities. One of the community purpose sites at the entrance is also considered appropriate for over night visitors camping as it is closed to existing wet areas and as the community would like to control efficiently and limit its usage.

Areas unsuitable for permanent buildings were classified "park" as they form part of the built environment and are maintained regularly and were considered for passive recreation activities.

The Bobieding layout provides flexibility, incorporates community projects & aspirations and proposes options & scenarios for developments considering resource uncertainties associated with major infrastructure works on the community.

Some portions of land have been allocated a main use and an alternative use. The community will select which use will be undertaken on the land in function of development prospects and limitations when the time comes to develop (or re-develop) the land.

This applies to housing and community purpose areas on which the telecommunication tower is currently sited. The re-development of these two lots for residential or community facilities depends on the relocation of the Telstra tower (by Telstra). At this point in time it not certain as to whether this will occur.

Some sites have been allocated a joint use.

Portion of the orchard for instance might house water reticulation (services/ utility) and fruit trees (rural use).

The final layout

The final layout proposal was reviewed in two stages. Stage 1, included a thorough assessment of the water upgrade aspects, involving Bobieding Executive Committee, the Shire of Broome, the Ministry for Planning, the Health Department, the project engineer and planner. At the meeting held on the 23/ 04/ 01 the community agreed on the location of water mains, bore and water tanks. A site inspection was undertaken to verify the proposed location for the new housing area to the East and additional housing lots to the West of the office.

These aspects were confirmed at the following meetings including and the community finalised decisions about the aquaculture area, access to Celine's house, the women's centre, the width of road reserves & traffic, community purpose areas, location of the Telstra tower and sites for the construction of sporting facilities, review of the town planning provisions, etc.

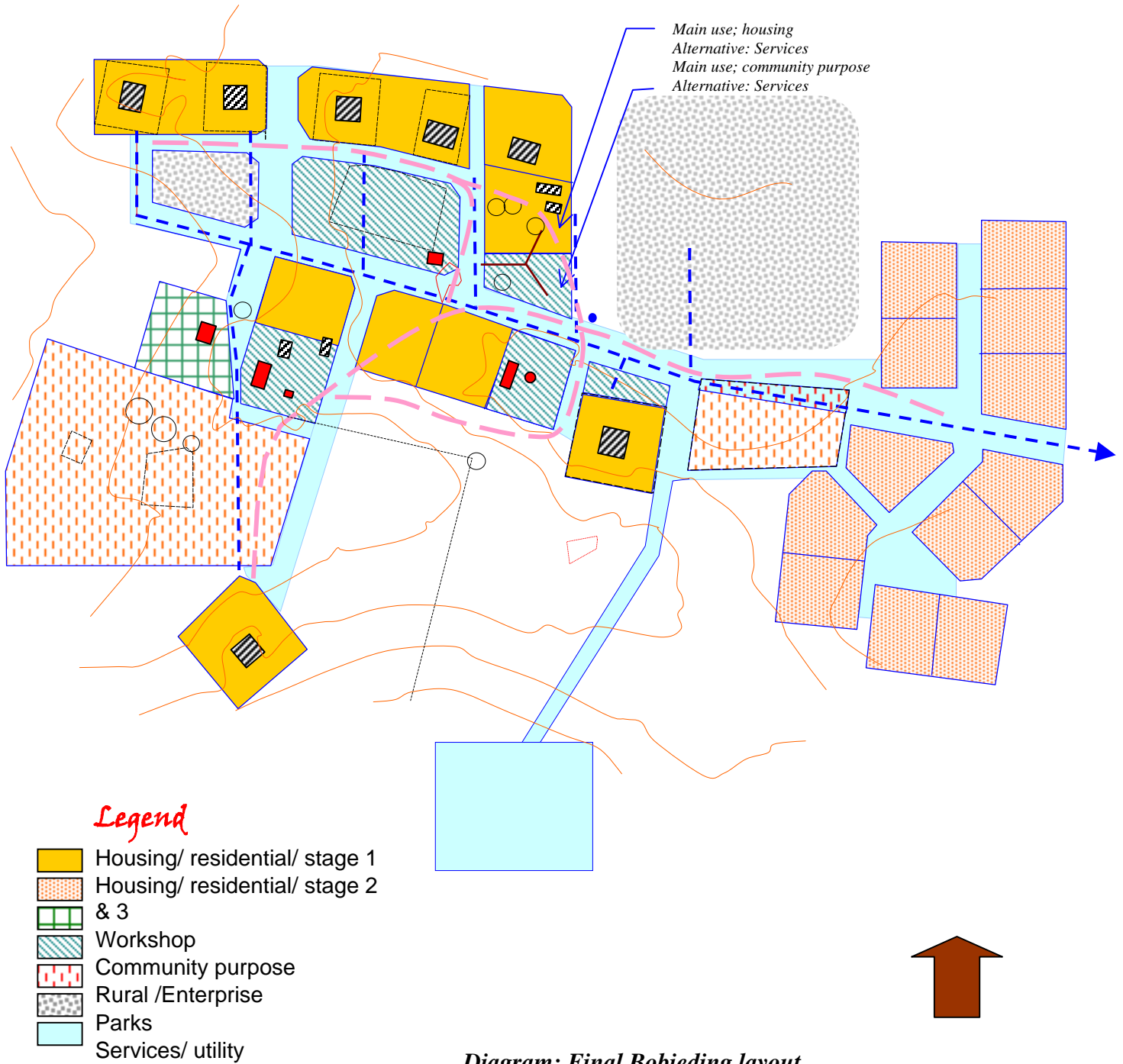


Diagram: Final Bobieding layout
To no scale / proportions accurate

Development constraints & opportunities

Synopsis of development issues for Bobieding

The following have been identified key development issues and needs in Bobieding:

Essential services and infrastructure

- Access. Poor state of the section of road between Bobieding and Beagle Bay, and of the Dampier Peninsula road
- Telecommunication tower located in the centre of the community limits housing development in prime living areas.
- Malfunction of septic systems during the wet season and associated health risks

Environmental Health

- Issues linked to Dust consequent to lack of road definition, landscaping and absence of lining of the internal community roads
- Water / High level of water contamination

Low water pressure

- Pest control including mosquito fogging, rodents, and other insects not available in Bobieding (Increase of Ross River and Australian encephalitis infections in the Kimberley region)
- Tip management

Fire and emergency management

- No community based capacity to control internal fires nor established mechanisms for external assistance

Needs/ fire control infrastructure, equipment and community training.

- Emergency aspects

Needs a cyclone shelter and the development of agreed community mechanisms for prevention and response to cyclones

Housing, Building

- Overcrowding and related health issues

Appropriate housing required to accommodate the specific needs of young singles

- Range of issues derived from cattle entering the living area
- Soils and morphology of the land restrict the location of community housing and facilities

Public facilities

- Some public buildings are old and need upgrading or replacing. This applies to the office and meeting area that does not meet appropriately the community administrative activities.

Employment training recreation

- Lack of Youth sporting/ recreation facilities - Bobieding is aiming to the construction of a basket ball court.
- Bobieding requires more employment and training opportunities

The impact of cyclone surge and global warming on Bobieding was initially investigated. Following comments by the Shire of Broome planner additional research were carried.

Development parameters

Research- The potential impact of cyclone surge & green house effect

Overview

Bobieding is a coastal living centre located at; Latitude 16 degrees 58 minutes 34.4 seconds - Longitude 122 degrees 37 minutes 57 seconds. The community has been established on the edge of a Bay on higher grounds (what seems to be an old dune formation now covered by large vegetation).

A number of agencies, including the Department of Meteorology, Port Authority, Rivers & Waters Commission were contacted to gather information on tidal levels (subjectivity of the site to tidal flooding), and the potential impact of cyclones (specifically cyclone surges) & global warming on existing and future developments. Investigations however were limited due to the lack of available data particularly:

- Bobieding survey data is "Assumed Level Datum" and it is not referred to the Australian Grid System.

This matter was referred to the Army on numerous occasions and requests were lodged for survey works as part of the ACAAP project. The Army did not proceed with the survey.

- Long term astronomical tide levels for Bobieding

Estimate- "Derby long term astronomical tide level 12m, Department of Transport

- The uncertainty about the magnitude of likely changes associated with Global warming.

Green house effect- Global warming

The Bureau of Meteorology climate manager indicated that it is difficult to determine the magnitude of likely changes (with a high degree of certainty) associated with global warming. The problem becomes more difficult as one narrows the geographic scale of the area. Changes on a local scale, even changes in sea level, will not necessarily be the same as the changes on a broader or globally averaged scale.

Research undertaken by the CSIRO (that has most authority in Australia) indicates that variations in sea levels are expected to vary between .1 and .8 of a meter in the next 100 years.

General information provided by the CSIRO is presented in Attachment 2

Cyclone surge

The Bureau of Meteorology acknowledged that a severe cyclone (Cat. 3, 4 or 5) may make a direct impact on coastal communities. They estimate that the return period of this kind of event is of the order of once every 50 to 100 years or so. Cyclones of this magnitude have the potential to generate storm surges of the order of 3m for a Category 3 and 5 metres for a Category 5. For the worst case scenario the storm surge would need to coincide with a high tide. Because of the daily tidal variation in this area the probability of storm surge inundation is reduced.

The level/ height of the community (AHD) is necessary to make any meaningful assessment about the risk of storm surge in Bobieding.

Planning perspective

The community has not in the past experienced flooding due to cyclone surges (even-though large cyclones have passed close to Bobieding) and the community is confident that the land is not subject to flooding. This is confirmed by the surrounding flora. Large trees indicate that salt water is not present on the land.

Sea level increase associated with global warming should not affect the community in a regular situation (based on identified high water level on site). Its impact in the situation of cyclone surge is difficult to estimate. A large number of coastal settlements could be subject to occasional impacts particularly in cyclonic conditions. Bobieding is located on the edge of a bay, which reduces the penetration of cyclone surge & the intensity of the "erosion effect" on the land.

A limited number of new housing sites are located within the built environment and the future “main housing” area is set back further from the coast. Requirements for future developments in Bobieding include a finished floor level of a minimum height equal to the one of existing residences.

Flooding and Coastal Vulnerability

In June 2016 Cardno WA Pty Ltd completed the ‘Coastal Vulnerability Assessments for Localities in the Shire of Broome’ on behalf of the Department of Planning (DoP). This provided DoP with flood and coastal vulnerability mapping and information on flood behaviour to guide land use planning, emergency management and assessment of building and development in flood-prone areas for the Bobieding community.

The information and mapping contained within the Bindunbur Final Report was used to initiate Amendment 3 to Bobieding LP1.

All developers at Bobieding are to refer to the Bindunbur Final Report before construction takes place.

Housing

Overview

Housing issues

Addressing over-crowding and providing appropriate housing to Bobieding residents and workers is considered the principal “short term” target for Bobieding. The Bobieding Executive Committee is approaching the provision of suitable housing as the foundation for a healthy and stable environment, and as a means to demonstrate the committee commitment towards the well being of their residents.

Bobieding observe a low housing turn over due to the stability of its core population and strong family ties & relationships. Current housing in Bobieding consists of 7 houses (3 to 4 bedrooms), 2 transportable and a converted office.

Two years ago Bobieding employed a consultant to develop a Repair and Maintenance report for the existing housing stock. The transportable are unsound and were vacated in the past year as the community was concerned about safety issues. These facilities are occasionally used by the community to house visitors

To complement the Community Layout Plan and develop community based mechanisms to improve housing the community has developed a housing strategy, which consists in:

- Population data
- Housing needs projection
- Housing policies, rental agreement and collection, Inspection forms. These will support Bobieding with regular maintenance and improvements and identification of needs for the provision of future housing. It is a requirement of the ATSIC business plan.
- Land suitable for the location of future housing (town planning)

Housing needs, projections

Immediate needs

To fulfil its immediate requirements for housing the Bobieding community requires singles quarters and 2 to 3 new dwellings. This will address immediate health issues linked to overcrowding and lack of housing.

The Housing analysis outlines the difficulties encountered in establishing a suitable and healthy living environment. It is clear that the existing housing does not accommodate satisfactorily the permanent resident population in Bobieding. Whilst there are currently 10 dwellings on the community (amongst which 7 are permanent and sound) the community is divided in 20 separate entities/ families.

In some instances a dwelling may accommodate between two and five independent families, including young families with preschool children, families and young adults. It is without saying that beyond the ramifications of overcrowding on people's health, the needs and activities of each category of families are radically different resulting in enormous difficulties to cohabit and to create a healthy, and suitable living environment.

Future housing needs

To understand and anticipate the physical growth of the Bobieding community it is necessary to rationalise the particular factors that dictates housing and service provision on Aboriginal communities in conjunction with population increase and age aspects, and unfulfilled existing housing needs.

Annual rate for natural population increase for Aboriginal and Torres Strait islander people in Australia is anticipated to be 2.2% to 2006 and 2.1% to 2011.

Reference / research papers "Explosion of Aboriginality: Components of indigenous population growth" and "Growth of Aboriginal and Torres Strait Islander population"

These estimates that encompass the Australian indigenous population do not differentiate between remote and urban communities patterns, and do not address local/ regional particularities. ATSI regional office advanced population growth figures approaching 4.2% for the region.

Projected population growth and housing needs for Bobiading

Existing Population	National projections 2.2%/ year	Regional projections 4.2% / year	Housing needs 5 years (2006)	Housing needs 10 years (2011)	Housing needs 15 years (2016)
50	1.1 persons	2.1 persons	Estimate 2 to 3 houses	Estimate 5 to 6 houses	Estimate 8 to 9 houses

These projections do not include current waiting list.

The Layout Plan provides up to 16 new residential lots, which are expected to accommodate housing growth for around 15 years. This prediction is based on projected population increase (shown in the table above) and development limitations associated with the lack of appropriate resources. The projection does not account for the potential redevelopment of existing lots (where dwellings are unsafe). A section of the housing survey and needs projection is included at **Attachment 3**.

Planning approach

Development constraints

The nature of the soils and the location of low laying land and high ground influenced the selection of future housing areas. These are shown in the diagram below.

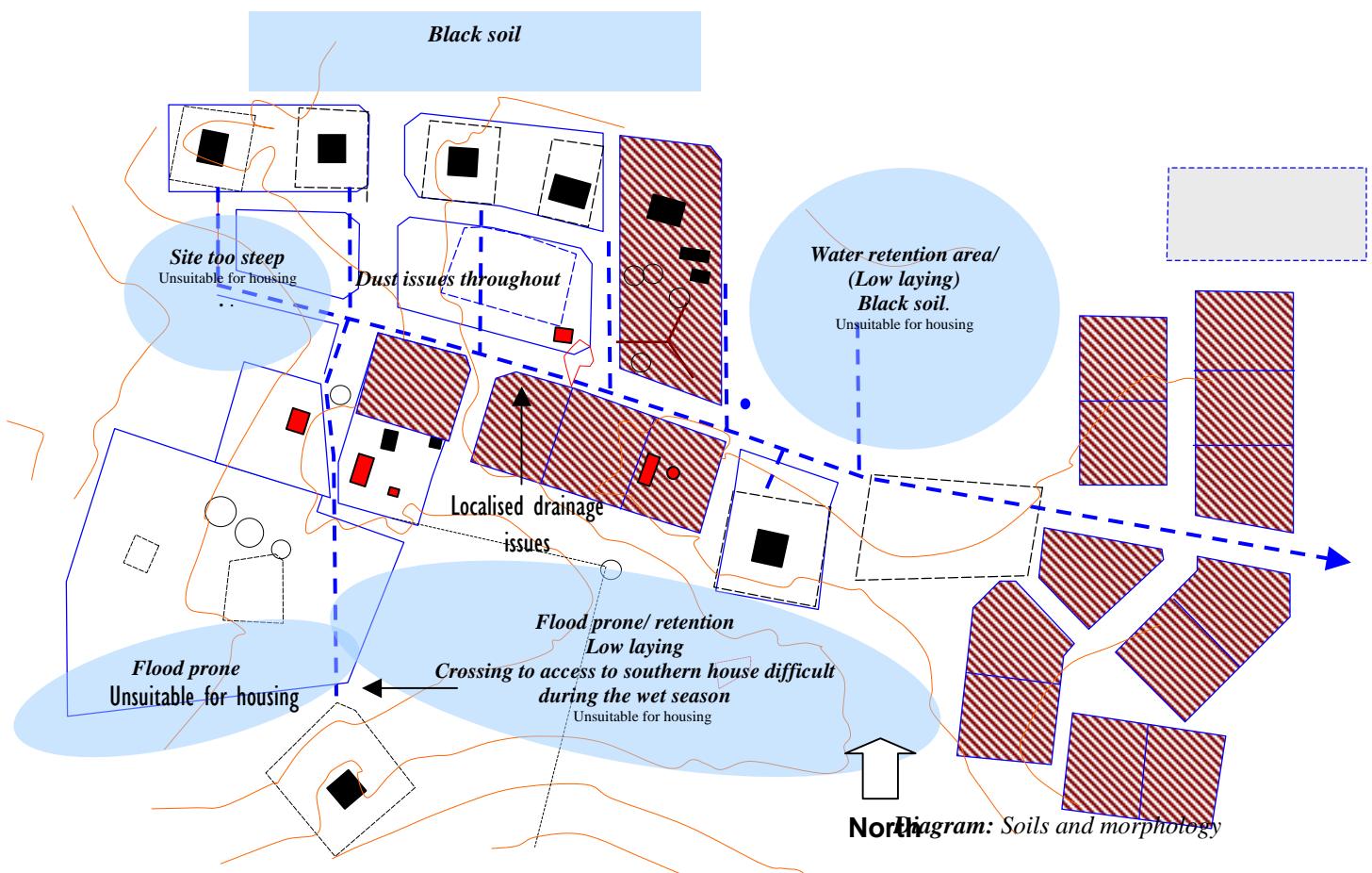
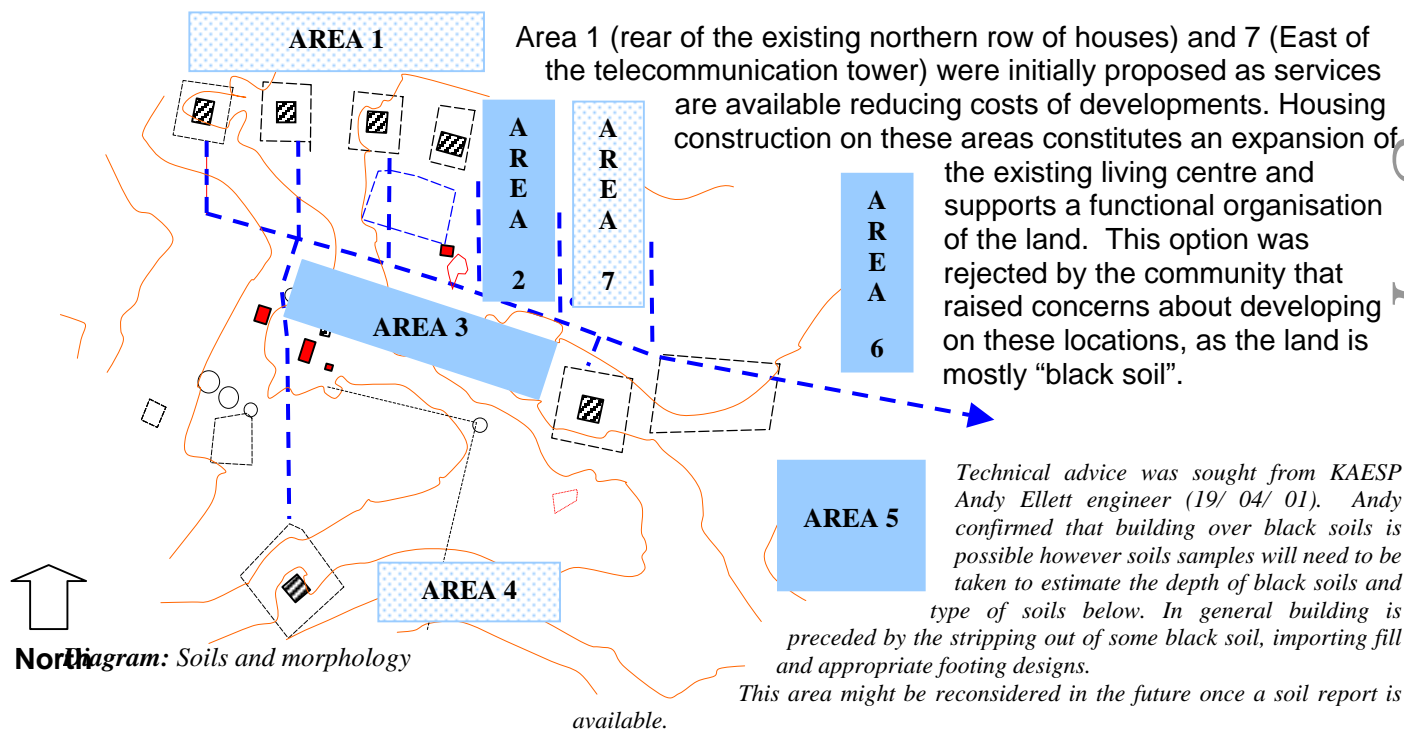


Diagram: Soils and morphology

Sites selected for the location of future housing

A number of options were proposed to and considered by Bobieding. These are shown on the diagram below. Land selected for future housing are areas 2, 3, 5, and 6.

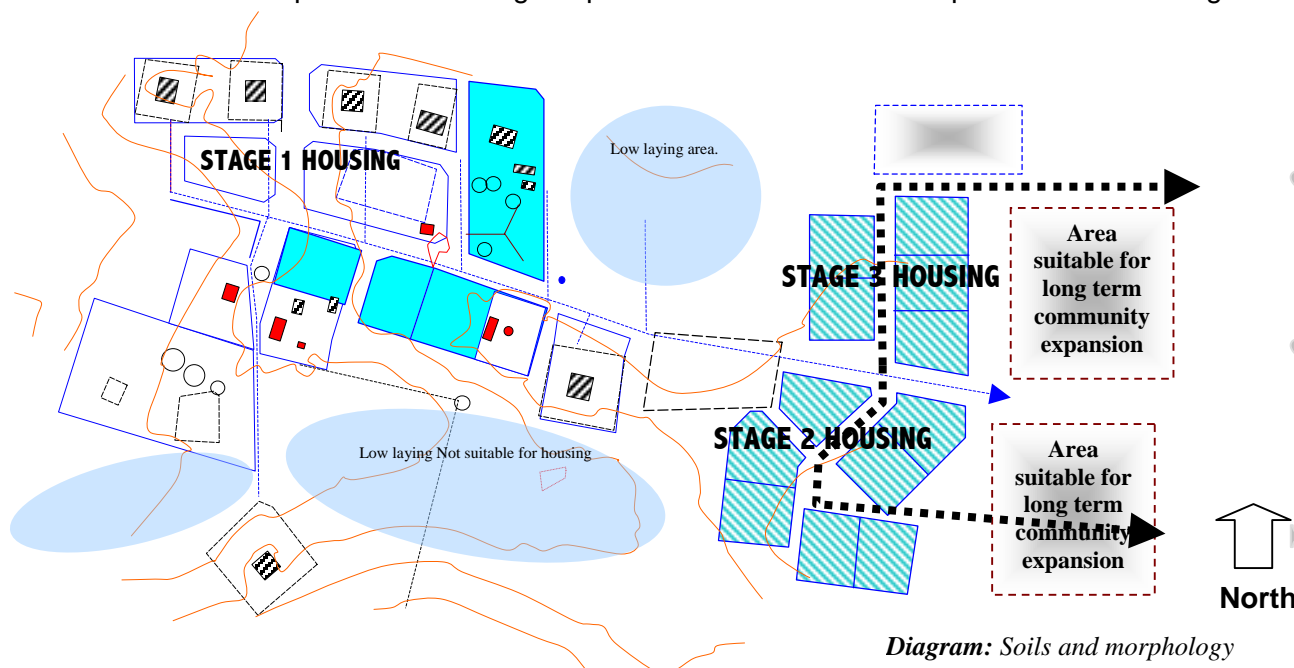


Area 7 was discussed. The community did not support this option as accessing the existing dwelling is difficult during the wet season because of a low laying area. The proposed location for the water tanks (and requirements for buffers between the water chlorination system and housing) now forbids constructing housing in this location

The old transportables are not sound for habitation. (Confirmed by the ACCAP engineering team). It will need to be demolished when the community re-develops this site.

Stages of development

With future developments Bobieding will proceed first with the development of the existing



community area shown as STAGE 1, then establish a new area south of the access road shown as STAGE 2 and finally North of the access road shown as STAGE 3.

The soils in housing area 2 and 3 are mostly sandy & local pindan.



Photo: Area considered for stage 2 and 3 housing

It is to be noted that the new areas for housing (Stage 2 and 3) can be expanded to the East. It is recommended that prior to developing stage 3 housing the community be given opportunities to reconsider the plan including expansion of housing area 2 to the East.

Singles quarters

Housing analysis revealed that Bobieding population includes a large number of single young adults, children aged 14 to 18, and young couples no children. To cater appropriately for this section of the resident population, particularly young singles Bobieding aims to develop singles type accommodation.

Appropriate type of housing to accommodate young singles including consideration for gender, basis for sharing and maintenance of the wet areas and kitchens, etc. were raised at community meetings. Separate dwellings with two bedrooms or duplex housing may be considered as they allow for gender separation and flexibility to accommodate singles, young couples, young couples with one child and enables easy housing rotation in the long term - (re-allocation of residence in function of waiting list).

Generous allotment sizes allows for the construction of single quarters or accommodation on a single lot (Recommended maximum 6 bedrooms). Two lots may be amalgamated if required by the community. Bobieding indicated that they would like to develop the singles accommodation within the existing community area (Stage 1 future developments).

Need for singles quarters were strongly emphasised to the AACAP project team. These will be developed through this project.

Recommendations

Recommendation:

GOAL: “To protect Bobieding living area”

ACTIONS:

Funding should be allocated to transfer existing survey information to Australian Grid System

Once survey information is available further research should be undertaken to estimate accurately potential impact of cyclone surge and green house effect on the community

REQUIREMENTS FOR DEVELOPMENT:

New housing developments shall meet slab levels of existing housing developments

**ACTION
RECOMMENDATION**

4

Developer /
funding agency

GOAL: “To preserve a good standard of housing in Bobieding”

ACTIONS:

Bobieding to develop & implement suitable housing maintenance & management mechanisms, including rental agreement

TIME FRAME:

Rental agreement is being developed. Completion of housing plan expected by end 2002. Implementation within 3 to 5 years.

**ACTION
RECOMMENDATION**

5

Bobieding
With the support of funding
agencies

Economic, enterprise & recreation

Bobieding CDEP

The Bobieding CDEP team fulfils significant roles in the community. CEDP activities and areas of responsibility range from administrative tasks to daily maintenance and improvements to the built environment.

CDEP is hosted by Beagle Bay that takes care of CDEP administrative management and payments. Bobieding aspires to a higher level of independence for the operations of its workforce and has strongly advocated to establish an independent CDEP team. Bobieding aims to achieve flexibility and autonomy with decisions, keep management expenditure low and within the community (reduce management costs).

CDEP program areas

The CDEP works and employment activity program incorporates 4 main areas of progress and development:

- Administration (including human and resource management, coordination, accounting, etc.)
- Women and Youth activities (Child minding, social justice, arts and craft, housing support, recreation)
- Rural enterprising (including pastoral / aquaculture / horticulture)
- Environmental health and other associated community programs (including rubbish collection, landscaping, pest control, etc)

The community through its CDEP is tackling a number of projects aimed to raise economical welfare, provide training and employment opportunities including:

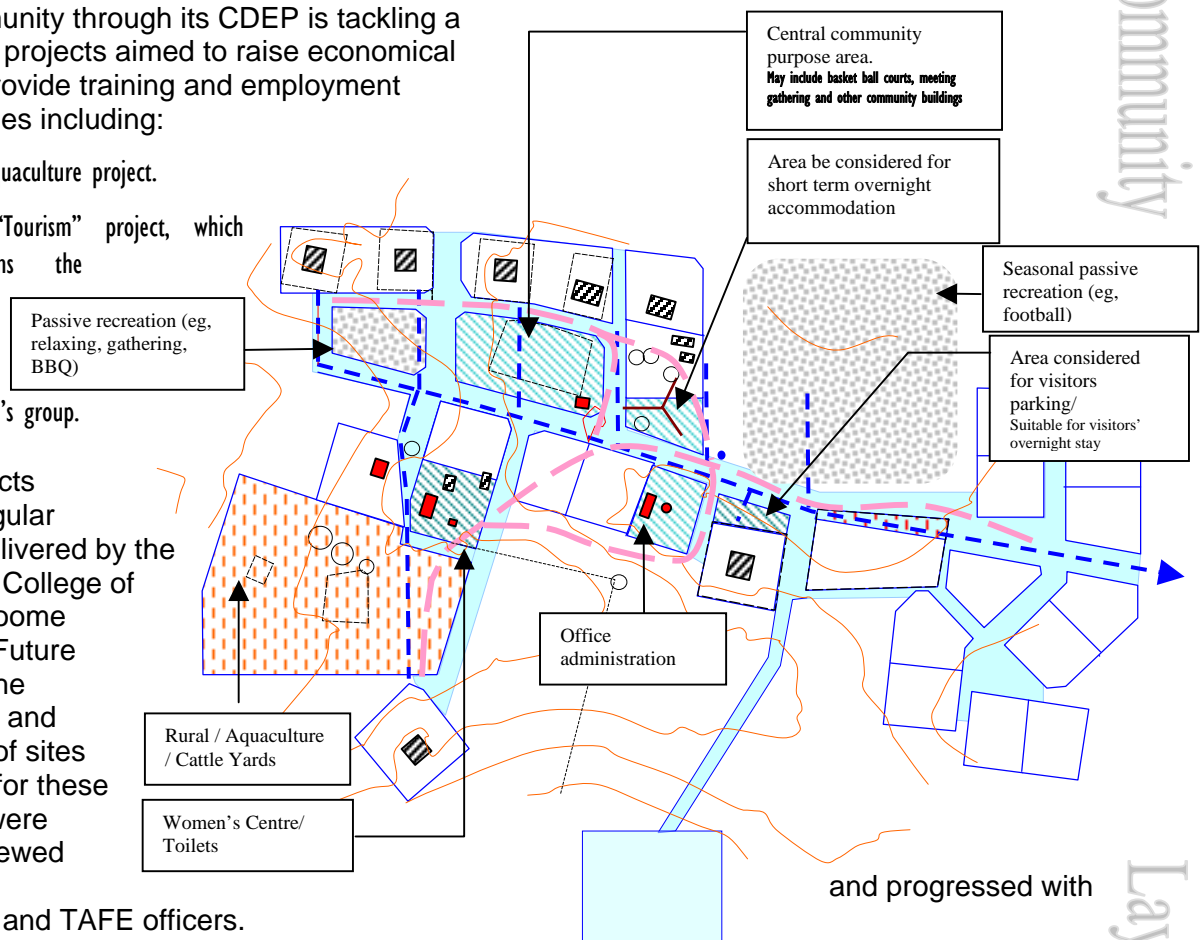
- The aquaculture project.
- The "Tourism" project, which concerns the

Passive recreation (eg, relaxing, gathering, BBQ)
women's group.

Both projects involve regular training delivered by the Kimberley College of TAFE / Broome campus. Future facilities, the availability and suitability of sites proposed for these activities were jointly reviewed

Bobieding and TAFE officers.

During consultation Bobieding also expressed interests in establishing an art and craft centre (& activities) and local radio (BRACS)



and progressed with

Public facilities

Public facilities includes a central community purpose area and sites to accommodate specific activities (eg, women's centre). Areas were identified for passive recreation, acknowledging that they form part of the built environment however are not suitable for the construction of housing or other main buildings.

The Women's centre area & tourism project

Tourism

Tourism on the Dampier Peninsula is increasing. Bobieding visualises its participation in tourism ventures as moderate with a limited and progressive influx of visitors for 3 to 4 months of the year. The community is considering being part of a day tours. Visitors would stop on the community to see some community assets and projects revolving around rural / bush activities, including the aquaculture ponds once developed. In association with the tours Bobieding is considering producing and retailing some Art and craft. The art and craft activities centre might be located either within the Women's centre precinct or on the central community purpose area.

Reference; discussions with the community and with TAFE instructor.

Overnight stay

When queried about visitors' overnight stay the community did not express a strong interest in establishing visitors camping facilities in the short term. Possible options however were debated. These included the development of joint seasonal recreation & camping facilities on the site located between the existing telecommunication tower and between housing areas 2 & 3, or using internal community area (Classified community purpose in the plan), which the community considers more appropriate as supervision is easier & toilets and showers available.

Rural activities and sites

Aquaculture is only at its initial stage of development. The existing pond may be extended with the construction of up to two additional ponds. TAFE Indicated that existing fresh water spring may be sufficient to cater for future water needs and that single phase power supply was appropriate to cope with the planned expansion. Power will service small compression type aerator.

On a planning perspective a rural purpose site was established to allow for the continuation of existing activities and the development of additional infrastructure including new fish ponds and ancillary buildings (eg, shed), cattle yards, fencing / landscaping. Additional rural activities include grazing of cattle and honey collection.

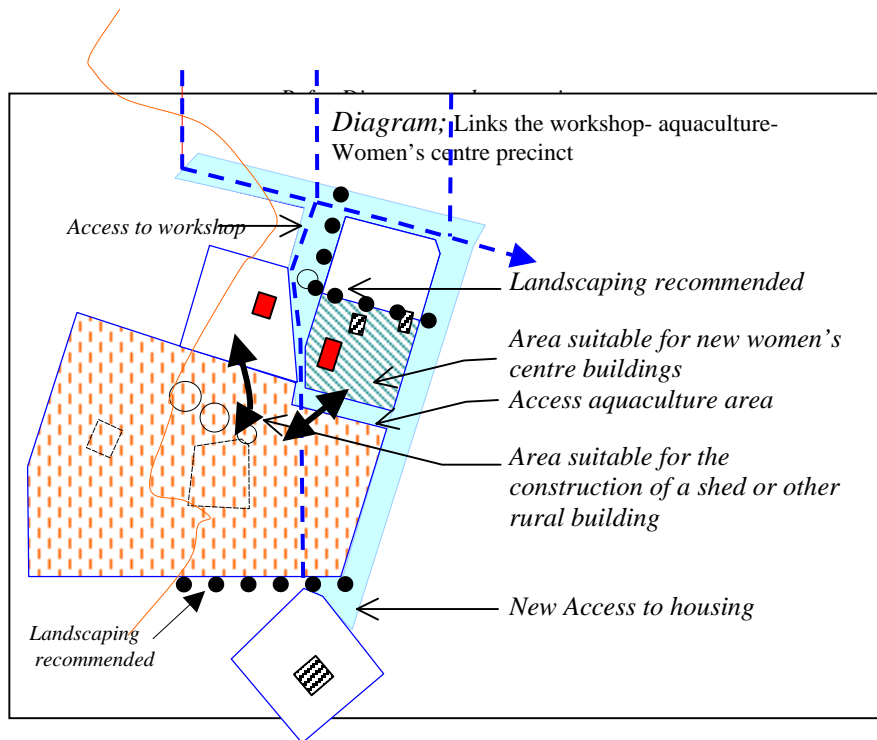
Neighbouring aspects,

Storage /workshop, rural & women's centre precinct

Neighbouring uses including storage workshop, public facilities, rural and residential are not expected to create major disturbances to each other. The workshop is used for occasional maintenance, rural activities and tool storage. Visitors/ tourists in Bobieding are expected to be limited. Women's centre and rural activities are linked and separate access has been provided to each activity.

Service corridors and access ways established in the plan will ensure that future buildings in the various activity areas are not developed too close to each other. In addition to clearly differentiate and separate these areas & improve the amenities It is recommended that the community landscape boundaries of adjoining activity such as the joint Community purpose – residential, workshop- Community purpose / residential, Rural – residential boundaries.

The tourism venture and aquaculture project are not yet fully operational. Needs and requirements for upgrading existing facilities and constructing new buildings should be reassessed within 6 to 12 months of operations. It is recommended that a layout (organisational diagram) be developed over this precinct focussing on the links and separation between activities, pedestrian and vehicular access and movement and landscaping.



Administration

Administrative and civic facilities consist mostly of the office building. The lot on which the office has been erected is also prime land for housing; however this lot was kept for administrative facilities as it house the Grotto which is a significant religious figure to the community. This feature can not be relocated.

Issues / needs

Bobieding has in the past focussed on the provision of housing. Administrative activities are now becoming a core function of community development and operations. The office is old in an average condition. It consists of a small single room, and lacks space for meeting & storage. The community started to renovate it, adding a new room.

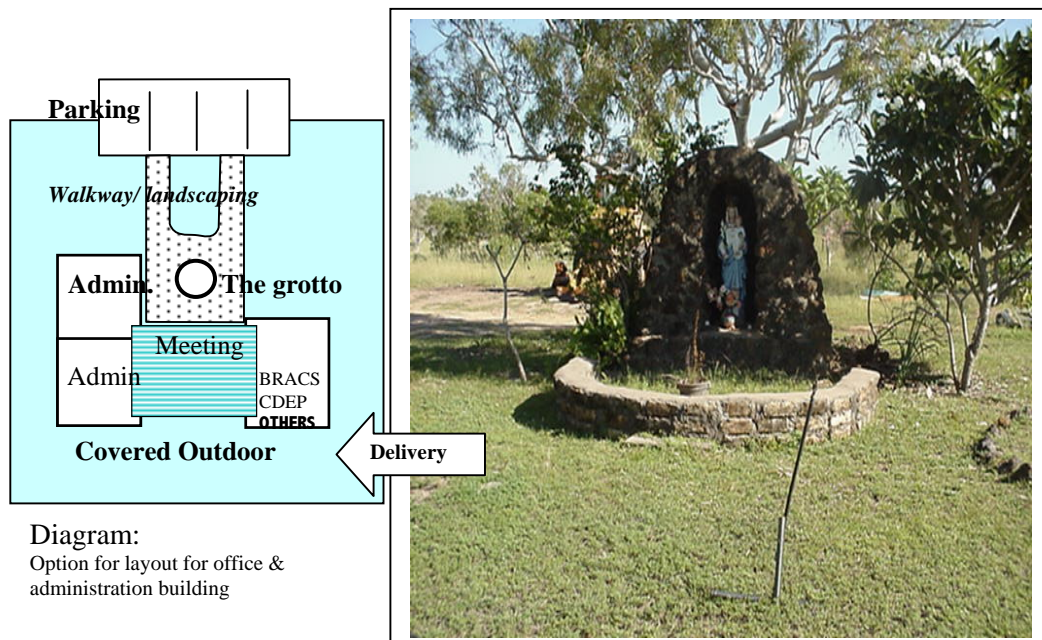


Diagram:
Option for layout for office & administration building

In the short to medium term it is expected that Bobieding will need to undertake a full upgrade of the existing office facilities (including constructing a new outdoor space and storage area) or construct new administrative facilities. Other functions such as CDEP centre, and long term community projects such as the local radio station projects could be accommodated in the future buildings. The building may take a u shape to valorise the existing grotto. The Diagram above shows the possible design and layout for the office site.

Central community purpose, park and recreation

The central community purpose area consists of a wet area, telephone booth, outdoor structure, and kids playground. This area may in the future house a range of public facilities. Discussions with Bobieding resulted in locating future basketball courts to the North West corner.

In the provisions landscaping has been promoted as means for improvement to the living conditions and general amenities in Bobieding. Landscaping is presented in the next Section "Environmental Health".

Park and recreation areas are considered for passive recreation and seasonal use as these areas present drainage or soil problems. Park & Recreation are not suitable for the construction of housing.



At this point in time Bobieding is tackling a broad range of projects and the development of community purpose and parks/ recreation areas will depend on the progress of these projects. It is recommended that Bobieding develop a detailed layout for the development and organisation of the public facilities including administrative, enterprise, recreation, etc.

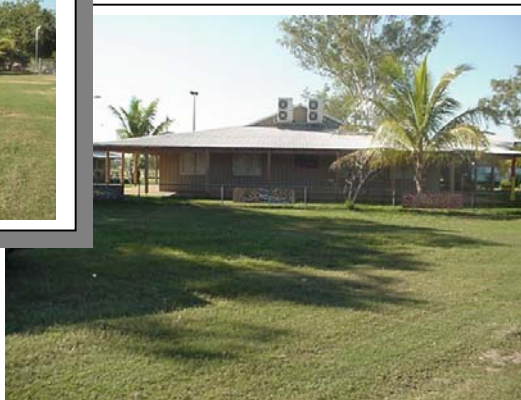
Health and education

Health services, schooling

A nurse resides in Beagle Bay providing regular and emergency health care to Beagle Bay and neighbouring communities including Bobieding. Daily medical services are complemented by weekly doctors' visits.

The Church has had a long term presence in the region and still assumes a key role with religion and education. The Beagle Bay catholic school caters for the community and close by out stations delivering pre-schooling and schooling education.

Beagle Bay schooling facilities



Environmental health

Environmental Health aspects have been developed with the valuable contribution of the Glen Fiorini, Shire of Broome "Aboriginal Community Environmental Health officer" and Michelle Mount from the Kimberley Public Health Unit. Representatives of both agencies attended planning workshops and meetings to progress relevant issues

Major environmental health issues in Bobieding include overcrowding, pest control, cattle, malfunction of waste treatment systems, dust, tip management, etc. Some are presented in the following sections:

- Overcrowding- presented under the "Housing" section of report
- Problems with septs and waste treatment issues are presented under section dealing with "Essential services"
- Rubbish management and disposal presented under section "Essential services"

Pest control

Pest control includes a range of animals and vermin. Specific areas of concern in Bobieding includes mosquito, Singapore ants, termites, mice, cockroaches

Bobieding is well maintained and slashed regularly which reduces mosquito breeding ground however the housing/living area is situated on the edge of the tidal flats/marsh area, which is subject to plagues of mosquitos at certain times. The community is considering acquiring a fogger and appropriate equipment to carry out fogging, in conjunction with training.

Dust control- Landscaping

Landscaping constitutes an important means to improve the overall built environment. Landscaping programs can incorporate planting shading trees and screening specific areas, establishing lawn areas, providing benches, traffic barriers and other urban furniture, etc. Screening and establishing vegetation is particularly recommended in areas where two different type of land use adjoin for instance along the Western boundary of the office to screen and preserve privacy for the future residence and separate the living activity from the administrative function. Landscaping is an area of interest for the Bobieding Executive Committee.

Issues associated with cattle wandering in the built area.

The land surrounding Bobieding is used for grazing and the community now has approximately 70 cattle. Cattle wander occasionally in the built environment and the community has had difficulties restraining the animals. A drinking trough is located close by the entrance which is believed to attract the animals. Concerns with cattle include pollution of underground water tables, transmittable diseases associated with faecal contact (children), and threat to landscaping projects. Bobieding has already built some fencing to stop cattle entering the living area. With the planned increase to the existing fish-ponds the community will consider fencing an area to stop access by animals.



The community indicated that they would select 2 community members including a male and female to undertake environmental health training through the joint Kimberley Public Health Unit- TAFE state training scheme. CDEP top up is provided to trainees. These positions will be a significant asset to support the implementation of the Bobieding housing management plan

Fire and Disaster management

Fire prevention and control

This aspect of community planning has been developed in close association with Simon Hart from FESA (Fire and Emergency Services).

Areas investigated:

- Fire prevention and control (fire breaks, general maintenance, community capacity to prevent and control fire)
- Training
- Fire infrastructure and equipment

Fire threats in Bobiending includes bush fires and community based fires. Bobiending community living area is well maintained and slashed regularly reducing noticeably the risk of fire propagation in the situation of house fire (community based).

Bobiending has contracted appropriate insurance to cover for community assets.

Needs

Due to its isolation Bobiending needs to establish a safe & efficient community-based capacity to prevent and control fires. The following was identified in Bobiending :

- Community area is maintained regularly
- Community infrastructure and equipment are not available on the community. Low water pressure experienced with the existing water mains would restrict efficient and diligent fire control operations.
- The community has not had training in basic fire control including safety of operations, safe practices for instance with “back burning”, etc.
- Extinguishers are not fitted in public buildings
- Smoke alarm detectors are not fitted in the old housing

To advance fire management aspects in Bobiending a meeting was organised involving the community, the planner , Health Department and Fire and Emergency services. The outcome of the meeting included:

- The provision of some fire alarms (FESA proposed to supply and install new alarms in houses at the next meeting)
- Discussed FESA’s support for the acquisition of slip-on-units,
- Advice on appropriate fire infrastructure,
- Consideration for community training.
- Agreement for a joint community- FESA- Planner review of the water upgrade engineering design and recommendation for the provision of coordinated fire infrastructure

Strategies

The water upgrade program provides opportunities to deliver new fire infrastructure in Bobiending. Infrastructure commonly delivered in Aboriginal communities includes Hydrants and/ or reels, which may not be appropriate in Bobiending and compatible with standard equipment. Fire management will need to be coordinated and attacked on a number of fronts conjointly including acquisition storage and maintenance of new equipment and infrastructure, training for the community.

Recommendations to this effect are attached at the end of this section of the report.

Disaster management

Issues, needs

Emergency and disaster planning operates on the PPRR; which is prevention (before and in advance of disasters), Preparedness (when disaster is predicted or imminent), response (during disaster), and recovery (following disaster).

Some Bobieding residents raised concerns about disruption resulting from the evacuation of residents during the most recent cyclone. It was also identified no buildings in Bobieding were built to be used as a cyclone shelter (building designed and constructed to safely house community residents in the event of a cyclone). Recent dwellings are designed according to the BCA to sustain cyclonic conditions.

Strategies

While in the past the community had been evacuated some members would like to develop strategies to protect the community and its residents from cyclones while remaining on the land

FESA has acknowledged issues with evacuation and indicated that suitable prevention (including infrastructure and equipment) could be developed enabling cost effective emergency operations and aiming to develop strategies for the community to “safely” remain in Bobieding. This includes the construction of a cyclone rated shelter and an emergency plan for Bobieding.

Street names and lot numbering were be developed as part of the plan.

Recommendations

Public facilities

<p>GOAL: “To plan appropriately for the development of community purposes and recreation areas.”:</p> <p>ACTION:</p> <ul style="list-style-type: none"> • Develop a detailed layout for the development and organisation of the public facilities including administrative, enterprise, recreation, etc. and over the women’s centre / rural/ workshop precinct (focussing on the links and separation between activities, pedestrian and vehicular access and movement and landscaping.) 	<p>ACTION RECOMMENDATION 6</p> <p><i>Bobieding/ Planner</i></p>
<p>GOAL: “To improve administrative operations and develop suitable and centralised office facilities ”:</p> <p>ACTION:</p> <ul style="list-style-type: none"> • Construct a new office or expand and upgrade existing office facilities <p>Refer to additional recommendation under Disaster prevention and management</p>	<p>ACTION RECOMMENDATION 7</p> <p><i>Funding agencies Bobieding</i></p>

Environmental Health

<p>GOAL: “To establish a community based capacity to improve Environmental Health issues ”</p> <p>ACTION: Bobieding to select a minimum of 2 residents to undertake accredited environmental Health training.</p> <p>TIME FRAME / FREQUENCY: As soon as possible (Discussions initiated)</p> <p>ACTION: Purchase appropriate equipment for mosquito fogging, and pest control and identify ways for safe storage of equipment</p> <p>TIME FRAME / FREQUENCY: in conjunction with EH training</p> <p><i>Advise on appropriate equipment and storage should be sought through TAFE and FESA</i></p>	<p>ACTION RECOMMENDATION 8</p> <p><i>Bobieding Funding agencies Health Department</i></p>
<p>GOAL: “To address dust issues and direct traffic, improve separation between activity areas and privacy and improve the living environment ”</p> <p>ACTION: Develop community based landscaping and greening programs, and layout</p> <p>TIME FRAME: 1 to 3 years</p>	<p>ACTION RECOMMENDATION 9</p> <p><i>Bobieding Funding agencies Health Department project plan</i></p>

Fire prevention and management

Recommendations developed in close association with Simon Hart; FESA

GOAL: "To establish sound community based fire management capacity"

**ACTION
RECOMMENDATION**

10

ACTION:

FIRE PREVENTION

Maintain fire breaks regularly; continue existing maintenance (slashing grass etc.)

Smoke alarm detectors in all houses

FIRE CONTROL

Appropriate fire control infrastructure to be installed as part of the water upgrade program,

Refer to section Fire management in the report

Appropriate fire equipment to be acquired by Bobieding as recommended by FESA (eg, slip on unit)

MAINTENANCE OF FIRE EQUIPMENT AND INFRASTRUCTURE

Develop mechanism and strategies for storage and regular maintenance of fire control infrastructure and equipment

TRAINING FOR SAFE & EFFICIENT FIRE OPERATION

The community to select 2 to 3 residents to undertake full training in fire prevention and control and basic fire course to be delivered to all.

OTHERS

Investigate the establishment of a Bush Fire Brigade

TIME FRAME: Step by step approach to ensure the overall fire management strategies will be efficient and cost effective.

Immediate action required on infrastructure and equipment in conjunction with the water upgrade project

Bobieding
Funding agencies
FESA

Disaster prevention and management

GOAL: "Improve existing infrastructure and operations in Bobieding to address appropriately disaster situation"

**ACTION
RECOMMENDATION**

11

ACTION: Consider the construction of a cyclone rated shelter to be coordinated with the construction of other facilities in Bobieding, (eg the office)

This could be achieved with the construction of a new office / administration centre or other facilities needed in Bobieding

ACTION: Develop appropriate disaster management strategies

TIME FRAME: To be initiated As soon as possible

Bobieding
FESA
Funding agencies
Health Department

Essential services

Bobieding faces a shortage of land within and surrounding the existing settlement due to the morphology of the area and nature of the soils. Most service sites in Bobieding, including the bores, water tanks and telecommunication tower, are located in the centre of the community. These facilities occupy prime land considered for future housing and community facilities as water and power are readily available to these lots (reducing the costs of future developments).

The plan strongly directs to re-siting these services to locations outside the community area. This approach aims to improve safety aspects and acknowledges the need to isolate and protect certain facilities. It would improve the amenities / built environment and daily community activities.

Details and strategies to achieve the relocation of the telecommunication tower particularly and free the land for appropriate developments are presented in the following section.

Water

Background

Existing water infrastructure in Bobieding is maintained and inspected on a regular basis by the Kimberley Regional Service Providers. The water supply is connected to the bore situated on the North eastern periphery of the community. Two additional bores are available in Bobieding with the most recent established in 1995 at approximately 900 meters from the community settlement.

Bobieding is entering in a Water upgrade project undertaken through the state "Remote Area Essential Services Program" (RAESP) targeting the provision of new water tanks & water purification system and water reticulation (mains).

The Bobieding Executive Committee raised concerns about the poor quality of drinking water in Bobieding and advised that sound water pressure was a key community priority for the water upgrade project. To determine an appropriate location for the future water infrastructure and reticulation water aspects were thoroughly investigated through the town plan, considering the following:

- Optimisation of land use in Bobieding
- Current water contamination aspects
- Regulation for the establishment of appropriate buffers between chlorine storage areas and community facilities
- The location of existing water infrastructure particularly the bores and engineering design constraints

Investigations were carried in association with RAESP engineer and with the Shire of Broome Environmental Health officer

Water contamination

Bobieding water presents a high concentration of bacteria. Water sampling for the past year shows contamination, and the most recent sample specifically shows the presence of:

- Confirmed Coliforms > 100
- Thermotolerant coliform > 50
- E. Coli 35
- Thermophilic Amoeba Detected

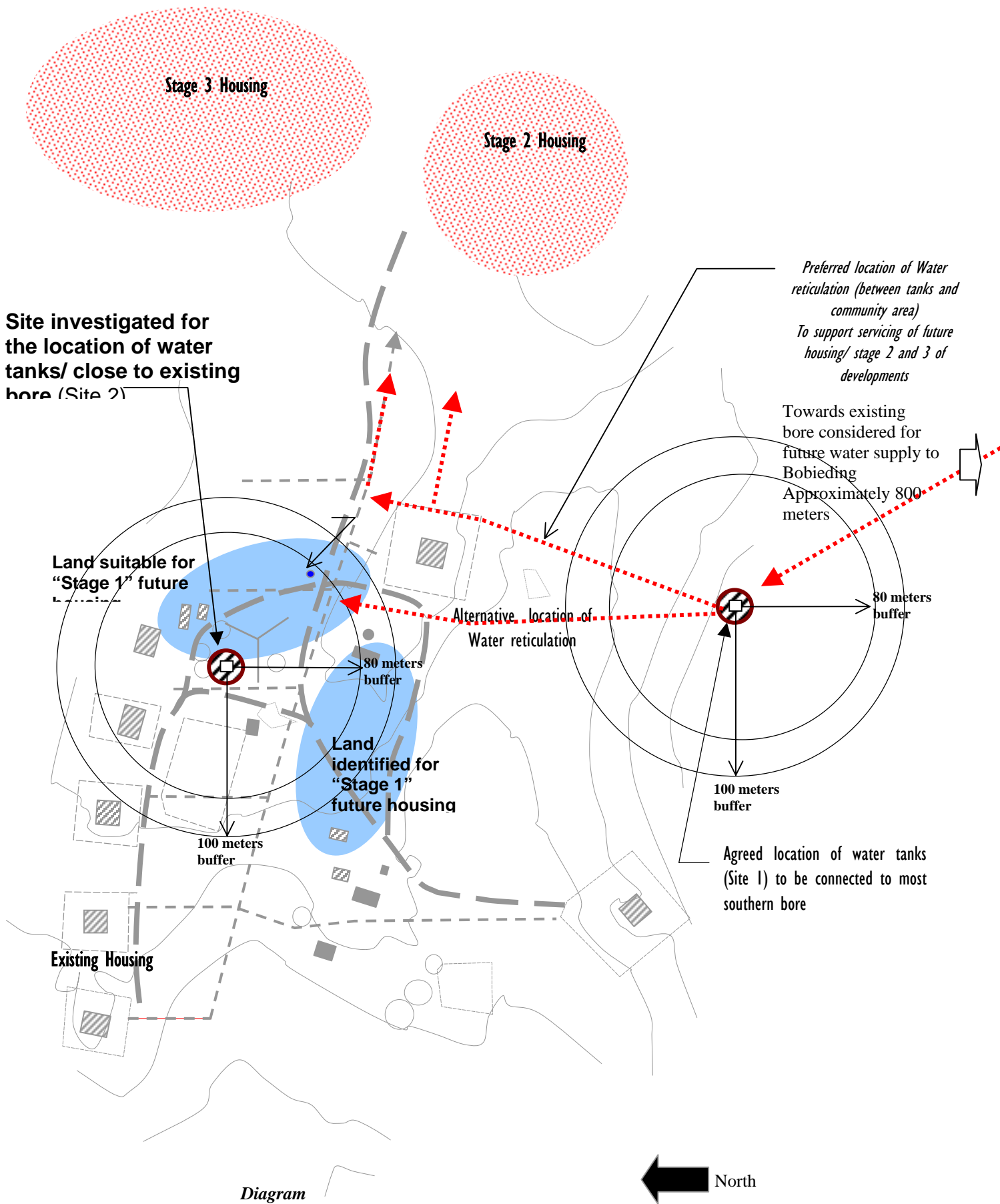


Diagram
 Site identified for the location of water tanks and
 reticulation / Planning constraints
 Scale: 1/ 4000 Approximately

KRSP field officer indicated that recent water samples were taken in the office. Earlier sampling taken between the bore and the tank revealed contamination, which leads to believe that the under-ground water source might be polluted. The steel structure on which sits the water tanks is structurally unsound and KRSP has been unable to inspect the tank and undertake regular chlorination.

Buffers

Engineers for the RAESP Water upgrade project indicated that water purification would be achieved through Gas chlorination.

Water Corporation policies/ guidelines regarding storage and handling of gas chlorine containers establish buffers ranging between 80 and 100 meters dependent on the amount stored on site (32 kilos or 68 kilos drums). These buffers can be reduced with the provision of supplementary alarm systems.

Emergency response is also a key consideration in estimating appropriate buffers. Qualified teams handle emergency operations linked to chlorine gas. The remoteness of the community and time for response in the situation of gas leak reinforce the need to establish a sufficient buffer between the storage site and community facilities and housing.

The buffer is also considered in the Australian Standards AS 2927 for the storage and handling of chlorine gas. The Water Corporation and the Department of Mines and Energy indicated that AS 2927 was being reviewed. The Water Corporation advised that applying current water Corporation guidelines would fulfil future Australian Standards requirements with the storage of Chlorine gas.

Sites selected for the erection of the new water tanks & reticulation (Mains)

In Bobieding land available for the staged construction of new housing and development of community facilities particularly serviced land located within the community is limited. Two possible sites were retained for the location of the water tanks considering the morphology of the land, particularly high ground conjointly with the location of existing bores. These are shown in the diagram left.

The location of the water tanks and chlorine storage in the centre of the community, shown as site 2 on the diagram is prohibitive as an appropriate buffer between existing housing and chlorine storage area can not be maintained. Besides this is a prime site for the construction of new housing identified as "Stage 1" development.

The issue of water contamination and the fact that Bobieding relies on septic systems also lead to the selection of the furthest bore, avoiding the possibility of water contamination from waste systems.

Bobieding agreed to locate the water tanks approximately 200 meters to the south of the community area keeping appropriate buffers between housing and chlorine system (shown as site 1 on the drawing).

During planning discussions the community and planner considered possible locations for the water reticulation between the tanks and the community living area. The preferred location was determined considering areas selected for future housing to the East (shown as stage 2- 3 on the diagram), to facilitate extension of the water mains to the future community housing.

Bobieding opted for keeping the existing water mains for greening and landscaping. Existing water mains are not shown on the Landinfo survey data base. Their approximate location has been identified on site by the community. (The data provided is indicative only and should not be used for site works).

Power

Most of the information regarding the Beagle Bay/ Bobieding power supply was provided by Paul Briggs from the Kimberley Regional Service Providers (KRSP). KRSP monitors power supply regularly including inspections of the Bobieding transformer.

Existing power supply

Power in Bobieding is supplied by the Beagle Bay diesel-fuel generator and transported to Bobieding by overhead High voltage power lines. The transformer is located at the entrance of Bobieding East of the orchard. The Beagle Bay power generator was upgraded in November 2000. Existing power generation consists of:

- 150 kw Caterpillar 3406B with Stamford Alternator
- 300 kw Caterpillar 3408 with Stamford Alternator
- 150 kw Caterpillar 3406 with Caterpillar alternator.



KRSP indicated that one generator is used as back up system and that space for an additional 400 kw engine had been allowed for in the power house design.

Beagle Bay has a resident population of approximately 250 people living in 53 dwellings. Housing stock is expected to increase to 60 within the next five years. The load is also expected to increase as air conditioning is being fitted to houses. A new light industrial area is also being planned in Beagle Bay

The Bobieding power transformer is located at the entrance of the community. The transformer has a capacity of 100 kva / 415 volts.

Issues, projections

The Bobieding Executive committee raised issues about occasional power failure / interruption during the wet season. Consistent power generation and supply to Bobieding is influenced by a range of factors including for instance damages to power lines by local fauna. (In December last year a number of power lines had to be replaced after being damaged by local birds).

In April this year following heavy rains on the Dampier Peninsula and damage to the main access road trucking of diesel fuel was interrupted temporarily. Beagle Bay indicated that the community had sufficient fuel in stock to operate the diesel generators for one day or so. The issue of diesel supply should be addressed when the Dampier peninsula road is upgraded.

The Bobieding 100 Kva (photo to the right) can generate power for approximately 20 to 30 houses. (This figure is based on an average household consumption of 3/ 5 kw). Bobieding housing increase is



estimated at approximately 1 dwelling per year. (Refer to the immediate needs / projection analysis presented in the housing section of the report). With a current housing stock of 10 dwellings the transformer should not cause concerns in the short term.

KRSP indicated that the existing high voltage power lines which service Bobieding would be appropriate for the next 5 years.

The proposed Bobieding aquaculture project is not expected to result in a large increase in power usage. TAFE indicated that the existing single-phase power is sufficient to run this project. (small compression type aerator and water pump).

Power usage associated with new projects in Bobieding will have to be monitored regularly to ensure reliable power is provided to the community.

While in the short to medium term the Bobieding transformer is sufficient for anticipated needs, KRISP indicated that the Beagle BaY power supply may not be sufficient to service the future growth of Beagle Bay and smaller communities who rely on the same power supply. Existing infrastructure in Beagle Bay including additional 400 kw power generator is expected to fulfil power usage for the next five years.

On a spatial perspective power lines in the living area are located in an orderly manner. The physical network they create has to some extent determined the location of new portions of roads in the community. As much as possible the roads were kept along the power lines to create standard street reserves and service alignment.

Metering

Bobieding receives bulk power bills as private meters are not installed. KRSP indicated that meters might be installed in the future to estimate the nature of Bobieding power consumption. Initially power meters would be fitted on community facilities including for instance the office, community workshop, etc.

Street lighting

Public street lighting is operational in Bobieding. When queried the Executive Committee did not raise any issues regarding this aspect.

Telecommunications

Reliable telecommunication is vital to remote centres including Bobieding. Telecommunication supply has been continuous and the community has expressed their satisfaction with the service.

In 1997 the State government developed policies and guidelines to regulate the installation of telecommunication facilities. These guidelines recommend consideration for the protection of the environment; continuity of supply, social and economic benefits the impact on the visual amenity and streetscape, public safety and coordination with other essential services.

Existing infrastructure

Beagle Bay is serviced with optical Fibre Underground system. Bobieding and other smaller out-stations on the Peninsula are connected to a Digital Radio Concentrated System. Repeaters are located every 40 kilometres running from Broome to the Northern part of the Peninsula. Signal emitted radiates approximately 40 kilometres and is picked up by local receptor at Bobieding. The 15 lines available service 128 people. The Telstra tower is approximately 30 m high. The infrastructure was installed in the early nineties.

Telstra indicated that the Dampier Peninsula system would be upgraded mid next year.

Issues

The main concern with respect to Telstra infrastructure particularly the tower relates to its³² location in the centre of the community and its impact future developments and land uses. Potential adverse health effects caused by exposure to towers were raised with Telstra however there do not seem to be substantiated scientific evidence to validate concerns.

Strategies

Discussions were undertaken with the community to assess people's view on the relocation of the telecommunication tower to a new site outside the living area. While residents did not consider it a key priority (in comparison to other aspects affecting community health), Bobieding agreed to the benefits derived from its relocation. It was agreed that the community and planner would advocate to this end however the community would not want to have to contribute financially.

Telstra was contacted to determine whether the organisation would accept to relocate the telecommunication tower. The potential relocation of the telecommunication tower is being approached in conjunction with the ACCAP and water upgrade projects, to implement cost effective service upgrade.

The provision of new water reticulation will require extensive trenching, which could be used for the location of Telstra cables (common trenching). It is proposed to create a common service reserve to house the Telstra tower and the future water infrastructure, facilitating future access, maintenance and management. Distances between the two type of facilities will need to be assessed and shall comply with relevant regulations.

This proposal was submitted to representatives from the Army (ACCAP program) and to Telstra.

Waste facilities

Existing, issues

Waste systems in Bobieding currently consist of septic systems. High water tables during a portion of the year and the clay nature of the soils in some areas raise concerns about the efficiency of septic systems. The community reported malfunction of the septs and leach drains on a number of occasions and the community regularly emphasised the need for improved waste treatment.

Strategies

The malfunction of waste treatment is a high Environmental Health problem. A number of options were considered for waste treatment improvements. These includes the connection of Bobieding to some form of sewerage or collective waste system, private sewer or connecting to Beagle Bay sewerage ponds, as well as the trial of alternative technology on the community..

Effluent treatment was an important factor in decisions regarding the location of the water facilities and the selection of an outside site for the bore.

Options

Connecting Bobieding to the Beagle Bay sewerage system is anticipated to be costly to build and maintain. Beagle Bay sewerage ponds are located some kilometres away. Before pursuing this option it is necessary to estimate whether Beagle Bay community sewerage ponds can accommodate additional effluent.

Discussions with a number of parties lead to believe that the community is unlikely to be sewered in the near future. In the event sewerage was provided to Bobieding the selection of a suitable site for the evaporation ponds should be determined with engineering input.

Documentations on a sub-flow waste system or “Waste water gardens” was provided to the community, and stakeholders including the local government, to assess people’s interest in pursuing an alternative option. Representatives from the Army were taken to visit an experimental project on the fringe of Derby.

The “Waste water garden” presents a number of advantages including cost effectiveness and potential for greening and landscaping. A study undertaken by Murdoch University WA, as part of the ACAAP project is considering methods to improve waste water treatment in Bobieding.

Should the option of wastewater garden be considered it will need to be jointly monitored by the Shire of Broome EHW, and Bobieding in association with the Health Department. Appropriate planning will be required to provide with the best options for landscaping and privacy in Bobieding.

Basic information on the “Waste water gardens” is presented in the attachments. It is also recommended to view the waste water study once finalised.

Physical planning

No site has been identified in the plan for the location of sewerage ponds as at this stage it is uncertain as to whether the infrastructure will be provided. The plan indicates a minimum width for the buffers and directions for the location of these ponds. The width of buffers are proposed above regulations and guidelines (500 meters) considering the long term directions for housing development (towards the East)

Waste water garden can be located strategically within the built environment to increase privacy and separate activities.

Rubbish disposal

Current practices for the collection & disposal of rubbish

Rubbish management including collection and disposal is the responsibility of the community. Rubbish is collected once a week and disposed of at the tip located approximately 500 meters away from the workshop to the West, South-West of the community. Rubbish is discarded/ thrown away in a trenching system, which is regularly covered.

Issues

Issues with rubbish management mostly consist of:

- Large equipment needed to carry out trenching and filing is not available in Bobieding (the work is done with a backhoe).
- Access to the rubbish tip is partly established on low lying land, which gets flooded during the wet season.
- The area needs to be fenced.

Recycling of cans and larger items were discussed with the community. FESA and the Health Department advised that rubbish tips should not be burned.

Planning approach

The community is considering setting up a new tip a few hundred meters to the South West of the existing tip.

The area currently used for the tip as well as the proposed new area is not used for other purposes and to keep flexibility for the location of the rubbish tip the plan / layout only shows a minimum buffer between the workshop and tip site (500 meters) and approximate direction.

To advance rubbish management aspects it is recommended that the community seek support from the ACCAP program. The program will bring large equipment to the community, which can be used to establish the new tip and open a better access.

Shire Environmental Health officer comments

Rubbish management aspects were referred to the Shire of Broome Environmental Health Officer for comments and input and to carry out an investigation on the suitability of this site and produce recommendations for its future location. It was advised that a distance of 500 meters with housing needed to be maintained. In addition the following is recommended:

- Trenching needs to be deeper and larger
- The site shall be fenced
- Improve site management

These recommendations were forwarded to the Army for inclusion in the AACAP project

Roads and drainage

Internal roads

Existing roads in Bobieding are poorly defined and not sealed. Fences around housing lots and some community facilities (eg, office, community purpose area) act as traffic barriers.

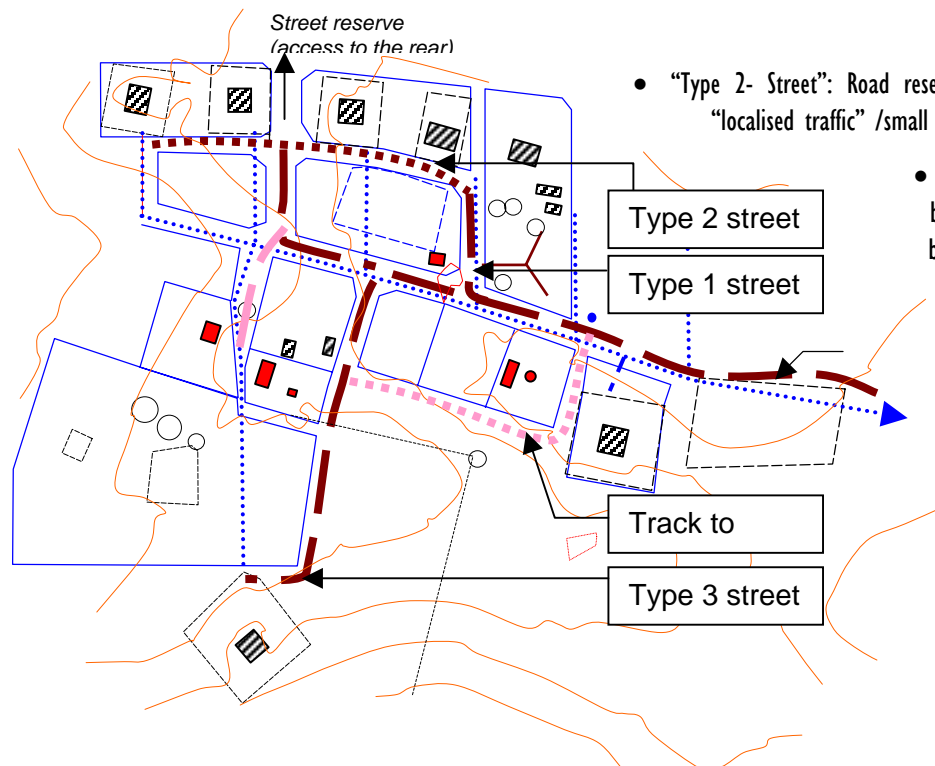
The community is concerned about health issues derived from dust during the dry season and is eager to improve landscaping to address this issue.

Roads in the existing community area.

The community aspirations for the main road to remain in its current location constitute the basis for the road network established in the Bobieding plan. The road was slightly realigned parallel to the power lines to harmonise services and road location and create a consistent road reserve.

Road hierarchy and traffic issues are presented in the road diagram below and can be summarised as follow:

- "Type 1- Street": Main internal road (includes the power line) and provides access to most of the public facilities as been set at 17 meters wide. This road will accommodate most of the visitor's traffic.



- "Type 2- Street": Road reserve 13 meters wide/ To provide access to "localised traffic" /small cluster of housing.

- The width of this road is influenced by the location of existing fences and boundaries. It is bordered by a park/ community facilities along the southern edge.

- The street is mostly used by community residents and may accommodate maximum 30 to 40 vehicle a day.

- "Type 3-street": 15 meters wide to access to the isolated house to the South, the women's centre and the aquaculture area. may accommodate occasional traffic from external agencies.

New portions of roads and service corridors have been kept in key location to enable expansion of housing areas to the North. (Area preserved free of construction)

New roads in new housing area.

New roads have been established for the future housing areas to the East. These are type 1 (17 meters) to cater for long term developments considering that the community housing might later expand to the East.

Street names and numbering

A layout showing streets name and numbering has been developed. This layout will assist the community with housing management and other community based projects

Layout "Street name and lot numbering" is attached in the section dealing with Layouts.

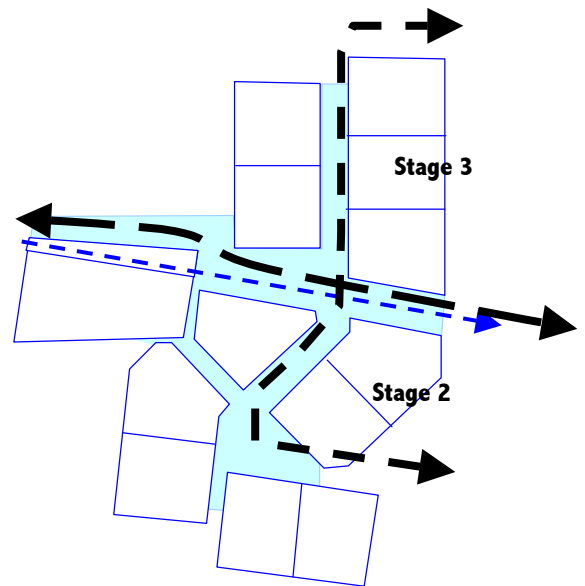


Diagram: New housing area

Access to Bobieding

The Dampier Peninsula road

Major upgrades have been planned for the Dampier Peninsula road that provides access to a large number of living centres. A synopsis of issues and strategies are presented below.

...."The route provides access to the sub-regional centre of Broome for servicing the needs of the many Aboriginal communities and settlements located north of Broome throughout the Dampier land Peninsula. The route also services pastoral properties and is attracting increasing tourist traffic. Traffic volume is highest closest to Broome where Willie Creek, Quandong Point, Manari and other places of interest along the coast are popular tourist destinations. Most of the larger communities such as Beagle Bay, Lombadina and One Arm Point are located at the north end of the road.

DEVELOPMENT NEED

Many sections of the existing road formation are depressed below the natural surface. The road is either impassable or closed to traffic for extended periods after heavy rainfall which isolates many people living in these communities. These sections of the road formation have to be either raised above the natural surface or relocated onto a more suitable alignment. The increasing volumes of traffic being generated by tourism growth and community development are causing the road surface to deteriorate more rapidly than it can be maintained. The average daily traffic exceeds 200 vehicles on the section between Broome Highway and the Willie Creek turn-off. The volume drops to 80 vehicles per day north of this point to Beagle Bay and Lombadina. It increases again between Lombadina and One Arm Point, where local traffic commutes regularly between these communities.

OUTCOMES & DEVELOPMENT STRATEGY

Road is to be upgraded to all-weather commencing in 2002, with 30km top end sealed, 40km gravel, then gravel over next 4 years back to Broome end.

Upgrading the road to a formed standard will provide travel time savings, reduced road maintenance and vehicle operating costs and reduce periods of road closure for road users. It will generate increased economic benefits through tourism and provide social benefits for community development..."

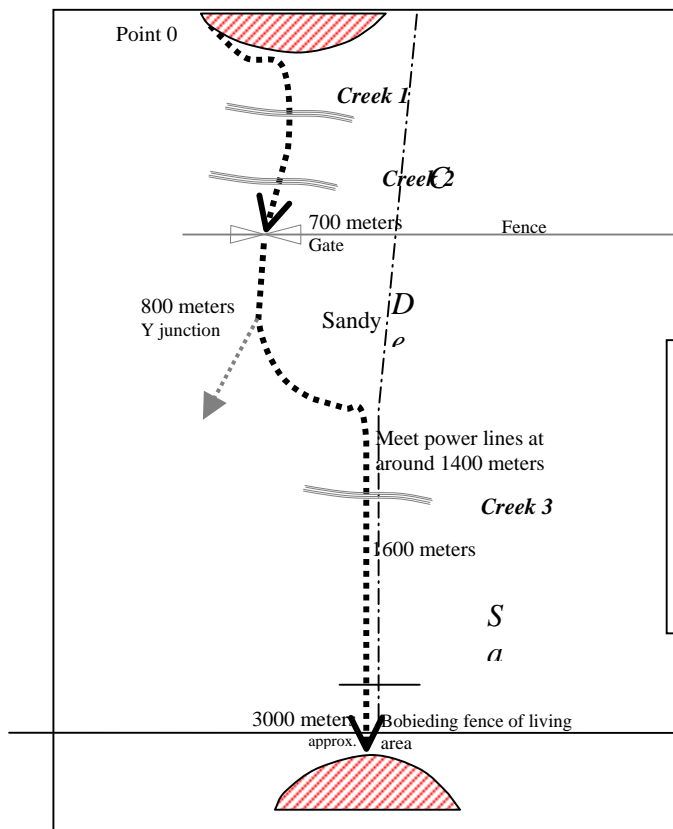
Information from Main roads report "Roads 2020 Regional Road Development Strategy 1997, updated with the assistance of the Shire of Broome

Section of road between Bobieding and Beagle Bay

The section of road that leads to Bobieding from Beagle Bay needs to be upgraded. Some sections of the road are near impassable during the wet season, with creeks, sandy sections and black soil patches. While the poor state of the road affects the community on a regular basis the poor state of the access road raises increased concerns in the situation of emergency. Refer to the diagram below.

Planning strategies

Overall strategies for the location of essential services



Diagram; access road Beagle Bay- Bobieding



Track at the entrance of Bobieding

Service corridors were established in strategic locations to confirm the location of power and water lines and facilitate service provision to new and existing housing. New

sections of roads are proposed along existing power lines to attempt to create road reserves incorporating essential services.

Recommendations

Waste treatment

Regular septic system malfunction causes major health concerns in Bobieding. This item is to be addressed urgently.

GOAL: “Improve waster treatment and associated environmental health issues”

ACTION

- Investigate and resource the construction of improved waste treatment systems in Bobieding
- Consider the alternative “Waste Water Gardens” as these provide opportunities for landscaping and considering existing infrastructure in Bobieding resource optimisation

The “Waste Water gardens” were introduced to Bobieding, to members of the Army, the Shire of Broome and NASH programs managers. Standard evaporation ponds and connection to Beagle Bay sewer may also be considered.

Time frame / frequency: As soon as possible

**ACTION
RECOMMENDATION**

12

Funding agencies
Service providers
Bobieding (advocacy)

Telecommunication

GOAL: “Improve the amenities in Bobieding and free land For housing ”

ACTIONS:

- Relocate Telstra communication tower to identified site outside the built environment
- Coordinate the relocation of the Telstra telecommunication tower with the provision of new water mains and infrastructure including sharing of trenching and timeframe

TIME FRAME: To be coordinated with Water upgrade – mid 2002

**ACTION
RECOMMENDATION**

13

Service provider
(Telstra) & Funding
agencies
Bobieding/ DIA/ Shire
(advocacy)

Power

GOAL: “Ensure a reliable power supply in Bobieding ”

ACTIONS:

- Investigate thoroughly future power needs & projected consumption in Bobieding & Beagle Bay and upgrade infrastructure accordingly to ensure regular and suitable power supply to Bobieding and Beagle Bay

TIME FRAME: 3 to 5 years

**ACTION
RECOMMENDATION**

14

Service providers(KRSP)
Funding agencies
Bobieding (advocacy)

15

**ACTION
RECOMMENDATION**

Army, Funding agencies
Bobieding (Advocacy)

GOAL: "Provide year round access to Bobieding, improve roads in the community "

ACTIONS:

- **INTERNAL ROADS**
Consider options and resources for roads improvements

Road design to address the needs for drainage, maintenance, location of essential services- landscaping, access to housing lots, etc. In the event of sealing of internal roads the "Kerb and drain" option is strongly recommended.
- **THE BOBIEDING – BEAGLE BAY ROAD**
Research, investigate an appropriate location for the Bobieding-Beagle Bay road and upgrade or construct new road aiming to year round access

TIME FRAME: Part of the works will be undertaken through the AACAP project – Mid 2002, remaining within 5 years

Bobieding Community Layout Plan No.1

Amendment No.1

Date: 1st February 2011

Reason for the Amendment

To show administrative changes to the plan.

Details of the Amendment

The intention is to modify the community layout plan endorsed by the WA Planning Commission on 24th February 2004.

Amendments made to CLP
1. Renumber; - Number Rural lot adjacent to Lot 10, Lot 11 - Number Recreation lot adjacent to Lot 32, Lot 33 - Number Public Utility lot south of the community, Lot 34

Approved / Noted:

Amendments are minor in nature. As such, endorsement not required.

Other Information:

This CLP does not constitute development approval.

It is the responsibility of the developer to ensure that all relevant consents, approvals, licences and clearances are in place prior to commencing physical works on site. Organisations responsible for such matters may include landowner, local government, incorporated community council, native title representative body, Department of Environment & Conservation, Aboriginal Cultural Materials Committee, Environmental Protection Authority, Department of Consumer & Employment Protection and Department of Water.

To update the mapping, please forward details of amendment to

Western Australian Planning Commission, 469 Wellington Street, PERTH WA 6000

Attn: Thomas Della Vedova,

or e-mail to thomas.dellavedova@planning.wa.gov.au

Bobieding Layout Plan No.1

Amendment No.2

Plan Date : 1 August 2003

WAPC : 24 February 2004

Proponent : Department of
Planning

**Endorsed
Requires
Endorsement** : WAPC only – minor amendment

Reason for the Amendment

The Department of Planning, on behalf of the Western Australian Planning Commission (WAPC), is the custodian for Layout Plans prepared under State Planning Policy 3.2, including the Bobieding Layout Plan No.1.


Since the publication of that Policy in August 2000 all Layout Plan map-sets have been prepared using a variety of computer-aided-design (CAD) formats. All Layout Plan map-sets have now been converted to a common user geographic information systems (GIS) format, including the Bobieding Layout Plan No.1.

This conversion process has required a comprehensive re-development of the map-set and includes a number of data and content upgrades. This may include the establishment of new Settlement Layout lots (SL-lots), the inclusion of recommended settlement zones, modification to ensure land-use areas accord with Aboriginal Settlements Guideline 1, inclusion of drinking water source protection areas, incorporation of updated cadastre, and many other general improvements.

Approved

This is a minor amendment as the myriad changes made to content and illustration are of a technical nature. As such, under provision 6.14 the endorsement of the WAPC only is required.

Western Australian Planning Commission


please sign and print name


Rosa Rigali



Date 30.5.2013

Signed by an officer duly authorised by
the Western Australian Planning
Commission pursuant to section 24 of
the *Planning and Development Act 2005*

Other Information:

This Layout Plan does not constitute development approval.

It is the responsibility of the developer to ensure that all relevant consents, approvals, licences and clearances are in place prior to commencing physical works on site. Organisations responsible for such matters may include landowner, local government, incorporated community council, native title representative body, Department of Environment & Conservation, Aboriginal Cultural Materials Committee, Environmental Protection Authority, Department of Consumer & Employment Protection and Department of Water.

Proponent : Department of Planning

Date : 12 December 2016

Reason for the Amendment

In June 2016 Cardno WA Pty Ltd completed the 'Coastal Vulnerability Assessments for Localities in the Shire of Broome' on behalf of the Department of Planning (DoP). This provided DOP with flood and coastal vulnerability mapping and information on flood behaviour to guide land use planning, emergency management and assessment of building and development in flood-prone areas for the Bobieding community.

The Report has identified information that requires changes to the Layout Plan to reflect various Annual Exceedance Probability (AEP) flood extents, and other mitigation measures. This also includes replacing an amount of 'open space' land use to 'waterway'. The general intent is to avoid future development anywhere that is at significant risk to flooding and identify areas which are more appropriate for community expansion into the future.

Land Identification		Amendment description
1.	All	Replace the 'open space' areas with 'waterway' on the LP as derived from the Final Report. Other Land Uses to remain as current.
2.	All	Amend Layout Plan Report to include additional detail to Section 'Development Constraints and Opportunities'. Note: *All construction and developer proponents to refer to the 'Coastal Vulnerability Assessments for Localities in the Shire of Broome – Bindunbur Final Report'

*A copy of the Report to be obtained from the Department of Planning prior to any endorsed Layout Plan construction/development.

Endorsement:

In accordance with Planning Bulletin 108/2013 this amendment is minor in nature. As such, the endorsement of the Western Australian Planning Commission is solely required.

Determined on behalf of the Western Australian Planning Commission in accordance with the *Instrument of Delegation – Delegation to officers of certain powers and functions of the Western Australian Planning Commission*.

Determination

date

12/12/2016

Other Information:

This Layout Plan does not constitute development approval.

It is the responsibility of the developer to ensure that all relevant consents, approvals, licences and clearances are in place prior to commencing physical works on site. Organisations responsible for such matters may include landowner, local government, incorporated community council, native title representative body, Department of Environmental Regulation, Aboriginal Cultural Materials Committee, Environmental Protection Authority and Department of Water.

Ashley Randell
Director, Regional Planning Policy
Regional Planning
PN: 15151

Bobieding Layout Plan No. 1

Amendment No. 4

Proponent	: Department of Planning, Lands and Heritage
Date	: 7 November 2018

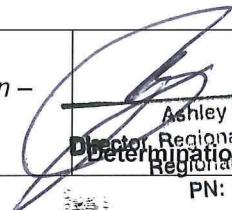
Reason for the Amendment

Minor administrative modifications to Bobieding Layout Plan 1 are required to ensure SL-lot boundaries reflect newly obtained aerial photography and infrastructure data.

Land Identification		Amendment description
1.	SL-lot 13	Reclassified to original "Community" land use to reflect the existing women's centre on this site. "Recreation" land use not accurate.
2.	SL-lot 33	Spatially upgraded to be more appropriately aligned with SL-lots 1, 2, 3, 31, 32 and Phillip Road.
3.	Sylvia Street, north of Phillip Road	Spatially upgraded to be consistently 20 metres wide.
4.	SL-lot 502	Spatially upgraded to match existing track as shown on the 2018 air photo.

Endorsement: In accordance with Planning Bulletin 108/2013 this amendment is minor in nature. As such, the endorsement of the Western Australian Planning Commission is solely required.

Determined on behalf of the Western Australian Planning Commission in accordance with the *Instrument of Delegation – Delegation to officers of certain powers and functions of the Western Australian Planning Commission*.

 7/11/2018
Ashley Randell
Director, Regional Planning Policy
Determination
Regional Planning
PN: 15151
date

Other Information:

This Layout Plan does not constitute development approval.

It is the responsibility of the developer to ensure that all relevant consents, approvals, licences and clearances are in place prior to commencing physical works on site. Organisations responsible for such matters may include landowner, local government, incorporated community council, native title representative body, Department of Environmental Regulation, Aboriginal Cultural Materials Committee, Environmental Protection Authority and Department of Water.