APPENDIX I

Landscape Character Assessment

CABOOLTURE WEST LANDSCAPE CHARACTER FRAMEWORK REPORT

October 2013

Moreton Bay Regional Council

This report has been prepared for:

Moreton Bay Regional Council

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Revision Number - 1
Date of Issue - 14/10/2013

Cover: Looking west from Bellmere Road towards the Caboolture River and D'Aguilar Range, overlaid with excerpt of the Landscape Character Framework Plan. Hodgson, 2013

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1. INTRODUCTION

The Caboolture West study area (Figure 1.) comprises approximately 6,413 Hectares to the west of the Caboolture and Morayfield centres. Its northern boundary runs along the D'Aguilar Highway to Wamauran and its southern boundary along Caboolture River Road. It is currently predominantly open rural grazing land, with some areas of fruit cropping and low density residential housing. This area has now been identified for potential expansion of the urban footprint.

This report explores the analysis undertaken on the existing landscape character of the study area and identifies the important landscape qualities within the site. A regional framework is then proposed to best retain and enhance these landscape qualities through the development process to ensure they become distinctive regional features within the changing landscape of Caboolture West.

Noting the regional framework, smaller community character areas can then be explored that integrate with the regional identity, but provide a basis to generate local diversity and difference creating more distinctive neighbourhoods within the whole site.

Through utilizing these landscape features the future development becomes linked to the site. This integrates an original and distinct character to the area as a Region, as local neighbourhoods and brings through an identity and 'sense of place' to future communities.

Figure 1. Caboolture West Study Area

2. BROAD LANDFORM

The Caboolture West topography is characterised by the Caboolutre River and Wararba Creek alluvial flats which rise and undulate up to the foothills of the D'Aguilar Range in the west (Figures 2,3 & 4).

By plotting the predominate ridgelines and tributaries that run through the site, a number of broad areas defined by the landform can be identified, which are shown in Figure 5. This plan shows that while connected offsite (to the east), the lower flat alluvial plains can be defined as two basins where Wararba Creek drains the north and the Caboolture River the south.

It also shows that a number of predominate ridges run down from the range separating the site into four broad valley areas and one diverse area of ridges and valleys in the centre of the site. Along the ridges there are a number of higher prominent points which act as overlooks to the landscape, with some separated hills at the interface of and within the basins also acting as overlooks to the flatter land.

As you would expect tributaries of the Caboolture River and Wararba Creek extend up through the valleys towards the ridges and provide green corridors and focus points within the lower sections of the site.

The general surface landscape character overlaying this landform is identified in Figure 6. This plan shows that much of the study area is cleared or open, with a number of areas used for cropping. These open areas are broken up by patches of vegetation usually found on difficult terrain associated with the river tributaries or steep slope.

Figure 2. Aerial View Looking Along The Caboolture River West to the D'Aguilar Range Image: MBRC 2013

Figure 3. Basin Plains Rising to the Foothills

Figure 4. Undulating Foothills Rising to the Range

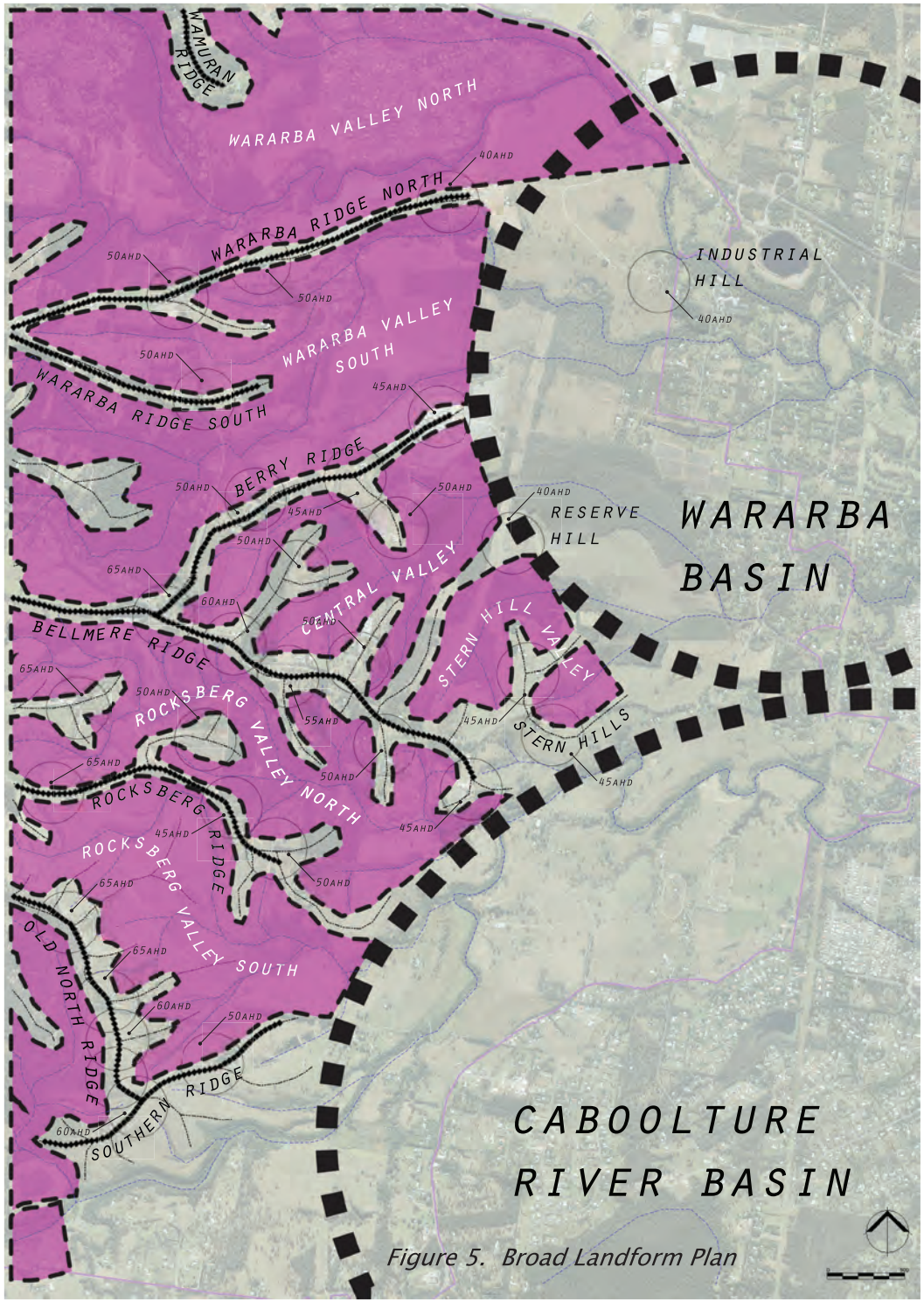


Figure 5. Broad Landform Plan

Figure 6. Surface Landscape Unit Plan

It also identifies that vegetation associated with the main Caboolture river corridor has been extensively removed.

Therefore generally the site would be considered an open rural landscape that is defined by the river (tributaries) and the range. It is the qualities of the River and the Range that makes the site distinctive from another. While the open rural character can span across different landforms and locations, this specific landform of river and range only occurs within this area.

So it is considered that importance should be given to identifying and portraying the qualities of the River and the Range throughout the future development to keep this area distinctive. Rather than focus on the rural character which is likely to be eroded through future urban development.

3. RIVER TO RANGE

Noting it is these two landscape elements that are the strongest character elements within the site, we cannot just look at the River and the Range as separate entities. Additionally we must look at the relationship between these two elements and reinforce this relationship also (Figure 7). It is the linking factor throughout the character framework.

It is the relationship between the River and the Range that creates the landscape and situates the site in locus. The River relies on the Range for its water and the Range is sculpted by the River and its tributaries. In other words the Range defines the River and the River refines the Range.

Figure 7. We cannot only look at the River and the Range as seperate entities. We must also look at the Relationship between them.

The study area is located within the meeting point of River and Range. It is an area where the tributaries intermingle with the lower hills, with both elements extending back to the dominant features of the River itself and the higher D'Aguilar Range to the west. It is the first hand shake of the River and the Range, both extending fingers of tributaries and ridges out to interact with each other to form a bond; A grip of interlocking fingers (Figure 8).

Within this area it is the first time the relationship between River and Range can be easily observed. The hills are more prominent and the waterways more defined. It is this area, where people can easily see water fall on the range then cascade down through the tributaries to the River, highlighting that the Range is connected to the River. This relationship is just as strong a character element to the site as the River qualities and the Range qualities in separation.

Therefore the River, the Range and the Relationship are the elements that should be protected and enhanced through the design process and explored within this report.

4. AIM

The character qualities of the River and the Range are integrated and enhanced within the urban fabric of Caboolture West. The relationship between the two is also emphasized and respected, enhancing it so people understand it and appreciate it as a defining element of the Place.

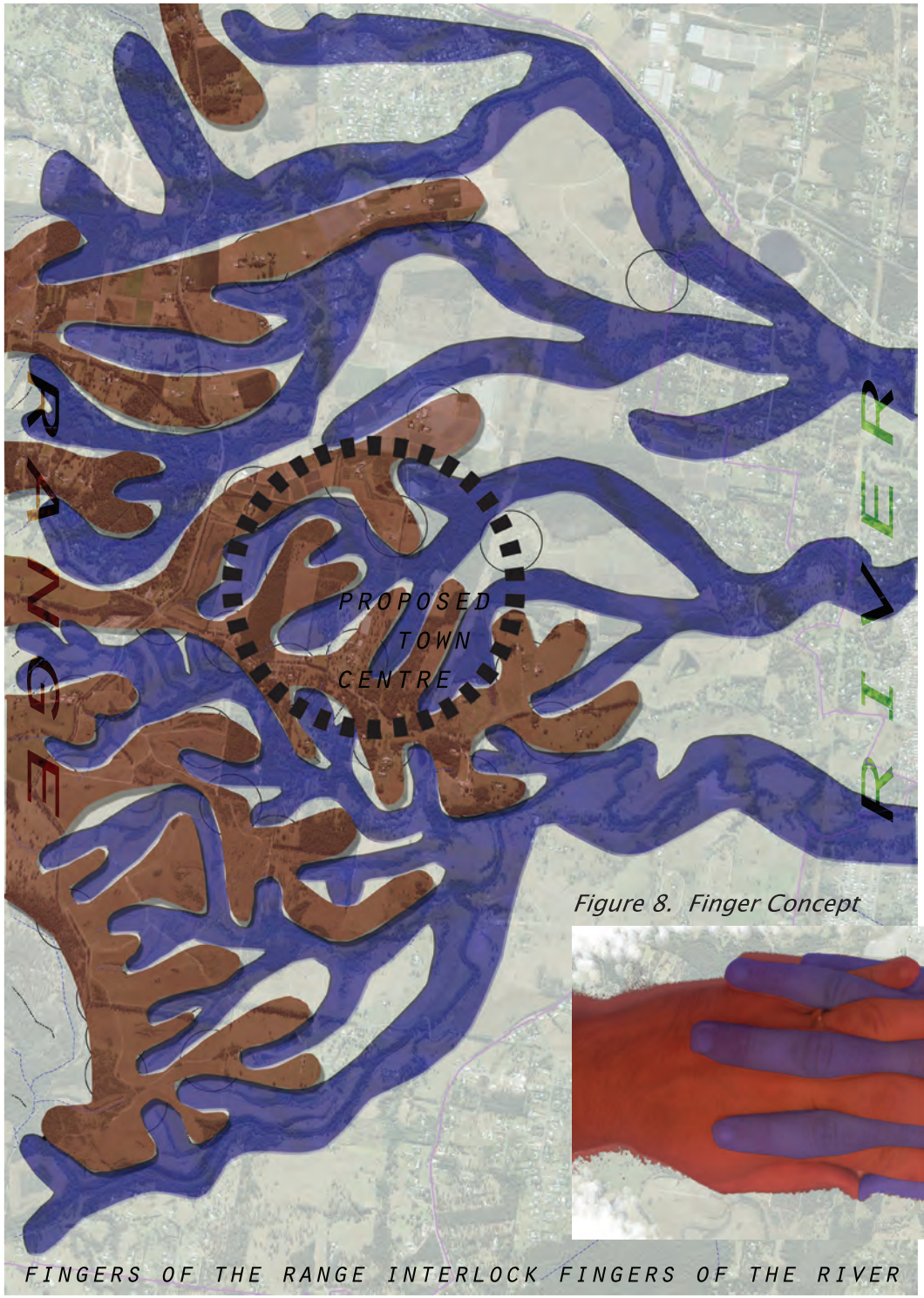


Figure 8. Finger Concept

5. Qualities of River

As stated above the River and its tributaries are essential character components to the site. The following section briefly describes these character components and proposes some basic provisions that aim to retain and incorporate these into the urban fabric.

Access

The water that runs through these conduits creates a diverse range of passive and active recreation opportunities, and provides sensory appealing green open spaces, through water views, sounds, smells, and cooler temperatures. Therefore access to the water within the river and tributaries should be made readily available to the community, to pursue these recreation opportunities and appreciate and take ownership of the health of the waterways that define this area.

Green Network

While it is noted the vegetation around the Caboolture River itself has been heavily cleared, the river and its tributaries provide a well-connected and biodiverse green network shown in Figure 10. This network links all of the areas within the site that have environmental value, and through protection, restoration and revegetation these corridors can become better habitats and highways for the fauna and flora found onsite. Environmental planning associated with the Caboolture West Study will better inform methods to achieve this and should be referred to.

Green Linear Recreation Space

In addition to the River and its tributaries creating a strong environmental network, they also provide an opportunity to create a strong and well-connected linear recreation network. By providing access along these corridors a connected linear park system can be created which will allow people to pursue more active recreational activities like walking, running or cycling within a visually appealing and comfortable green environment.

At the same time this network of open space gives people the opportunity to move throughout much of the Caboolture West Area within linear green spaces, that connect the major environmental areas, larger park facilities and provide legible and comfortable routes to neighbourhoods within and offsite. This provides an alternative choice to active travel along roadways or within vehicles.

Figure 9. Access is essential to enjoy the qualities of the waterways. The popularity of Zillmans Crossing is a testament to this. Image: Hodgson, 2013

Figure 11. Biodiversity of the Caboolture River. Image: Hodgson, 2013

Figure 12. Example of simple and robust recreational access along waterways. Image: Hanns Joosten & A24 Landshaftsarchitektur, 2013

Flux

The movement and changing nature of these waterways is also an important consideration. Drought, flood, erosion and deposition are likely to occur within these areas and therefore need to be considered. These processes should not be considered as negative or limiting and the positives of these changes should be explored and incorporated into any design as a character feature. It is the changing nature of our environments that makes them distinct and interesting and we should not fear change and instead incorporate it. Through detailed design recreation spaces can cope with flux in a safe and meaningful manner.

Figure 13. Example of simple and robust design to cope with flux. Platform is aligned with the flow direction and is hollow so flooding is not impeded Image: Martina Mambrin & Archiplanstudio, 2013

Figure 10. Linked Green Network

Proposed Provisions to Integrate the Qualities of River

1. Access to the River and waterways in appropriate locations for passive and active recreation is to be incorporated.

2. Through appropriate design the river and its tributaries are utilised as a connected network of useable linear green open space.

3. Environmental integrity and connectivity of the river and its tributaries are protected and enhanced through restoration and revegetation.

4. Any design will explore the positives of flux associated with the movement of water and incorporate these in a safe and meaningful way.

6. Qualities of Range

Like the River the qualities of the Range are essential character components to the site. The following section briefly describes these character components and proposes some basic provisions that aim to retain and incorporate these components into the urban fabric. It is considered that the most important elements of the Range are the Prominent Points, Views, the Centre Crown Concept, and the creation of hilltop villages and are explored in this section.

Prominent Points

As identified earlier a number of predominate ridges run down from the range through to the centre of the site (Figure 5). Along these ridges there are a number of higher prominent points which act as overlooks to the landscape, with some separated hills at the interface of and within the basins also acting as overlooks to the flatter land.

The prominent points within this site are identified as high points with an elevation greater than fifteen metres and a slope with a gradient of 10% or more than the surrounding topography. The topography that meets these requirements is shown in blue in Figure 14. It is considered that these are the minimum dimensions that generate a landform that is easily noticeable as prominent to the human eye (Figure 15).

Figure 15. Prominent slope and elevation. Diagrams show that the slope with the greatest prominence is where the gradient is greater than 10% and the elevation greater than 15m. The highlighted diagram displays the minimum figures, and is the most prominent where the others gradually rise.

When the prominent points are plotted it is identified that a cluster of high points encircle the central area and the proposed town centre of Caboolture West as shown in red on Figure 14. These points define the central area and provide visual landmarks or connections from the centre to the other outlying prominent points. This creates a strong character element defining the centre and integrating it visually with the other prominent points to the north and south. There is opportunity to incorporate visual landmarks on these prominent points that can be seen throughout the site and identify the central area to the outlying neighbourhoods.

However being prominent points these areas will be visible from much of the site and sit within view sheds from other high points within the site. Therefore any development that occurs on these high points will need to consider the view sheds in which they sit so that a negative visual impact is not displayed throughout the Caboolture West Area. Therefore high amenity building design and landscape design retaining significant trees and utilising signature trees is required to ensure a positive visual impact and a landmark is created on these points.

Figure 16. A view from a prominent point on the southern ridges looking northeast towards another prominent point.
Image: Hodgson, 2013

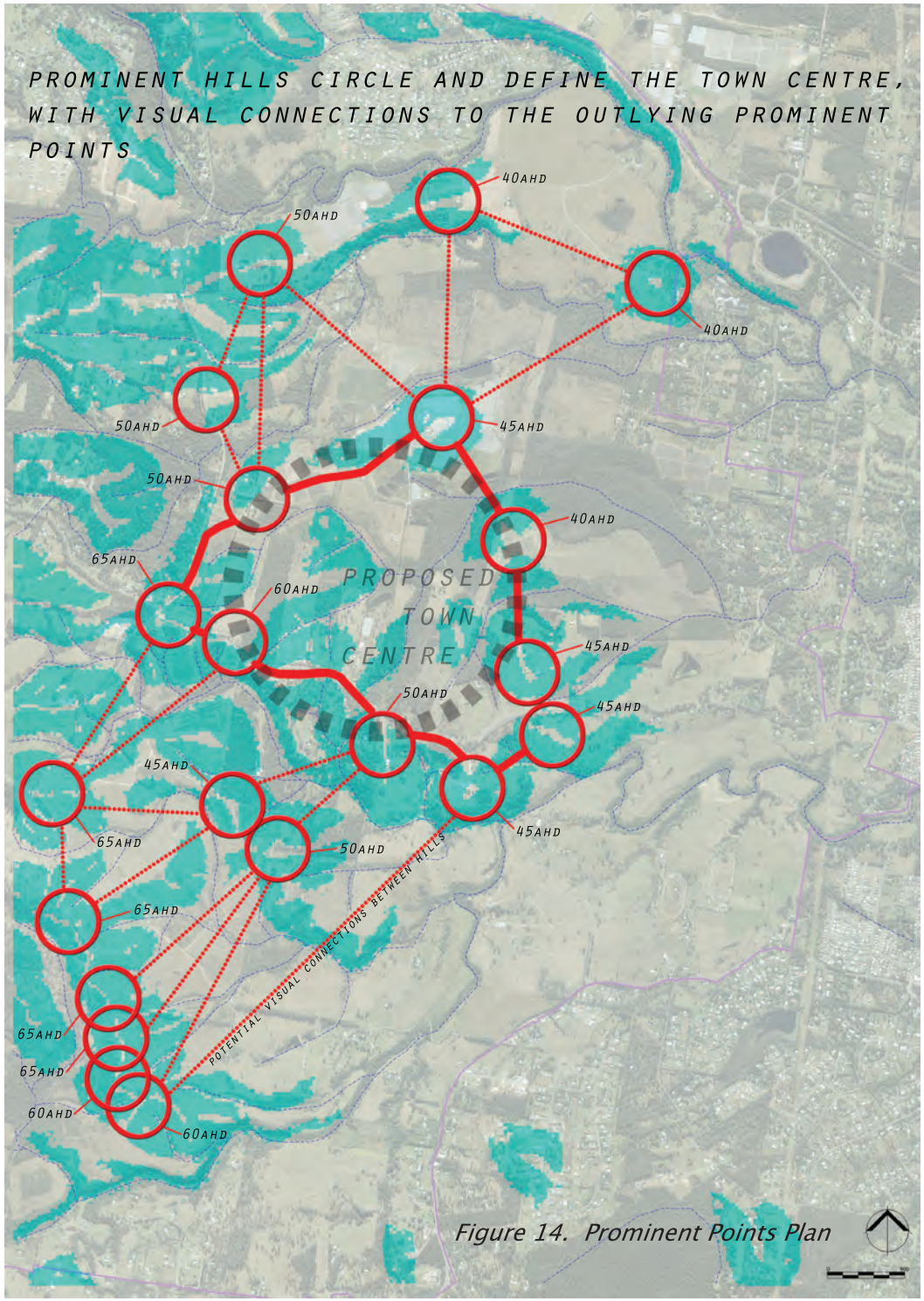


Figure 14. Prominent Points Plan

Proposed Provisions to Integrate the Qualities of Prominent Points

1. Opportunities to incorporate meaningful, locally significant and visually appealing landmarks on prominent points should be explored.

2. Urban, Landscape and Architectural design within these areas will be of a high visual amenity, frame views and not create a negative visual impact on other view sheds throughout the site.

3. Through Landscape design and site layout the development will retain existing significant tree species, and incorporate the planting of large signature tree species to soften the built form and create a green focus to the highpoints of Caboolture West

4. Average building heights should not exceed the mature heights of existing significant tree species or planted signature species, to protect and create a green skyline.

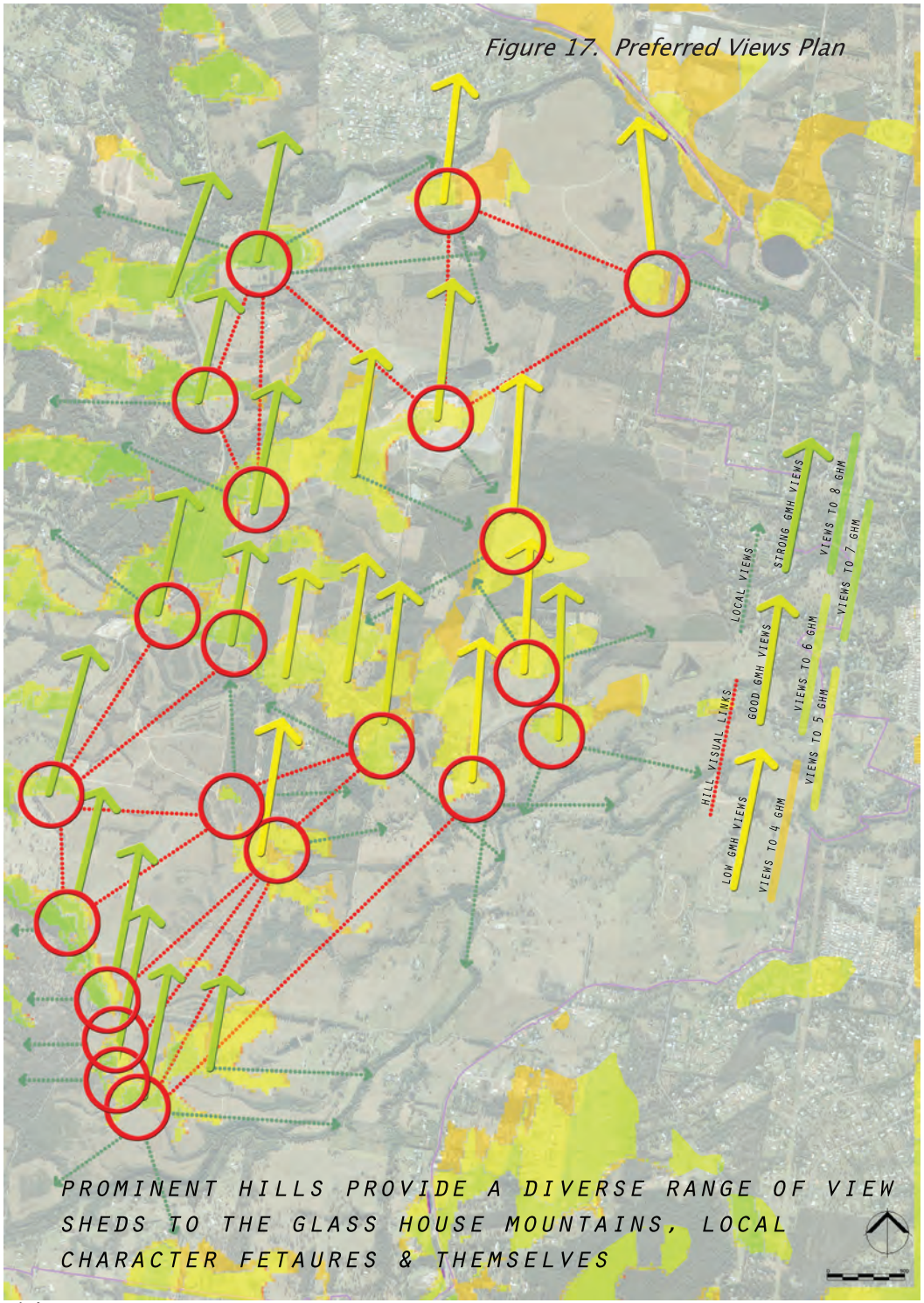


Figure 17. Preferred Views Plan

Views

In addition to the visual links between the prominent points, these points have access to a diverse range of views to the D'Aguilar Range, Glass House Mountains, and river and creek corridors. Views to these elements identify the area's location within the regional landscape, and reinforce the area's distinctive character. No other area in the world has access to these views and therefore they are essential in creating a distinctive place.

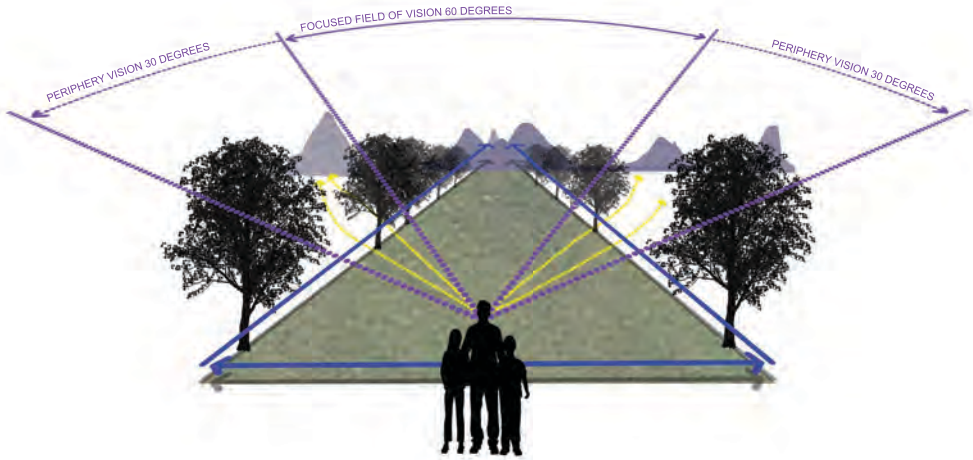


Figure 18. A well integrated view shed in regards to the Glass House Mountains should focus to a point but also allow for the opportunity of periphery views. A strong focus in regards to the Glass House Mountains is considered to be to at least four mountains in proximity.

The preferred view directions to the high quality local landscape features and the regionally significant Glasshouse mountains are shown in Figure 17. The preferred view alignment to the Glass House Mountains from the prominent points is based on the assumption that the most visually interesting views would be to a cluster of the Glass House Mountains within our focused field of view with surrounding mountains visible in our periphery

Our field of view is around 120 degrees and our view of the landscape extends out along this angle to the horizon shown in Figure 18. However only 60 degrees in front of us is focused with the remaining 60 degrees making up our periphery.

A cluster of mountains within our focused 60 degree field of vision makes a strong focal point and it is considered that a view to three or more mounts provides far more visual interest and diversity than to views of one or two mounts

Noting this all the prominent points have focused views to at least 4 of the Glasshouse Mountains. However, it should be noted that these views have differing quality as identified in Figure 17.

The strongest views to the Glasshouse Mountains exist on the higher elevated ridges to the west and south of the site, these have access to the clustering of 6-8 mounts. The central area of the site also has access to good Glass House Mountain views of a clustering between 5-7 mounts shown in Figures 19-21. Any development within these areas must take into account these view sheds and should be integrated and framed using landscape design and architectural design to drawn our eye into these views.

The remaining prominent points have potential views to 5-4 mounts, however as the elevation begins to drop the likelihood of these views being obscured is heightened and the significance of these views being incorporated into the development is slightly reduced. Noting this however these lower elevated views should still be considered and incorporated where possible.

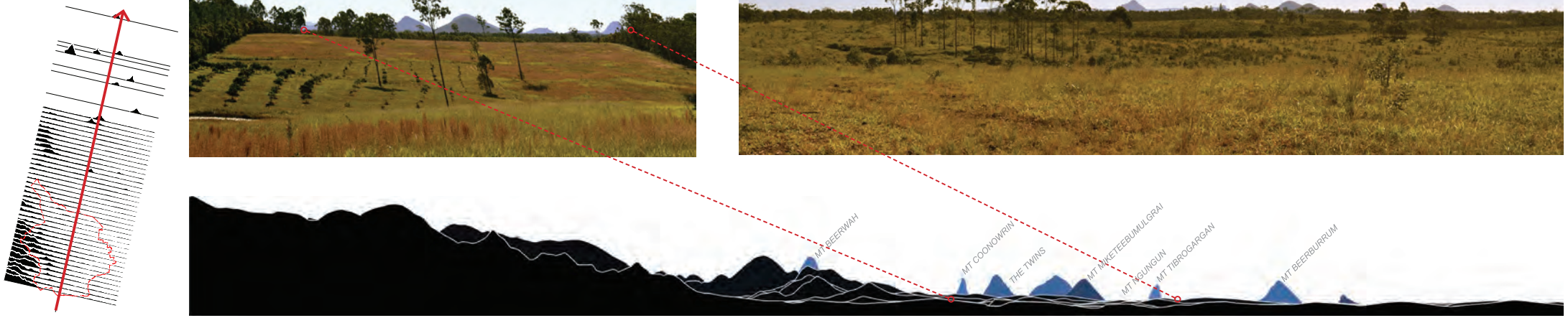


Figure 19. Perspective Representation of Topography and View Shed from Bellmere Road.

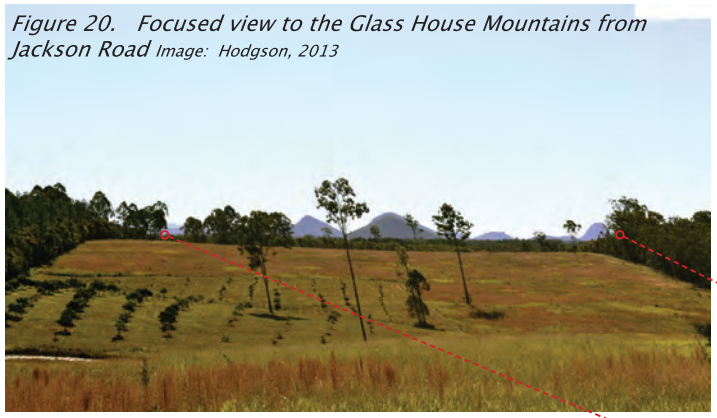


Figure 20. Focused view to the Glass House Mountains from Jackson Road Image: Hodgson, 2013

Figure 21. Potential View shed integration to clustered Glass House Mountains from Old North Road. Image: Hodgson, 2013

The local view sheds shown as green arrows in Figure 17, are based on directions to and through green elements within the site. Vision to patches of vegetation, green mountains and creek or river corridors not only integrate the local character elements visually into the site but also potentially help to alleviate the stresses of the urban community. Therefore incorporation of these view sheds into any development should be a requirement. These view sheds therefore are directed to green peaks within the D'Aguilar range that are of a slope and height where development is unlikely to occur and the green backdrop is maintained. Ideally no development should occur on the D'Aguilar Ranges, but changes within the distant future and demand for space may push building into the hills eroding the green character. Should this occur, at least views to peaks that cannot be developed will remain green. Figures (22-24). With associated photo. In the same vain views along the creek and river corridors and to patches of environmentally valued vegetation also increases the amount of green within the view shed. These views are also more likely to be accessible to lower elevated areas. The waterway corridors and areas of environmental value are also unlikely to develop and therefore the 'green views' can be maintained through the future.

Proposed Provisions to Integrate the Qualities of Significant Views

1. View shed alignments to the Glasshouse Mountains, D'Aguilar Range, and green spaces, are to be incorporated into the development. View shed alignments from other prominent points that may traverse the development must also be considered so a negative impact to these view sheds is not created.

Figure 23. Potential view shed integration of the range around character peak 1. Image: Hodgson, 2013

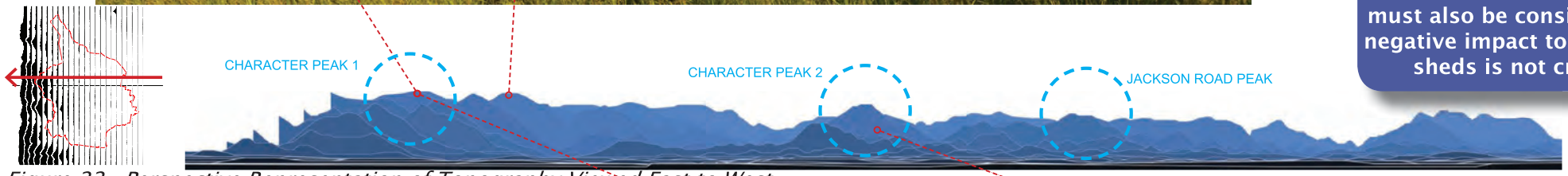


Figure 22. Perspective Representation of Topography Viewed East to West

Figure 24. Potential view shed integration of the range around character peaks 1 and 2 from Bellmere Road. Image: Hodgson, 2013

Figure 25. Focused view to the Glass House Mountains from Prominent Point Along Bellmere Road Image: Hodgson, 2013

View Protection Analysis

Obviously these views are important to the character of Caboolture West and need protection from erosion, from buildings and tree plantings within the prominent points, growing up and filling in the view corridor.

Therefore any development and landscape works occurring within these points need to consider the angle of width and height of the view corridor. This is so the development and mature growth does not significantly erode the quality of the views.

To do this the focused width of the view corridor is needed to be calculated so that when a person is standing on a prominent point they simply look out and can see the mountains unimpeded without turning their heads. The width of the corridor is within a triangle extending from the observer to the focus point at an angle where the full width of the focus point is visible.

When this is calculated appropriate plantings and setbacks for buildings can be proposed to ensure they are not built or grow heavily into the view corridor.

Similarly the height of the corridor is within a triangle extending from the observer looking to the focus point above the natural level of obscurity where the whole point is visible.

The vertical area to take in the height of the view should be protected so that streetscape design and buildings do not grow, overhang or are built at a height that will impede the vertical view corridor.

In such areas lower growing species or an alternative type of street treatment may be warranted to protect the vertical height of the view corridor,

this type of treatment may span from tens of metres to hundreds of metres depending on the slope, so the comfort of the street and character the street provides will need consideration. The streetscape design should ensure enough shelter and the theme is carried through the street. Therefore areas within prominent points that have access to significant view sheds should undertake analysis to quantify and design for the protection of the width and height of the significant view corridors.

An example of such analysis for integrating views into a potential centre street is shown in Figures 26 & 27. While this analysis has been carried out for a street this can be applied to any type of space.

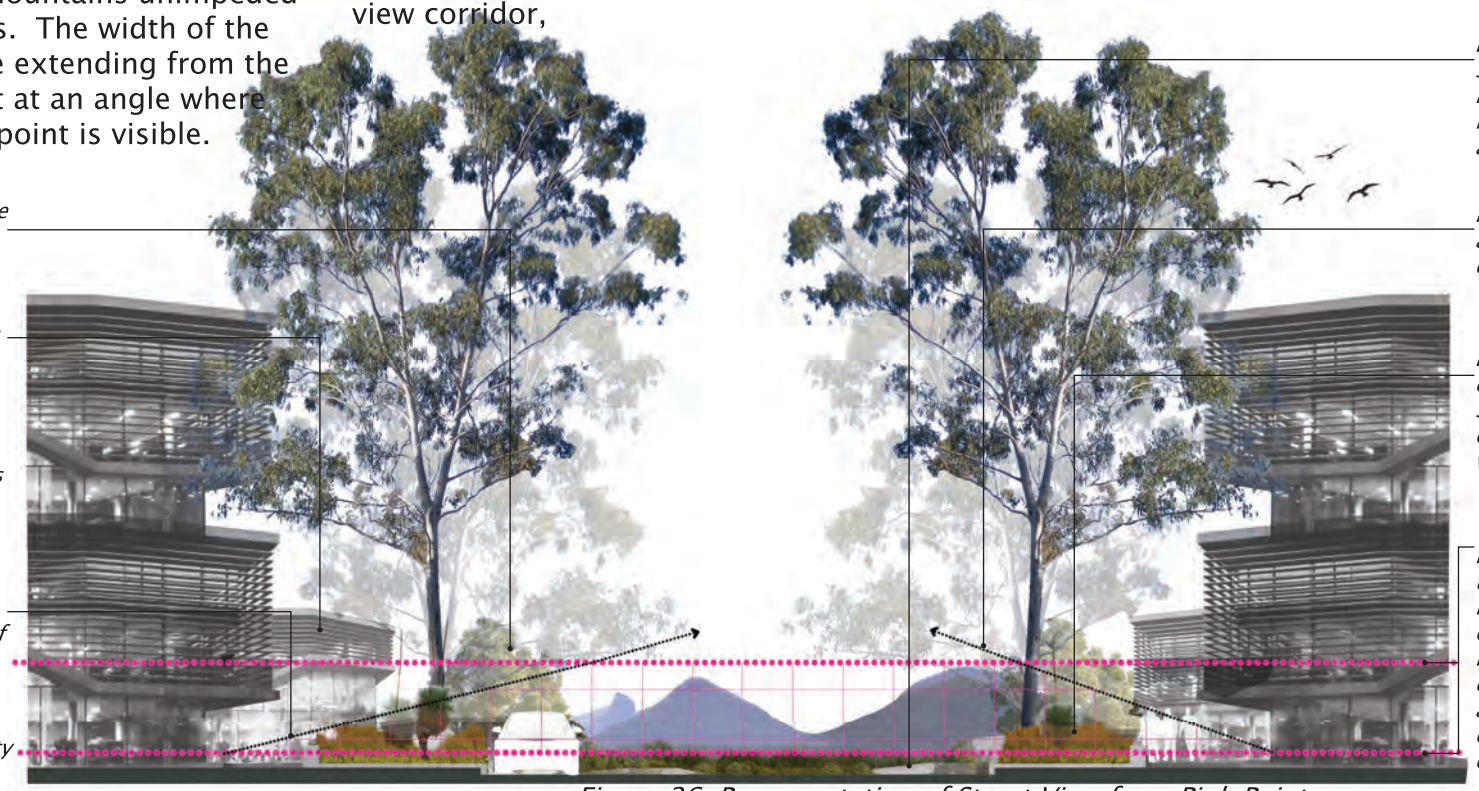


Figure 26. Representation of Street View from Pink Point

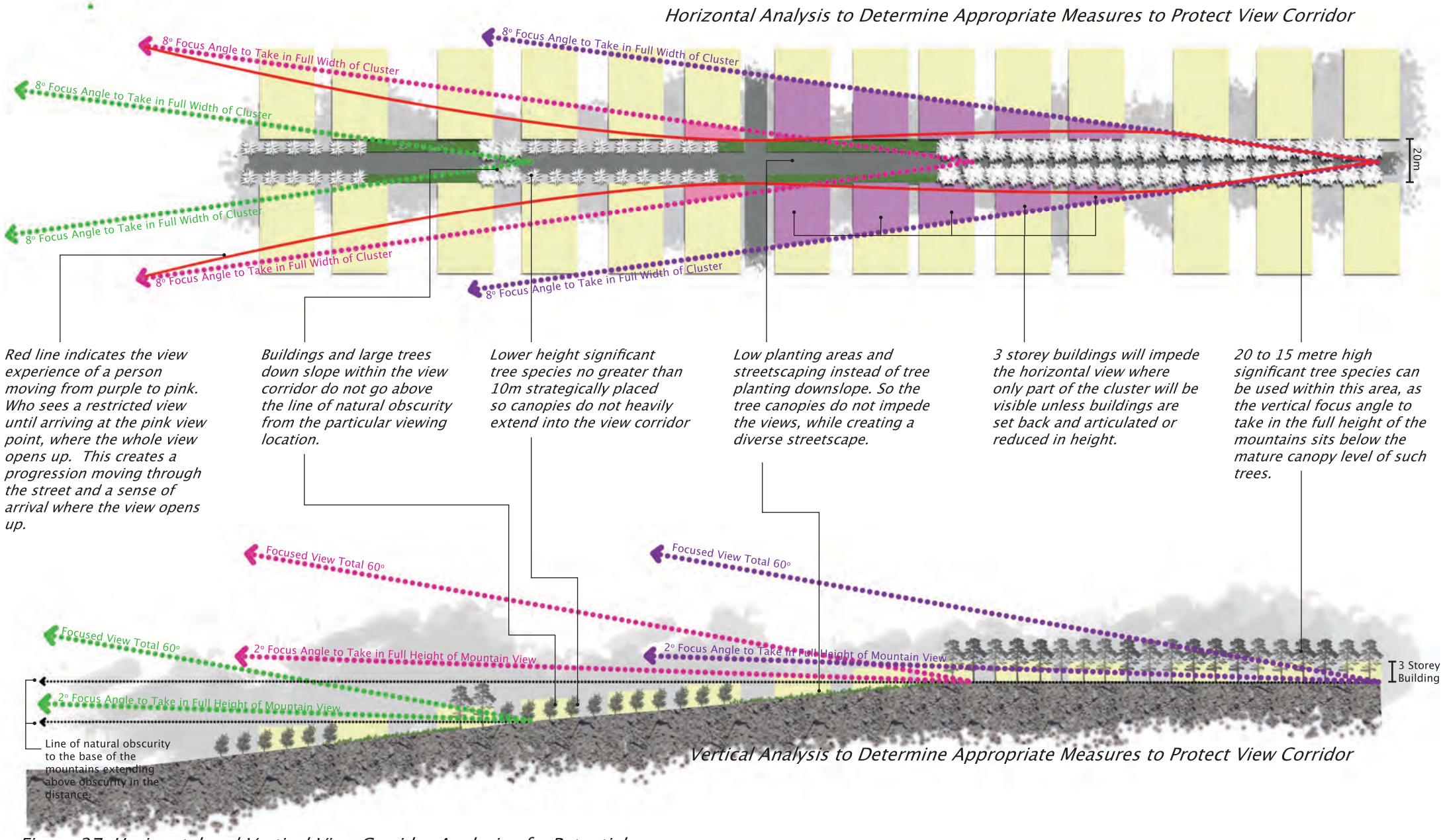


Figure 27. Horizontal and Vertical View Corridor Analysis of a Potential Centre Street from a Prominent Point.

Hilltop Villages and Parks

As identified earlier, the prominent points and ridges have the strongest views to the surrounding landscape features. However these areas only account for part of the site. The remainder of the lower lying site relies on views to the local green spaces, waterways and recreation areas.

While this adds more importance to the protection and incorporation of the waterways and green open space into the urban fabric; indirectly it is still possible to link 100% of the community with the stronger view sheds on the higher elevations. This is achieved by integrating the areas with access to the stronger views into the everyday life of residents.

If we locate our neighbourhood centres on these hilltops people who live in the lower elevated areas will travel to these hilltop villages on their daily commute to shops, schools, work and recreation and get daily access to the stronger character views (Figure 28). With appropriate urban, landscape and building design these areas can accommodate higher density development and integrate these character views. Creating a vibrant space as represented in Figure 29.

The use of hilltop parks within these centres through landscape design can focus viewsheds to the Glass House Mountains and the D'Aguilar range while creating an open space that protects these views from building development. They also provide the space for tree planting and retention to soften the surrounding built form of the centre and maintain a green skyline.

Further with vibrant design these areas are afforded the opportunity to create and portray signature character elements converting the prominent points into visual landmarks. They also provide an area for passive recreation for people to relax and enjoy the view and products of the centre creating vibrant spaces for cafés and restaurants to overlook.

Therefore it is essential for appropriately designed development of hilltop villages and parks to occur within the prominent point areas identified in Figure 14, to benefit and allow 100% of the community to enjoy these regionally significant view sheds.

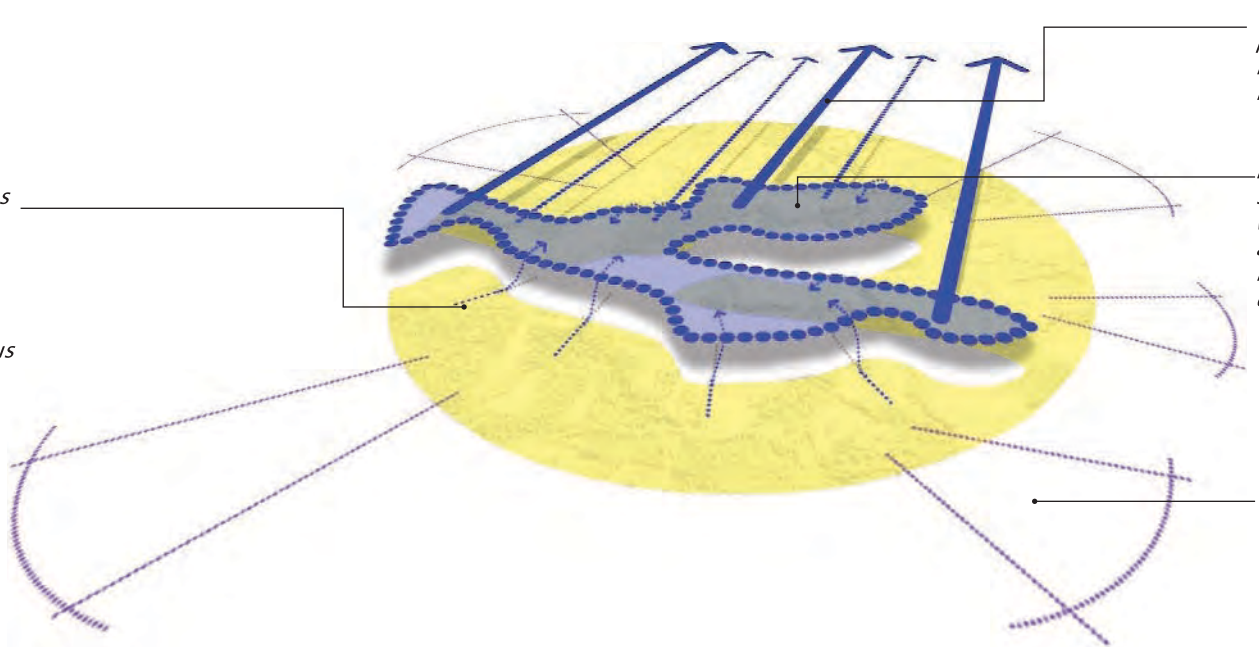


Figure 28. Concept diagram expressing the benefits of the hilltop villages and park

Proposed Provisions to Integrate the Qualities of Hilltop Parks

1. Hilltop Parks are located on prominent points to protect and frame view sheds.

2. Hilltops parks are located within hilltop village centres where the centre development overlooks and connects with the hilltop park.

3. Hilltop parks will provide a range of recreation facilities that acknowledge the view sheds and complement the centre dynamic.

4. Architecture around hilltop parks must not impact on the significant view sheds and instead frame and focus them.

5. Hilltop parks add to the creation of the prominent points becoming landmarks within the Caboolture West fabric through utilising signature species, and statement elements.

6. Statement elements should portray a local identity and meaning to the neighbourhood but integrate with the overall region's identity.

7. Through landscape design and site layout the Hilltop Village and Park will retain existing significant tree species, and incorporate the planting of large signature tree species to soften the built form and create a green signature to the highpoints of Caboolture West

Figure 29. Perspective representation of a hilltop village park, integrating views, signature tree species, statement elements and landmark features.

Centre Crown

As identified in Figure 5, The Broad Landform Plan, the proposed area of the centre is located within a clustering of ridges, valleys, prominent points and river tributaries. As identified in the views section of this report, it is afforded access to good potential Glass House Mountain views and D'Aguilar Range views and is directly adjacent to the large area of high value environmental vegetation.

Noting this, it was also an area of diversity in vegetation communities. Preclearing records (Figure 30) indicate that the centre area was a zone of intermingling ecosystem types. The drier elevated open forests met with the wetter lower open forests with the fingers of the river complex communities all combining and intermingling within this central area.

It is an area of great diversity visually and in site characteristics. It is within the meeting point of the River and Range and should also provide a great diversity of future uses, people and activities through the urban design. This area has a diversity and vibrancy in both site and people and this characteristic should be enhanced and celebrated through the centre design.

It was shown in Figure 14, The Prominent Points Plan, that the centre area is circled by a number of prominent points. This landform was highlighted as a potential character element that could define the centre and create a feature that encapsulates this diversity and portrays it outward as a landmark visible to the rest of the site. A crown which sits a top of the surrounding site and symbolises the diversity portrayed in the area.

Utilising the crown formed by these surrounding prominent hills, signature species of the adjoining intermingling vegetation communities of RE12.11.14, 18 & 12.5.3 are extended along the crown into one another, emphasising the vegetation diversity this area once exhibited this concept is shown in Figure 31.

The crown travels along the ridges within the major connecting road corridors, down to the valleys and extends around to the environmental area at the base of town centre. Again emphasising the diversity in the landform the area exhibits. It extends into the future urban fabric a contrasting green feature that pulls the environment up into urbanity and compels intermingling of the two.

It provides for the creation of a diverse range of linear spaces that integrate with and link to the surrounding urban fabric that complements the potential uses that are likely to occur within the central area. It also creates a legible and permeable way finding system that captures people heading towards the centre from all directions and directs them into the town centre as shown diagrammatically in Figure 32.

At the same time a network of shaded spaces for active and passive recreation is created by the crown, while providing a feature of high visual amenity integrated into the streetscape for overlooking businesses and houses to focus on, as portrayed in Figures 33 and 34.

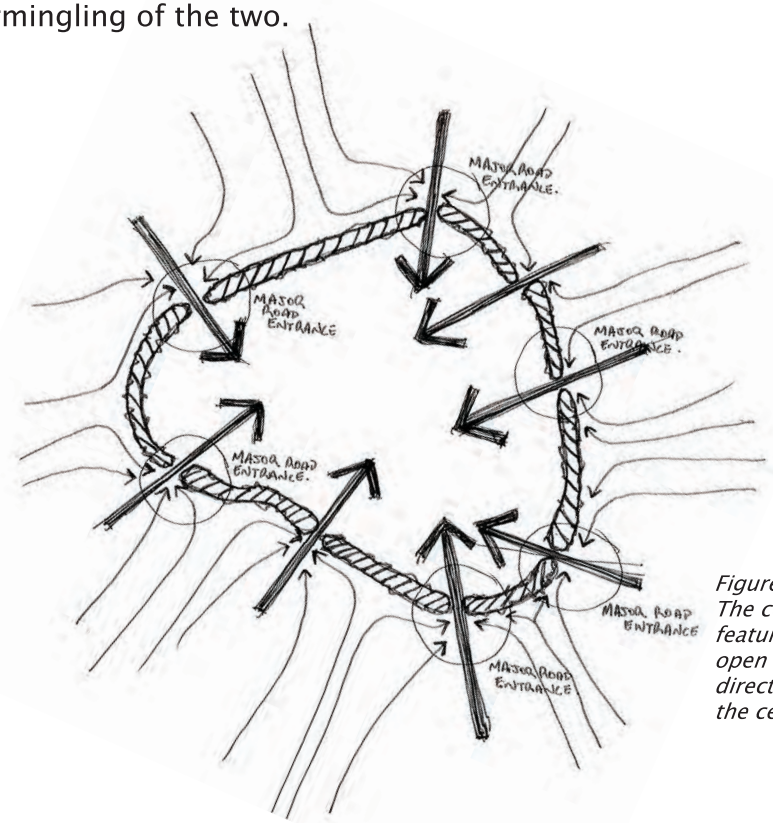


Figure 32. Centre Crown as a way finding element. The centre crown can act as a physical and visual feature that creates a legible system of permeable open space that directs people arriving from any direction along the crown to the major entrances to the centre.

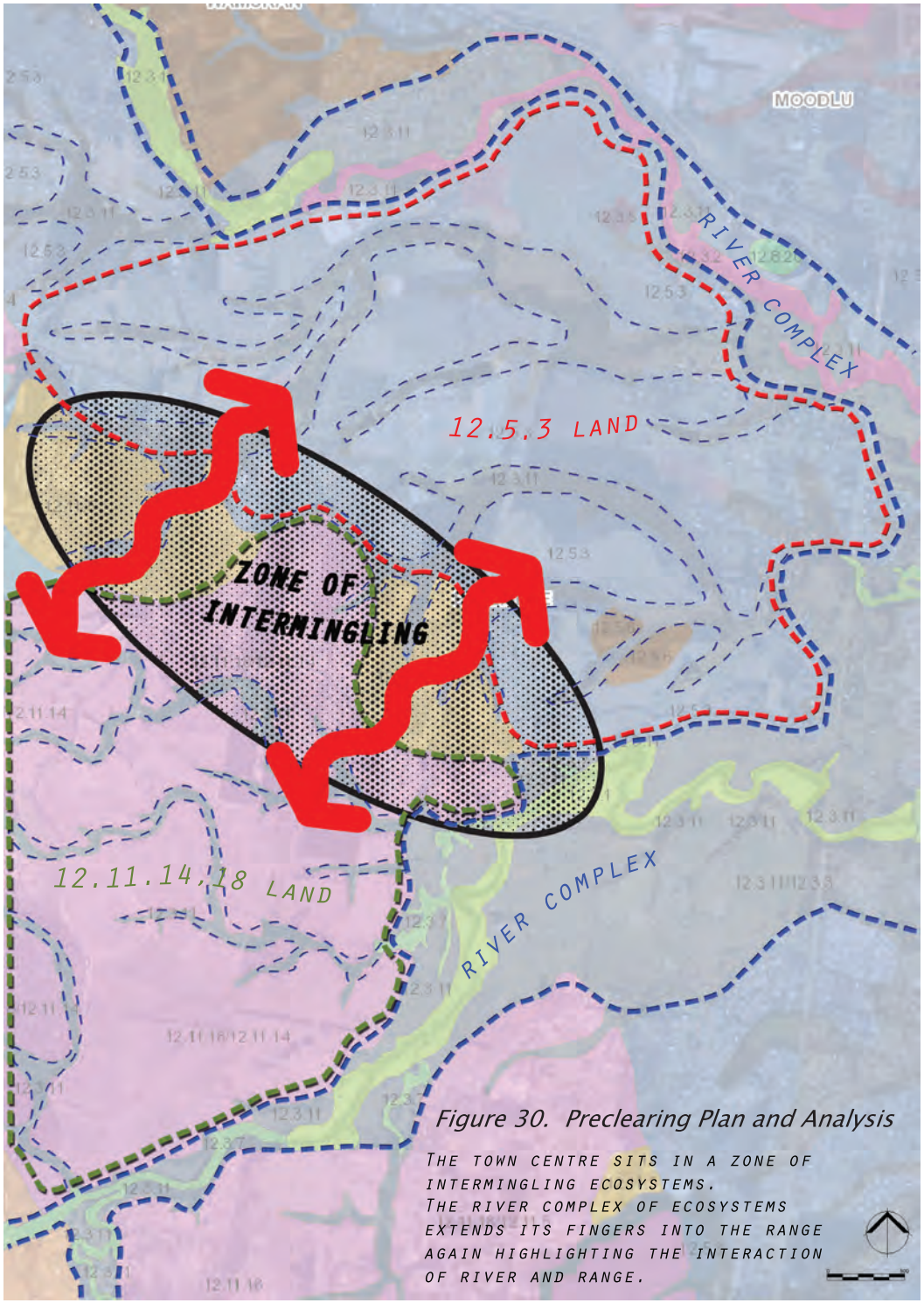


Figure 30. Preclearing Plan and Analysis

The town centre sits in a zone of intermingling ecosystems.
The river complex of ecosystems extends its fingers into the range again highlighting the interaction of river and range.

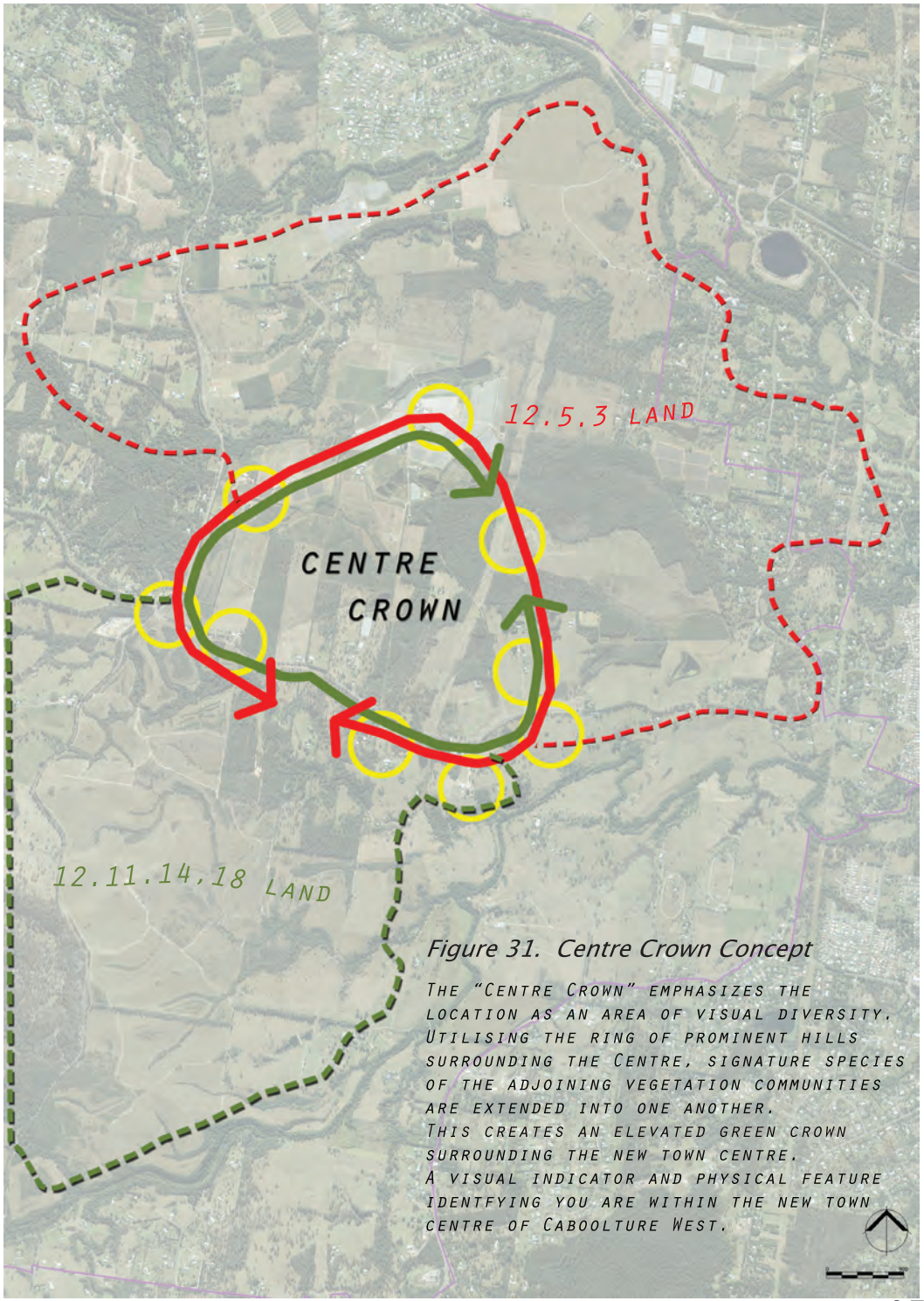


Figure 31. Centre Crown Concept

The "Centre Crown" emphasizes the location as an area of visual diversity.
Utilising the ring of prominent hills surrounding the Centre, signature species of the adjoining vegetation communities are extended into one another.
This creates an elevated green crown surrounding the new town centre.
A visual indicator and physical feature identfying you are within the new town centre of Caboolture West.

It also provides the opportunity for statement pieces or artworks that resonate with the new communities to be inserted into the crown. Pieces that connect with the crown and celebrate the diversity it emphasises, but at the same time represents the new people and communities emerging. Adding in a new layer to the diversity of the crown and reinforcing the diversity people bring to the area.

As noted earlier the prominent points should be the locations for hilltop villages and parks so they give the majority of people living in the area the opportunity to enjoy the views on a daily basis. The Crown generates an added importance to these hilltop villages in that many of them will fall within the alignment of the crown. With the other outlying points being visible from the crown and vice versa. Therefore these hilltop villages and parks must integrate with the Crown and express its celebration in diversity. These hilltop villages and parks should become 'Jewels in the Crown'.

Elements that make up the crown should be incorporated into the Hilltop Village and Park Design. The use of signature species, statement pieces and continuation of the Crowns landscape design, if within the alignment, all go towards incorporating these parks with the Crown.

However, the Crown is a celebration of diversity, and as on a real crown it is the jewels that provide a contrast and interest, even though they are part of the whole. Noting this, the Hilltop Villages and Parks should express a contrast and diversity that is specific to them, the site and the new community they service, while still fitting within the whole.

Figure 33. Possible Street Layout Integrating the Centre Crown

The dense planting of the Crown is shifted to one side to allow for larger significant tree species to grow without conflict.

More street compatible significant tree species maybe utilised in footpath verges, while still portraying the ideals of the Crown.

Statement pieces portraying a local and regional identity are incorporated into the Crown.

Centre Crown made up of a diverse intermingling of signature species from predominantly RE12.11.14,18 & RE12.5.3

Statement pieces portraying a local and regional identity are incorporated into the crown.

Centre Crown as a way finding element. The centre crown can act as a physical and visual feature that creates a legible system of permeable open space.

Figure 34. Centre Crown a Diverse Intermingling of Species and People

In Figure 29, the hilltop park representation, is an example where elements of the Crown are portrayed in the park, while new elements are designed and added that link with the local site and community.

This creates a system of parks that are visible from other prominent points that draw from the Crown and represent its meaning while inserting a distinct meaning of its own, specific to the location in which it sits. Essentially the parks fit within the whole but express contrast and diversity when viewed from within and across the Caboolture West landscape.

The crown celebrates the diversity of the centre it surrounds in landform, environment and people; and portrays this celebration out across the greater Caboolture West landscape. It also becomes a visual indicator and landmark feature that directs you to and identifies you are within the new town centre, a character feature that binds the Centre to its location and the people both physically and visually to the whole site.

The Crown is a very distinctive feature relative only to the Caboolture West site, and is therefore a principal character element in portraying this area as something original and well linked to the land in which it sits.

Proposed Provisions to Integrate the Centre Crown

1. Through Landscape Design, Urban Design and Architectural design the concept of the crown is portrayed in an obvious manner so that it is recognised and is incorporated into the street network and within the town centre.

2. Appropriate space is set aside in lot configuration and/or street configuration to ensure the crown follows the proposed alignment and links the prominent points and hilltop Parks surrounding the town centre.

3. Appropriate space is set aside in lot configuration and/or road configuration to ensure enough space and width is provided to accommodate; large signature tree planting, the retention of existing signature tree species, the creation of a landscaped area with visual impact, recreation facilities, pathways and statement pieces.

4. Species selection should predominantly occur from the Regional Ecosystems 12.11.14, 18, 12.5.3 and 12.11.5.

5. Statement elements should portray a local identity and meaning to the neighbourhood but integrate with the overall region's identity.

6. Statement elements must be connected to the signature elements of the crown.

7. Appropriate design extends the elements of the crown through the Town Centre and Centre Square

8. Appropriate design extends the crown into the environmental area so that the crown elements are noticeable and linked to the environmental values of the area.

7. Qualities of Relation

As identified earlier, the study area is at the meeting point of the River and the Range. Where the tributaries intermingle with the lower hills extending fingers of waterways and ridges out to interact with each other and form a bond; A grip of interlocking fingers (Shown in Figure 8).

However this report has currently treated these character elements as separate factors, missing the relationship between the River and the Range. If development was only to follow the proposed strategies above emphasising the qualities of the River and the Range it is considered that the two would become disconnected, one or the other, a river area or a range area. Where in the landscape the two are entwined. To miss this relationship we would miss an important character element that is integral to binding the design to the site.

Water is the linking factor in exposing this relationship and must be expressed throughout the study area to emphasise this relationship character element. If we look to the past, present and proposed major landscape units, that affected and will affect the study area, this relationship with water is highlighted.

The past landscape unit was predominantly a naturally vegetated area Within this landscape unit the rain would fall on the Range, the vegetation on the Range would slow the water allow better infiltration and reduce erosion. The water then would begin to flow down the Range through the tributaries and hydrate the surrounding plains.

These flows would occasionally grow and become strong currents that strips old vegetation and erodes banks starting a new phase of regeneration and adaptation to a changing waterway. This whole process grows an evolving landform and areas for a diverse range of vegetation communities to thrive. Therefore the water relationship for the natural Caboolture West is:

RAINS =>SLOWS=> FLOWS=>GROWS

Within the recent past and present landscape unit there is a rural focus for cropping and grazing. As in the natural landscape the rain would fall on the range and flow down to the river. However with more vegetation being cleared for rural purposes there is less opportunity for this water to be slowed and instead would flow at a quicker rate. While this would likely lead to more erosion, it creates more water for capture and provides the opportunity for the construction of dams to stop the flow and create a more stable water source.

Crops and pasture can then grow to feed the population and make the area more prosperous. However in doing so the landscape unit is less adaptable to change, where drought, erosion and flood may destroy the viability of areas, where natural ecosystems would renew and adapt. The rural landscape is manipulated to increase water in availability and growth therefore the Rural Cycle is as follows:

RAINS =>FLOWS=> STOPS=>GROWS

The proposed predominant landscape unit for the study area is urban. In the generic urban catchment the rain falls on more hard surfaces which leads to high flows and channelization that drains water away as quickly as possible as if it is an unwanted element. The urban landscape is manipulated to move water and do it more efficiently. The ability for these hard surfaces to adapt to change does not exist and instead results in damage and the requirement to rebuild to adapt to erosion, flood and drought. The water cycle becomes simplified and loses the growth element as shown below:

RAINS =>FLOWS =>GOES

Therefore we run the risk of losing the water link between the Range and the River. By shaping the urban landscape to drain and remove water as quickly as possible, people lose the link water has to the landscape, the growth and character it provided to the natural and rural landscape units the area held previously.

It becomes an issue of out of sight out of mind. People should see the water falling on and flowing down the hills so they know the land in which they site is connected to the River and not to a pipe that leads somewhere down there.

Urban development following standard ‘remove water quickly’ methodology acts as a wall separating the River and the Range shown as pink space in Figures 35.

Figure 8. Finger Concept (Repeat)

FINGERS OF THE RANGE INTERLOCK FINGERS OF THE RIVER

Figure 35. Fingers Concept & Urbanity

FINGERS OF THE RANGE LOSE GRIP WITH THE FINGERS OF THE RIVER THROUGH URBAN DEVELOPMENT

Instead of quickly draining water or trying to replicate the natural water cycle, where both are likely to conflict with either the goals of the environment or goals of grounded urban design. Caboolture West should understand and work with the processes of the natural water cycle; highlight the rural roots of its water cycle that further shaped the land; and integrate these into the urban environment.

This will maintain the water relationship between the River and the Range and create a softer and more resilient system of treating water which should reduce erosion and environmental damage, while being capable of adapting to flood, drought or other environmental change.

It will emphasise this as a strong character element within the urban fabric. This then would not only link River to Range but also link People and the Community to the River and the Range Therefore it is proposed the following water cycle should be integrated into the site development, this is also shown graphically in Figure 36.

RAINS =>SLOWS=> FLOWS=>GROWS

The elements of this water cycle and how to potentially implement these are discussed next.

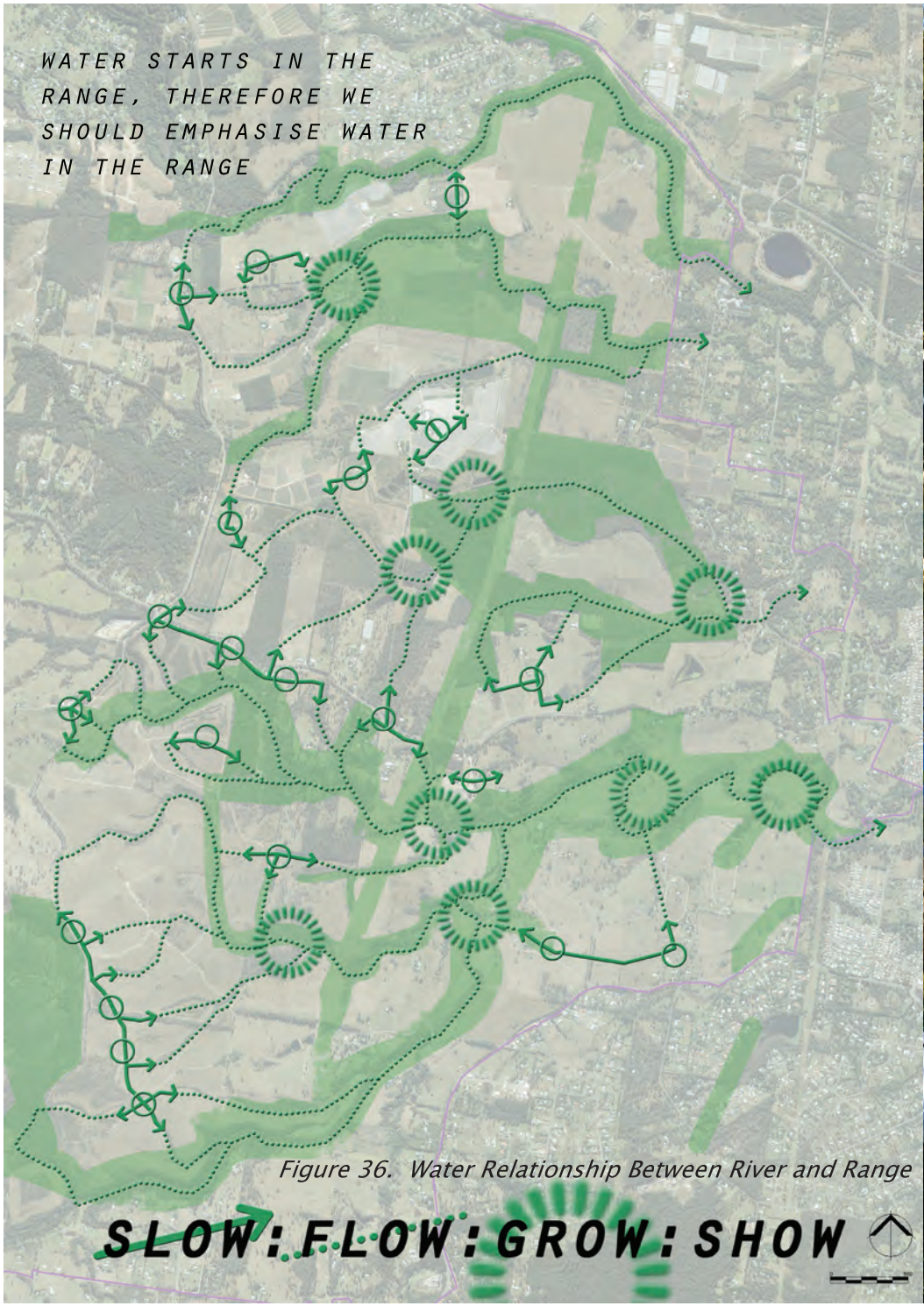


Figure 36. Water Relationship Between River and Range

Figure 37. Water Flow within the Caboolture River.

The rain should fall onto the landscape and be slowed in the neighbourhoods through a range of potential elements that retain water for a period of time reducing the flow and act as a feature. This becomes a reminder of the natural water cycle in slowing the water and a symbol showing that the River starts in the Range.

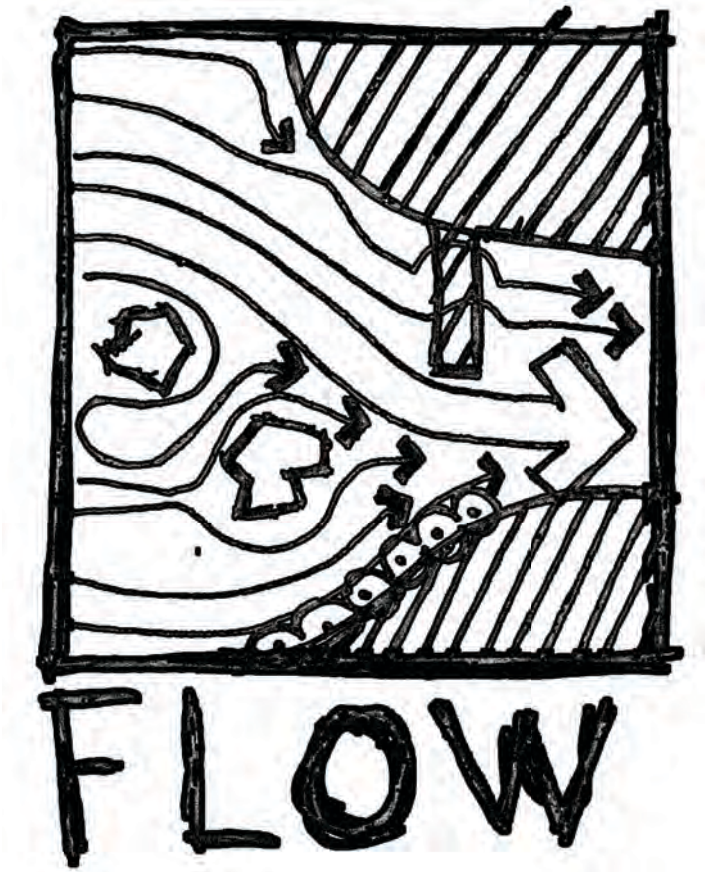
Such elements could include ephemeral water features like rain gardens, transient wetlands, and various forms of bioswales or bioretention areas that are integrated into the neighbourhood parks and streetscapes (Figures 38 -41). These are then placed in front of people to view and interact with strengthening the bond water has with the site and people.

Figure 38. Example of integrated ephemeral wetland into a centre park. Tanner Springs Park, Portland, Oregon Image: Atelier Dreiseitl, 2013

Figure 39. Example of integrated ephemeral bioretention area as a park feature. Victoria Park Public Domain, Sydney, Australia
Image: HASSELL, 2013

Figure 40. Example of creating a strong water feature out of bioretention area within a centre park. Edinburgh Gardens Raingarden, Melbourne, Australia Image: GHD Pty Ltd, 2012

Figure 41. Example of simple bioretention design creating park feature. Southport Broadwater Parklands, Gold Coast, Australia
Image: David Lloyd & AECOM, 2013



The movement and sound of flowing water is special and areas where water will flow should be enhanced to emphasis these characteristics when enough water falls on the landscape. Rocks, barriers, vegetation, pools, and cascades can be appropriately designed and used within the urban channels that connect the 'Slowed' water features to the tributaries (Figures 42-44).

These elements link the centres with the tributaries and allow water to flow in full sight and sound rather than through hidden pipes. This reinforces the water connection through the landscape. It also highlights the importance of allowing access to the natural sections of the tributaries and the river in exposing the natural qualities of the flowing water within these waterways (Figure 45). It should be noted however that any design must enhance the peacefulness of moving water but also embrace and accommodate the power of moving water safely into one character element.

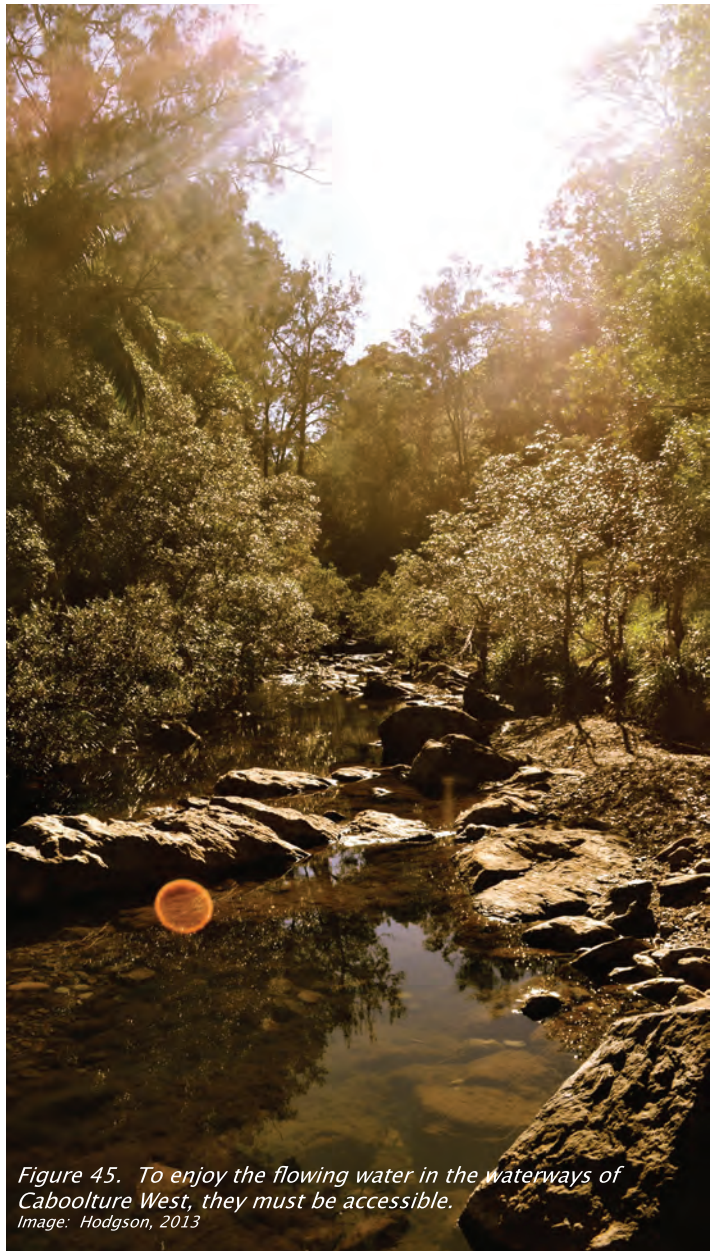
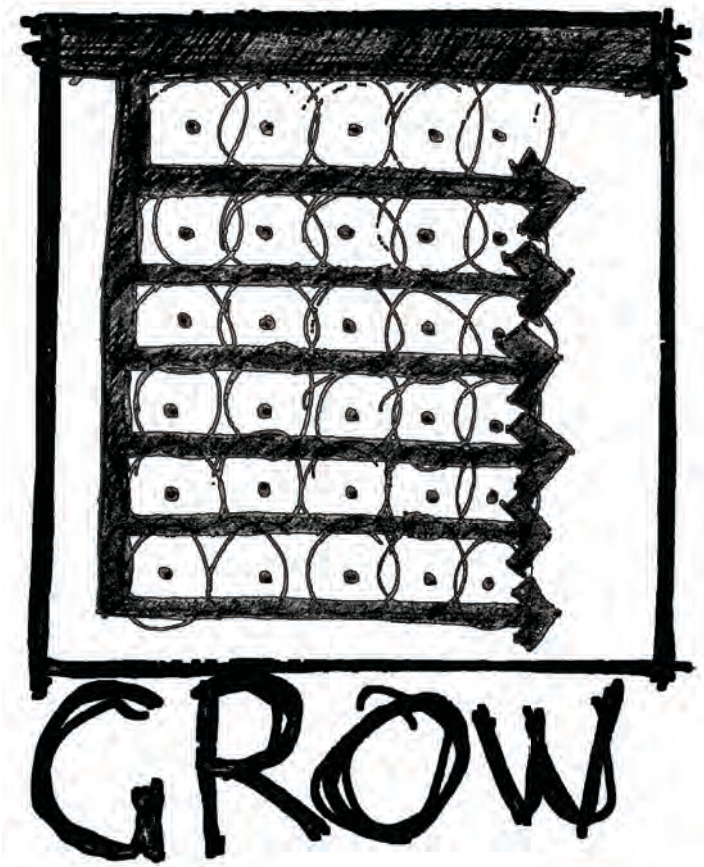


Figure 45. To enjoy the flowing water in the waterways of Caboolture West, they must be accessible.
Image: Hodgson, 2013

Figure 42. Example street section with vegetated rock bioswale, to break up low flows, create movement and sound, while providing an aesthetic softening to the streetscape.

Figure 43. Example street section with rock swale, to break up low flows, create movement and sound, while also highlighting the dryness of the area out of the wet season.

Figure 44. Example street section with a contemporary concrete pilar arrangement to break up low flows, create movement and sound.



To take advantage of spaces with access to a more constant water supply and to reinforce the rural history of the area, appropriate design should utilise some of the water for use to grow crops in the parks or on the streets within the areas identified in Figure 36.

Such elements to emphasise this could be the integration of community gardens (Figure 47), or space for growers markets (Figure 48), and do not have to be labour intensive. These elements could simply be the use of some food crop species as feature areas in the park design (Figure 46). These spaces provide a different character element to the area and potentially provide space for larger crops in the future, if food security is required.

By designing with these elements and using water we reinforce the links between the Range and the River and introduce the new link to the people and the community. It connects these things to the site and the past use and integrates the qualities of the River and the Range into the combined regional character.

Figure 46. Example of the integration of a food crop into a park. Shanghai Houtan Park, China Image: Turenscape, 2011

Figure 47. Example of community gardens integrated in a centre park. New York Riverpark Urban Farm, New York, USA.
Image: Design Build Source, 2011

Figure 48. Space for growers markets to emphasise the rural history of the area, and promote the local growers in Wamuran and surrounds. Image: Andrew Couch, 2010

Proposed Provisions to Integrate the Water Relationship of The River and The Range

1. Slow – water features or elements like rain gardens, ephemeral wetlands, bioswales and bio retention areas that slow and retain water and create a character element are to be integrated into park design and streetscape design.

2. Slow – the designed water features or elements will promote human interaction and provide a high visual impact in both wet and dry periods.

3. Flow – Swales or drainage channels are designed to emphasis the movement and sound of water. The use of rocks, barriers, vegetation, pools, and cascades are some elements that may achieve this with appropriate design.

4. Flow – appropriate access to the river and its tributaries is provided to allow people to interact with the natural moving water of these waterways in a safe manner.

5. Flow – the swales or drainage channels will provide a high visual impact in both wet and dry periods.

6. Grow – appropriate design of park spaces and/or streetscapes should integrate food growing elements reinforcing the rural history of the area.

7. ALL – the water features or elements will accommodate and discharge high rainfall events safely, with no impact to the surrounding urban environment or natural environment.

8. ALL – appropriate design of the water features or element incorporates suitable methods for maintenance.

8. Community Character Areas

The information within the report until now identifies the elements that will generate a distinct and original regional character for Caboolture West. Noting this information and utilising the predominate ridges, valley areas, and taking into account some of the areas proposed within the Caboolture West Urban layout, fifteen broad smaller character areas can identified as shown in Figure 49.

The purpose of this information is to generate a basis for diversity within the regional framework and provide some elements that can be utilised to the create distinct smaller character areas within the whole site. The local landscape features that are considered necessary for integration within these areas are described in the following pages:

Figure 49. Community Character Areas Plan

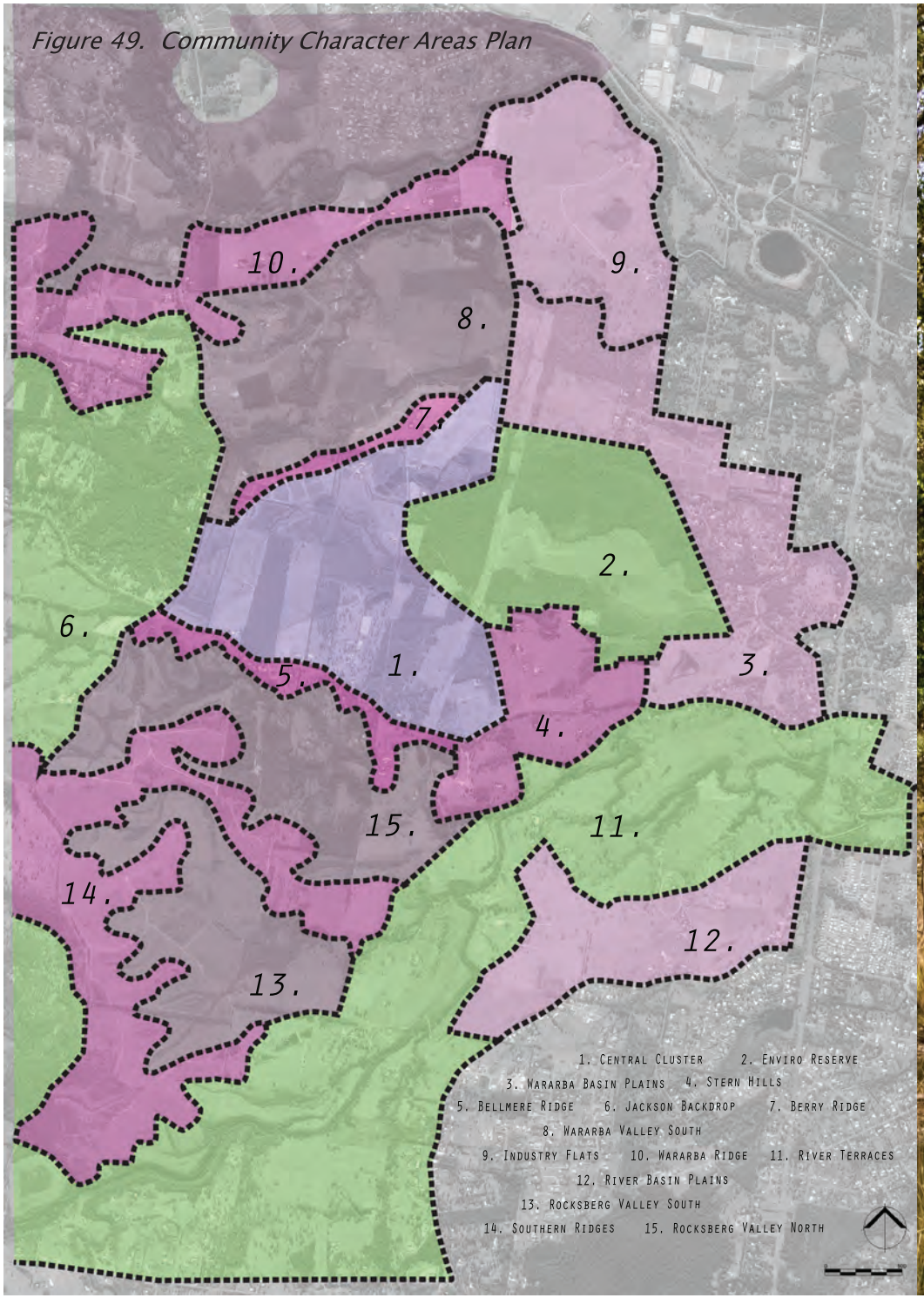


Figure 50. Character of an Open Vegetated Patch within the Southern Ridges
Image: Hodgson, 2013

1. Central Cluster

- Is a diverse landscape which sits between two major ridgelines with a number of smaller ridges breaking up the central valleys.
- It has a number of small tributaries that connect this area to the adjoining environmental reserve and these should become a feature linking the reserve to the centre.
- The area contains the proposed town centre for Caboolture West and is encircled by the proposed Centre Crown. Therefore development must emphasise the diversity of the area and integrate with the ideas of the Crown.
- It has good views to the Glass House Mountains, D'Aguilar Range and other prominent points across the site and therefore must integrate these views and consider the view sheds in which it sits.
- There is a good proportion of existing vegetation within this area and significant species should be retained in the first instance. Any streetscape or park planting should integrate with the ideas of the Crown and predominantly utilise signature species from RE12.11.14, 18, 12.5.3 & 12.3.11.
- The civic centre and town park must celebrate the diversity of the area and integrate the qualities of the River, the Range and water.

2. Enviro Reserve

- Is a large fairly well connected patch of remnant vegetation. The environmental value and integrity of this patch should be retained and enhanced through development and restriction of vegetation clearing.
- Any development that occurs within this area should be an extension of the vegetation communities and integrate with these so a negative environmental impact is not created.
- Low impact access and recreation spaces should be integrated into this area for people to enjoy the environmental values of the area and the waterways.

Figure 51. Central Cluster

Figure 52. Enviro Reserve

3. Wararba Basin Plains

- Is a relatively flat area that drains to Wararba Creek and is predominantly rural residential with a high proportion of large existing trees. This area acts as a transition between the higher density urban development of Caboolture and the proposed higher density urban development of Caboolture West. Therefore the retention of significant trees and vegetation and the restriction of higher density development are important.
- Focus should also be added to linking the waterways throughout these plains and using these as character features, recreation spaces and linear corridors linking the new areas of Caboolture West and existing areas of Caboolture.
- Streetscape planting should aim to utilise existing trees in the first instance or tree species predominantly found within the area to portray the current treed character of the area.

4. Stern Hills

- Are three prominent points that sit as gateway elements rising up from the flats creating a ‘sense of arrival to the centre from Bellmere Road from the east and a new proposed road entering from the south. Therefore these hills should exhibit design that acknowledges this gateway.
- This area is predominantly cleared with some large stands of vegetation; significant species should be retained in the first instance. Any streetscape or park planting should integrate with the ideas of the Crown and predominantly utilise signature species from RE12.11.14, 18, 12.5.3 & 12.3.11.
- This area also has access to good views to the D’Aguilar Range, Caboolutre River and the Environmental Reserve and therefore must integrate these views into any development and consider the view sheds in which it sits.

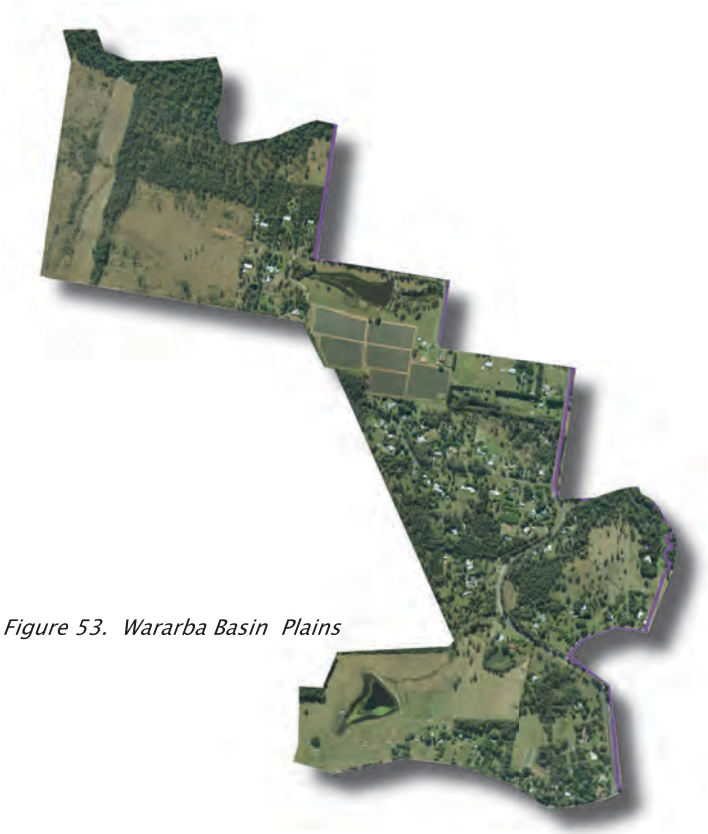


Figure 53. Wararba Basin Plains

Figure 54. Stern Hills

5. Bellmere Ridge

- Is a thin area that bounds the southern portion of the Central Cluster and overlooks this and the valley to the south.
- The prominent points within this area will be visible from surrounding areas and therefore should exhibit landmark elements and provide a positive visual impact.
- Development within this area should be visually appealing, softened and screened by existing vegetation supplemented with landscaping and large tree planting.
- The area contains the proposed Centre Crown and therefore development must emphasise and integrate with the ideas of the Crown.
- It has strong views to the Glass House Mountains, D'Aguilar Range and other prominent points across the site and therefore development must integrate these views and consider the view sheds in which it sits.

6. Jackson Backdrop

- Is a larger area that consists of a relatively connected patch of existing vegetation and a patch of cleared rural grazing land. This area acts as a transition to the higher portions of the range and the beginning of the green backdrop of not only Caboolture West but much of the Region. Therefore vegetation clearing and development should be restricted to ensure the greenback drop for the Region in not eroded.
- Any development that occurs within this area should be an extension of the vegetation communities (RE12.11.5 and 12.3.11) and integrate with these so a negative environmental impact is not created.

Figure 55. Bellmere Ridge

Figure 56. Jackson Backdrop

7. Berry Ridge

- Is a thin area that bounds the northern portion of the Central Cluster and overlooks this and the valley to the north.
- The prominent points within this area will be visible from surrounding areas and therefore should exhibit landmark elements and provide a positive visual impact.
- Development within this area should be visually appealing, softened and screened by existing vegetation, supplemented with landscaping and large tree planting.
- The area contains the proposed Centre Crown and therefore development must emphasise and integrate with the ideas of the Crown.
- It has strong views to the Glass House Mountains, D'Aguilar Range and other prominent points across the site and therefore development must integrate these views and consider the view sheds in which it sits.
- It is also the location of an extensive berry growing operation. The integration of this character into the new urban fabric recognising this area's history is to be explored.

8. Wararba Valley South

- This area is defined by a major ridge in the north and ridge in the south. It is predominantly cleared grazing and cropping with some patches of existing vegetation usually associated with the tributaries of Wararba Creek.
- Focus should be added to linking the waterways throughout the valley and using these as character features, recreation spaces and linear corridors linking the surrounding areas.
- Streetscape planting should aim to utilise existing trees in the first instance or tree species predominantly found within the area to reduce the hard impact of urban development and support the green views from the overlooking ridges.
- It is also the location of berry growing operations. The integration of this character into the new urban fabric recognising this area's history is to be explored.

Figure 58. Wararba Valley South

Figure 57. Berry Ridge

9. Industrial Flats

- Is a flat predominantly cleared area which contains an outlying prominent point. It is the first area entered within the site when arriving from the D'Aguilar Highway.
- Strong streetscape design utilising large signature tree species and wider buffers should be utilised along the main roads so that entry into the site from the North is not dominated by a large industrial area.
- Streetscape planting throughout the remainder of the area should aim to utilise existing trees in the first instance or tree species predominantly found within the area to reduce the hard impact of urban development and support the green views from the overlooking ridges.
- Waterways traversing the area should be protected and utilised as recreation spaces and linear corridors linking the surrounding areas.
- The prominent point within this area will be visible from surrounding areas and therefore should exhibit landmark elements and provide a positive visual impact.

10. Wararba Ridge

- Is a linear area that bounds the northern portion of the site, rises up from Waraba Creek and overlooks Wararba Valley South and Wararba Valley North.
- The crossing of Wararba Creek and rising up the ridge creates a 'sense of arrival' element to Caboolture West from Old North Road from the north. Therefore these hills should exhibit design that acknowledges this gateway.
- The prominent points within this area will be visible from surrounding areas and therefore should exhibit landmark elements and provide a positive visual impact.
- Development within this area should be visually appealing, softened and screened by existing vegetation supplemented with landscaping and large tree planting.
- It has strong views to the Glass House Mountains, D'Aguilar Range and other prominent points across the site and therefore must integrate these views and consider view sheds in which it sits.
- It is also the location berry growing operations. The integration of this character into the new urban fabric recognising this area's history is to be explored.

Figure 59. Industrial Flats

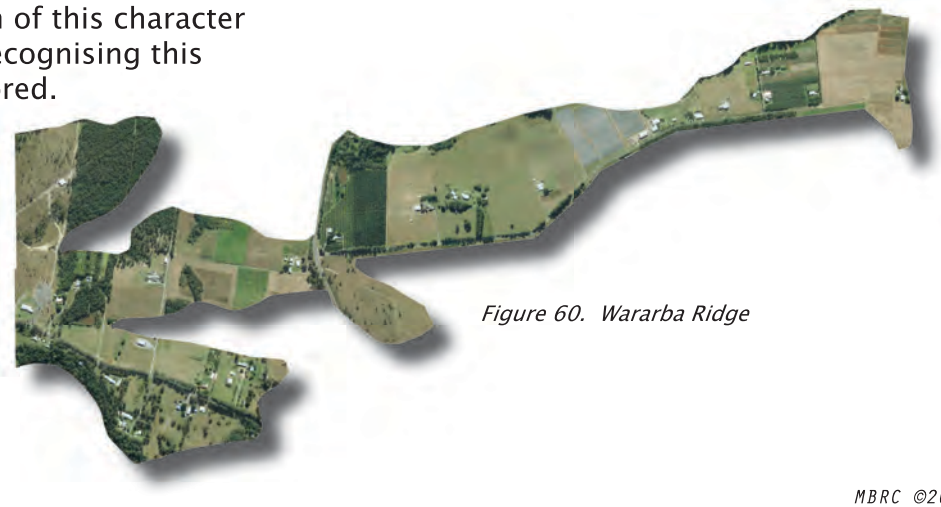


Figure 60. Wararba Ridge

11. River Terraces

- Is the area that follows the alignment of the Caboolture River and therefore should reflect the regional character requirements for the integration of the River.
- Any development that occurs within this area should be an extension of the vegetation communities and integrate with these so a negative environmental impact is not created.
- Low impact access and recreation spaces should be integrated into this area for people to enjoy the environmental values of the waterway.

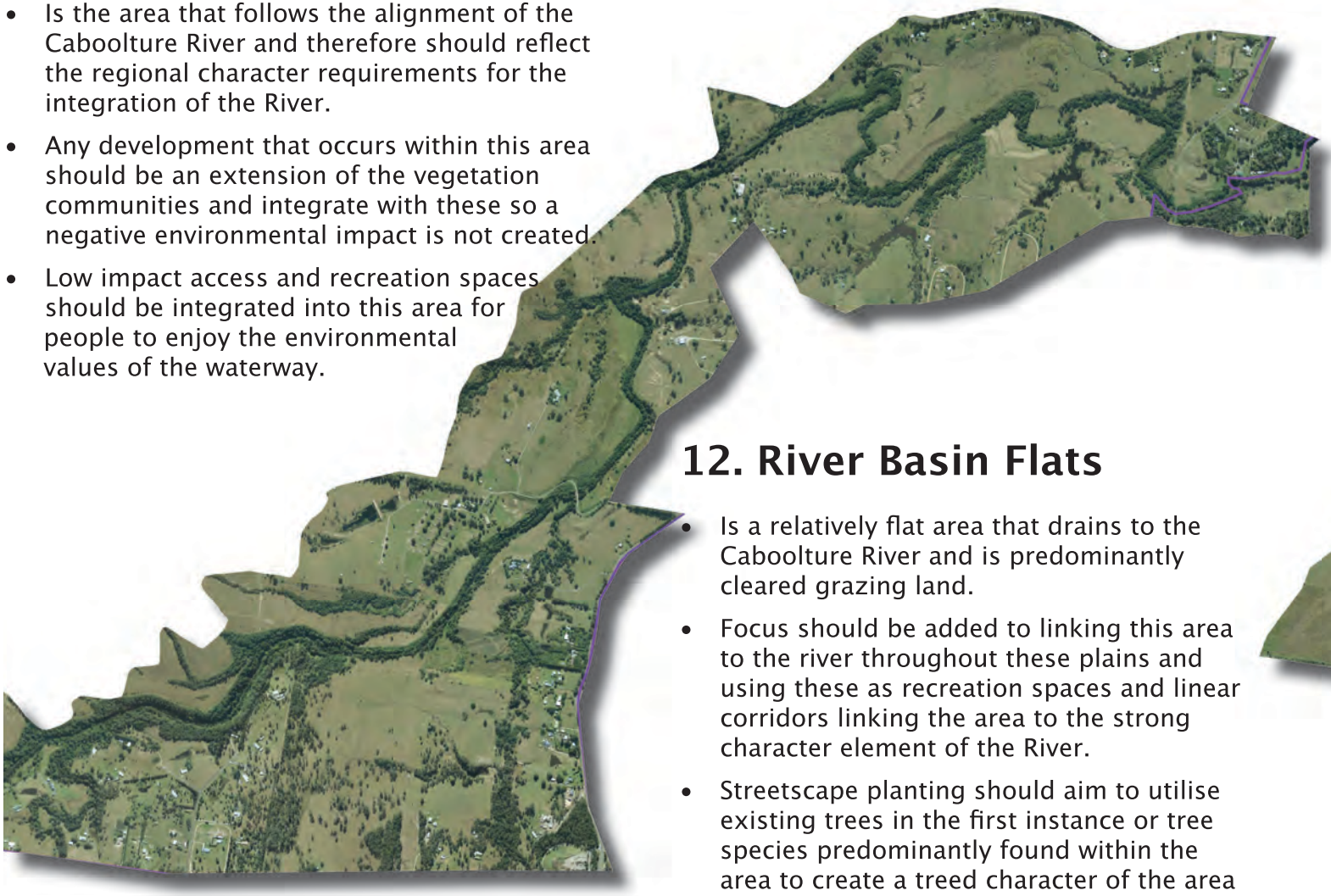


Figure 61. River Terraces

12. River Basin Flats

- Is a relatively flat area that drains to the Caboolture River and is predominantly cleared grazing land.
- Focus should be added to linking this area to the river throughout these plains and using these as recreation spaces and linear corridors linking the area to the strong character element of the River.
- Streetscape planting should aim to utilise existing trees in the first instance or tree species predominantly found within the area to create a treed character of the area that relates back to the open forest type vegetation community that existed here prior to clearing.
- Strong streetscape design utilising large signature tree species and wider buffers should be utilised along Caboolture River Road at the entry of the site to create a 'sense of arrival' and provide a positive visual impact.

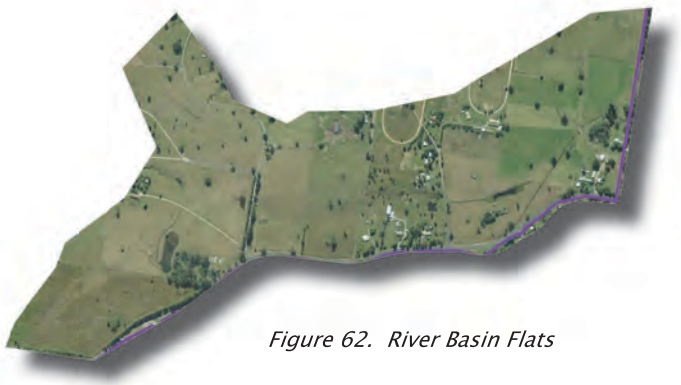


Figure 62. River Basin Flats

13. Rocksberg Valley South

- This area is defined by the encompassing southern ridges. It is predominantly cleared grazing land with some patches of existing vegetation associated with the tributaries of the Caboolture River.
- Focus should be added to linking the waterways throughout the valley and using these as character features, recreation spaces and linear corridors directly linking the valley to the strong character element of the Caboolture River.
- Streetscape planting should aim to utilise existing trees in the first instance or tree species predominantly found within the area to reduce the hard impact of urban development and support the green views from the overlooking ridges.

14. Southern Ridges

- Are complexes of adjoining ridges that sit as gateway elements rising up from the River Terraces creating a ‘sense of arrival’ to the site from Caboolture River Road and Old North Road. Therefore these hills should exhibit design that acknowledges this gateway.
- This area is predominantly cleared with some small stands of vegetation which should be retained to protect green views across the landscape.
- Development within this area should be visually appealing and softened and screened by existing vegetation supplemented with landscaping and large tree planting.
- The prominent points within this area will be visible from surrounding areas including areas offsite and therefore should exhibit landmark elements and provide a positive visual impact.
- This area also has access to strong views to the D’Aguilar Range, and the Caboolutre River and therefore development must integrate these views and consider the view sheds in which it sits.

Figure 63. Rocksberg Valley South

Figure 64. Southern Ridges

15. Rocksberg Valley North

- This area is defined by major ridge to the north and the northern portion of the Southern ridges to the South. It consists of a relatively connected patch of existing vegetation associated with a number of tributaries of the Caboolture River.
- The slope within the majority of the area is conflicting with development and the vegetation acts as a transition from proposed urban development to the south and the proposed town centre. This area also provides green views from the adjoining ridges. Therefore the retention of significant trees and vegetation and the restriction of higher density development are important.
- Focus should be added to linking the waterways throughout the valley and using these as character features, recreation spaces and linear corridors directly linking the valley to the strong character element of the Caboolture River and the larger patch of vegetation within the Jackson Backdrop.
- Streetscape planting should aim to utilise existing trees in the first instance or tree species predominantly found within the area to reduce the hard impact of urban development and support the green views from the overlooking ridges.
- Any development that occurs within this area should be an extension of the vegetation communities and integrate with these so a negative environmental impact is not created.

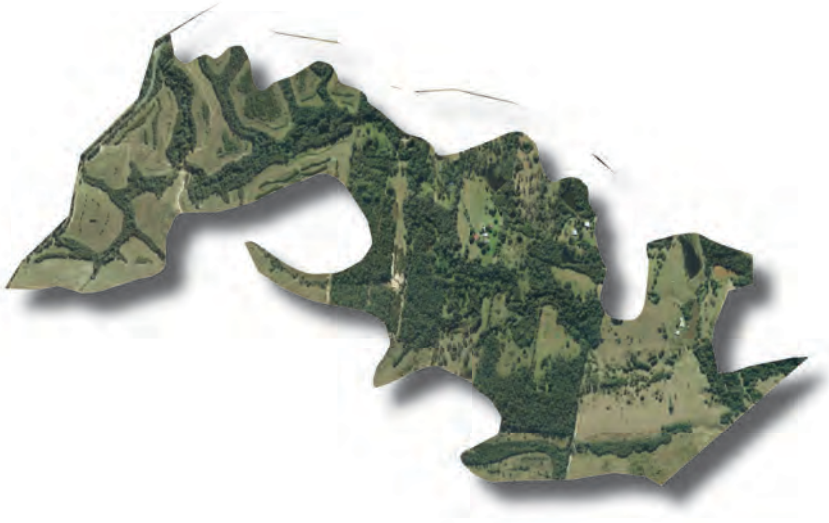


Figure 65. Rocksberg Valley North

8. Strategic Framework Provisions.

Master Plan

The Strategic Framework Plan for the integration of the Caboolture West Landscape Character is illustrated in Figure 66. It identifies the locations of both regional and local character elements described in this report that need consideration to engrain a distinctive visual character into the Caboolture West development.

The following provisions as outlined throughout this report and the local character area descriptions above should be read in conjunction with this plan.

The Master Plan and proposed provisions are provided on pages 43, 44 & 45.

9. Conclusion.

This report explored the analysis undertaken on the existing landscape character of the Caboolture West study area and identifies the important landscape qualities within the site. A regional framework was proposed to best retain and enhance these landscape qualities through the development process to ensure they become distinctive regional features within the changing landscape of Caboolture West.

Smaller community character areas were then explored to provide a basis to generate local diversity and difference creating more distinctive neighbourhoods within the whole site, while integrating with the regional character.

Through utilizing these landscape features the future development becomes linked to the site. This integrates an original and distinct character to the area and the people as a Region, and brings through an identity and ‘sense of place’ to future communities.

Landscape Character Framework Plan

SCALE: 1:20,000@A3

TOWN CENTRE

PROMINENT HILL

RIDGE CHARACTER AREA

PLAIN CHARACTER AREA

WATERWAY SLOW SPACE

WATERWAY FLOW SPACE

CAB RIVER FLOW SPACE

CENTRE CROWN

PREFERRED VIEW OFFSITE

PREFERRED VIEW ONSITE

GROW SPACES

VILLAGE PARK

CENTRE CHARACTER AREA

VALLEY CHARACTER AREA

GREEN CHARACTER AREA

0 500

Provisions to Integrate the River

1. Access to the River and waterways in appropriate locations for passive and active recreation is to be incorporated.

2. Through appropriate design the river and its tributaries are utilised as a connected network of useable linear green open space.

3. Environmental integrity and connectivity of the river and its tributaries are protected and enhanced through restoration and revegetation.

4. Any design will explore the positives of flux associated with the movement of water and incorporate these in a safe and meaningful way.

Provisions to Integrate the Centre Crown

5. Through Landscape Design, Urban Design and Architectural design the concept of the crown is portrayed in an obvious manner so that it is recognised and is incorporated into the street network and within the town centre.

6. Appropriate space is set aside in lot configuration and/or street configuration to ensure the crown follows the proposed alignment and links the prominent points and hilltop Parks surrounding the town centre.

7. Appropriate space is set aside in lot configuration and/or road configuration to ensure enough space and width is provided to accommodate large signature tree planting, the retention of existing signature tree species, the creation of a landscaped area with visual impact, recreation facilities, pathways and statement pieces.

8. Species selection should predominantly occur from the Regional Ecosystems 12.11.14, 18, 12.5.3 and 12.11.5.

9. Statement elements should portray a local identity and meaning to the neighbourhood but integrate with the overall region's identity.

10. Statement elements must be connected to the signature elements of the crown.

11. Appropriate design extends the elements of the crown through the Town Centre and Centre Square

12. Appropriate design extends the crown into the environmental area so that the crown elements are noticeable and linked to the environmental values of the area.

Provisions to Integrate the Prominent Points and Views

13. Opportunities to incorporate meaningful, locally significant and visually appealing landmarks on prominent points should be explored.

14. Urban, Landscape and Architectural design within these areas will be of a high visual amenity, frame views and not create a negative visual impact on other view sheds throughout the site.

15. Through Landscape design and site layout the development will retain existing significant tree species, and incorporate the planting of large signature tree species to soften the built form and create a green focus to the highpoints of Caboolture West

16. Average building heights should not exceed the mature heights of existing significant tree species or planted signature species, to protect and create a green skyline.

17. View shed alignments to the Glasshouse Mountains, D'Aguilar Range, and green spaces, are to be incorporated into the development. View shed alignments from other prominent points that may traverse the development must also be considered so a negative impact to these view sheds is not created.

18. Areas within prominent points that have access to significant view sheds are to undertake analysis to quantify the width and height of the significant view corridors, and design appropriate setbacks and landscape treatments to ensure these view corridors are not impeded.

Provisions to Integrate Hilltop Parks

19 Hilltop Parks are located on prominent points to protect and frame view sheds.

20 Hilltops parks are located within hilltop village centres where the centre development overlooks and connects with the hilltop park.

21 Hilltop parks will provide a range of recreation facilities that acknowledge the view sheds and complement the centre dynamic.

22 Architecture around hilltop parks must not impact on the significant view sheds and instead frame and focus them.

23 Hilltop parks add to the creation of the prominent points becoming landmarks within the Caboolture West fabric through utilising signature species, and statement elements.

24 Statement elements should portray a local identity and meaning to the neighbourhood but integrate with the overall region's identity.

25 Statement elements must be connected to the signature elements of the crown.

26 Through landscape design and site layout the Hilltop Village and Park will retain existing significant tree species, and incorporate the planting of large signature tree species to soften the built form and create a green signature to the highpoints of Caboolture West.

Provisions to Integrate The Water Relationship of The River and The Range

27 Slow – water features or elements like rain gardens, ephemeral wetlands, bioswales and bio retention areas that slow and retain water and create a character element are to be integrated into park design and streetscape design.

28 Slow – the designed water features or elements will promote human interaction and provide a high visual impact in both wet and dry periods.

29 Flow – Swales or drainage channels are designed to emphasis the movement and sound of water. The use of rocks, barriers, vegetation, pools, and cascades are some elements that may achieve this with appropriate design.

30 Flow – appropriate access to the river and its tributaries is provided to allow people to interact with the natural moving water of these waterways in a safe manner.

31 Flow – the swales or drainage channels will provide a high visual impact in both wet and dry periods.

32 Grow – appropriate design of park spaces and/or streetscapes should integrate food growing elements reinforcing the rural history of the area.

33 ALL – The water features or elements will accommodate and discharge high rainfall events safely, with no impact to the surrounding urban environment or natural environment.

34 ALL – appropriate design of the water features or element incorporates suitable methods for maintenance.