SJB Planning

Lloyd Place, Otford

Cluster Housing Review

25 June 2013

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1.0 Introduction

SJB Planning has been engaged by Wollongong City Council (WCC) to review the land capability of land known as the Lloyd Place precinct at Otford (the study area).

The purpose of this review is to assess the land capability of the Lloyd Place Precinct considering issues including:

- Slope;
- Flora and fauna habitats, Endangered Ecological Communities (EEC) and corridors;
- Bushfire risk;
- Drainage; and
- Soil capability – erosion hazard.

Upon reviewing the land capability, the brief requires the identification of a possible location/s for a cluster of 20 dwellings within the precinct, with possible transfer of the balance of the land not suitable for residential development to public ownership for conservation purposes.

Should potential development locations be identified, the consequences of development are to be considered, including:

- Extent of clearing required for new dwellings and bushfire mitigation measure;
- Desktop assessment of possible water quality impacts;
- Visual impact assessment;
- Impacts upon flora and fauna habitats and corridors; and
- Traffic generation.

The review is also to consider the ability to connect any development to water, sewerage, power and telecommunication services and utilities.

The review has been undertaken with the benefit of a site inspection carried out on the 26 May 2013 and information provided by Council. This has included:

- A review of reports to Council on the 7(d) Lands at Helensburgh, Otford and Stanwell Tops; and
- Review of the Willana Associates Draft review of the 7(d) Lands at Helensburgh, Otford and Stanwell Tops.

In addition to the reports provided, Council also provided as digital data files the following mapping layers:

- Study area cadastre;
- Study area contour maps;
- Study area riparian lands map;
- Study area bushfire prone lands map;
- Study area soil landscape map; and

- Study area Endangered Ecological Community (EEC) map.

This base information has been relied upon to establish the site slope map and riparian corridors maps utilised as a basis to explore and identify areas for potential development.

2.0 The Study Area

The study area abuts Otford village to the east and is bisected by Otford Road from north-west to south-east. Lloyd Place is a spur road running off Otford Road in a westerly direction.

Lloyd Place runs essentially parallel to an easterly flowing watercourse, located between Otford Road and Lloyd Place. Lloyd Place is located on the floor of a small valley known as Herbert Gulley. Herbert Gulley intersects with the Hacking River in the south-eastern corner of the study area.

Lloyd Place is a partly formed bitumen road in the vicinity of the intersection with Otford Road. Lloyd Place becomes a narrow graded road base roadway until is westerly termination at a cleared turn around area. The area subject of the review is shown in Figures 1 and 2 below.

Figure 1: Aerial of subject site (Source: http://maps.six.nsw.gov.au/)

Figure 2: Cadastral view of the subject site (Source: http://maps.six.nsw.gov.au/)

A further network of watercourses traverses the north-eastern section of the study area, north of Otford Road.

The land is generally vegetated with small pockets of cleared land to the south of the study area. An indication of the character of the study area can be gained from the site photos included at Figures 3 to 6.

Figure 3: Lloyd Place looking west

Figure 4: Lloyd Place looking west

Figure 5: Lloyd Place looking east from road termination

Figure 6: View from Lloyd Place looking south

The study area has a long history of investigation and consideration which will not be reviewed in detail. The study area is made up of some 23 lots, many of which were created in 1970 through subdivision to create 2 hectare lots, to facilitate the future construction of "County dwellings".

Subsequent to the creation of the lots, the county dwelling minimum lot size standard was increased from 2.0 hectares to 20 hectares. This outcome had the effect of prohibiting the construction of dwellings on any lots less than 20 hectares in area.

There is an existing dwelling located on Lot 500 in DP 788539, which is a larger lot located to the west of the 2.0ha lots. Lot 500 in DP788539 has a site area of 19.83 ha and was not part of the subdivision which created the Lloyd Place/Otford Road 2.0ha lots in 1970.

3.0 Methodology

Using the base cadastre and contour maps provide for the study area, four (4) slope Classes have been developed. The Classes are:

- Class A 0-8% slope
- Class B 8-18% slope
- Class C 18-25% slope
- Class D 25+% slope

These slope classes have been identified on the following basis:

Class A

0-8% slope – site slopes with little or no limitations to urban development.

Class B

8-18% slope – site slopes with minor to moderate physical limitations to urban development. These limitations may influence building and subdivision design to ensure that a stable land surface is maintained.

Class C

18-25% slope – site slopes with moderate physical limitations to urban development. These limitations may be overcome by appropriate building and subdivision design and site management techniques.

Class D

25+% slope – site slopes with severe physical limitations to urban development and should be avoided for residential development.

For the purpose of this review to identify land suitable for a cluster of 20 dwellings, land in slope Classes A and B is preferred.

The avoidance of utilising land in Classes C and D is primarily due to a desire to minimise the need for cut, particularly for the provision of vehicle access and parking. The steeper the site, generally the greater the level of site disturbance and required cut and therefore potential impact upon existing vegetation.

While land in slope Class C may in some circumstances be considered for limited urban development, in this circumstance Class C has not been considered as acceptable for further consideration due to the characteristics of the Watagan soil landscape unit identified for this area. The information provided for this review identifies that this soil landscape type is prone to mass movement and severe soil erosion hazard.

Due to these underlying characteristics steeper site slopes were not considered as appropriate for consideration due to the greater need for site disturbance. Class D land is to be avoided for urban development.

The site slope analysis was utilised to identify base developable areas before overlaying further constraints.

The Slope Class Map is provided at Attachment 1 of this report.

With the identification of sections of the study area potentially suitable for consideration for urban development, further environmental overlays have been considered.

Bushfire hazard has not been added as a specific layer in this exercise as the entire study area is identified as bushfire prone land. Bushfire hazard management is instead applied to any developable area that may be identified and the impact of the provision of Asset Protection Zones (APZs) considered.

The primary overlay imposed has been riparian corridors and riparian buffers.

Within the study area, there are several watercourses mapped by Council as Category 1 creeks (refer Part E23 - Riparian Land Management, Wollongong DCP 2009).

A Category 1 watercourse under the DCP requires a core riparian zone of 80m plus a buffer to either CRZ of 10m, resulting in a total corridor width of 100m (50m from either bank of the watercourse).

This approach has been taken to replicate the approach and consideration that would be taken if the study area were being considered for the development of the land for the purpose of initial subdivision.

That is, if the land were a "greenfield" subdivision, riparian corridors would in the majority of instances be quarantined from development. This is particularly so for an area such as the study area where the creeklines are substantially intact.

It is acknowledged that some existing lots and dwellings within Otford village are located within riparian corridors, however these are understood to be a result of historic approvals.

The Riparian Corridor Map is included at Attachment 2 of this report.

4.0 Environmental Considerations

Site slope and riparian corridors are the primary constraints utilised in this review in order to identify potential areas in the study area suitable for urban development. Any proposed development within the study area would be required to have regard to a number of further environmental constraints, which are considered below.

4.1 Soil landscapes

Within Attachment 1 of the report to Council dated 5 July 2011, it is identified that the study area is within the Watagan (wn) soil landscape unit.

The soil landscape discussion identifies that the limitations of this soil landscape unit include mass movement hazard, sever soil erosion hazard and occasional rock outcrops. The Watagan soil landscape type is noted as not generally capable of urban development relative to the risk of mass movement and erodability. The sensitivity of the soil landscape type reinforces the conservative approach adopted to the identification of areas to be considered for potential development and excluding site with slopes greater than 18%.

4.2 Flora and Fauna Considerations

The subject land is not mapped as containing Endangered Ecological Communities (EEC). The area is identified as having ecological value as part of a larger fauna corridor to augment the surrounding areas of National Park.

The sifting exercise has identified relatively small areas of the study area that fit the criteria for consideration set for urban development in this review.

If development were to occur in the identified location and clearing to the level anticipated undertaken, the overall impact upon the current canopy and vegetated areas would be minimal.

This conclusion is made in the absence of any detailed survey of the vegetation that would be cleared. No consideration or investigation has been made to determine if the area contains significant or important habitat such as tree hollows and the like. For the requested desktop assessment, the percentage of bushland to be cleared compared to the current situation is at the low order of potential clearing.

4.3 Water Quality Impacts

The assessment has assumed the provision of maximum buffers to the watercourses in the study area.

It is presumed that were urban development to occur in an area with the site characteristics of the study area, best practice water sensitive urban design and measures to minimise the transportation of pollutants into the watercourses would be required.

Urban development would however be expected to result in some contribution of gross pollutants and particulate matter into the watercourses arising from surface run-off from residential development and alteration of the natural state of the area.

4.4 Bushfire hazard

The entire study area is identified as being Bushfire Prone land. The land identified by the initial sift for further consideration for urban development is on land up to 18% in site slope.

The Bushfire Safety Compliance Report dated May 2009 forming Appendix B to the 7(d) lands review identified the following required APZ widths:

- Flat 20m
- 0-5° (0 – 8.74%) 25m
- 5-10° (8.74-17.6%) 35m
- 10-15° (17.6%-26.8%) 50m
- 15-18° (26.8%-32.5%) 60m

Any APZ would be required to be provided beyond any riparian corridor to maintain the integrity of that corridor. The riparian corridors due to their width remain as a source of bushfire hazard.

The implication of applying these APZ widths will be considered in the discussion on the merits of areas that satisfy the requirements established for further consideration.

Similarly it is assumed that the lands of greater than 18% site slope would be retained in the current vegetated states to maintain them as bushland and to facilitate soil stability. These retained bushland areas would also then be potential bushfire hazard sources to which APZs would have to be applied.

5.0 Servicing

The study brief includes a requirement for consideration of the ability to service the area. A review of previous correspondence between Council and utility authorities indicates that, subject to all costs being borne by the proponent, the land could be serviced.

Correspondence from Sydney Water dated 28 June 2010 in response to the Draft Review of 7(d) lands at Helensburgh, Otford and Stanwell Tops provides a comprehensive summary of the requirements for augmentation of the local sewerage system, pumping stations, water main amplification and trunk water pumping stations.

The environmental impacts or costs of these works have not been considered in this review, and are beyond the scope of the brief. It is however worthy of note that an understanding of the costs of such utility provision may be valuable information for Council, and the landowners in determining the cost benefit of pursuing a residential development of the land.

The range of works required by Sydney Water alone appear to be substantial for the consideration of a development comprising 20 lots.

It is also understood that a similar approach would be taken with power utilities with the proponent being required to fully fund any required augmentation of utility services. This would include matters such as kiosk substations and the like.

6.0 Traffic Generation

If development were feasible to accommodate 20 dwellings, it is expected that traffic safety, rather than network capacity, would be the primary area of concern. The introduction of 20 dwellings is considered unlikely to result in the network capacity being exceeded. It is also noted that the existing pattern of subdivision was approved in anticipation of permitting 20 dwellings with vehicular access from Otford Road and Lloyd Place.

The element that is of concern relates to the ability to have vehicles enter and exit dwellings in a safe manner.

The geometry of the intersection of Otford Road and Lloyd Place in particular is awkward and is exacerbated by the slope across this intersection.

It is in the vicinity of this intersection that the majority of the potentially developable land is located.

It is unclear from this review if this is a matter that is readily able to be resolved. Regardless, along with matters such as servicing, if development were able to be pursued, satisfactory solutions to the provision of safe access onto and off the current road network would be important matters to be satisfied.

7.0 Potential Development Locations

The site slope analysis and riparian corridor overlay has identified two (2) pockets of potentially developable land that satisfy the two (2) criteria set by this review which are to:

- Be located in slope Class A or B; and
- Be located outside riparian corridors.

The resulting mapping is provided at Attachment 3 of this report.

The potential development locations comprise areas of 0.4ha (Location A) and 0.67ha (Location B).

A pocket of Class A and B land was identified in the south western corner of the study area. This land was discounted for further consideration due to its remote location and the difficulty of providing vehicular access to this area through and over land of 25% or greater in slope, and difficulty in servicing such an isolated area of land.

For the purpose of this discussion and review, it is assumed that the baseline for development would be for the establishment of single dwelling houses on lots of 1,000m^2, similar to the minimum lot sizes applying to the existing Otford village area. This assumption has been adopted to be consistent with the current suite of controls applying to the Otford locality. This assumption therefore anticipates a building form consistent and comparable with that contemplated by the current LEP and DCP controls applying in the area.

It is assumed that for any dwelling provided clearing would be required to accommodate:

- APZ Inner Protection Area;
- APZ Outer Protection Area;
- Driveways and car parking;
- Building platform; and
- Private open space areas.

Given the small areas identified for consideration and the likely outcome that there would not be substantial tree canopy overhanging building roofs in bushfire prone lands, it is expected that any development would result in substantially cleared dwelling lots.

Reference to the existing pattern of vegetation clearance on nearby Georges Road, Otford is instructive in this regard.

It is also assumed that land with site slopes greater than 18% would be maintained in their natural state for environmental and soil stability reasons

7.1 Consideration of Potential Development Areas

Location A is located south of Lloyd Place and west of Herbert Creek. The area sits in the upslope from the junction of Herbert Creek and the Hacking River. The area has a north to south width of approximately 50m.

While Location A has satisfied the initial sift for further consideration for urban development, it is determined that the area is unsuitable for urban development for the following reasons:

- The imposition of APZs of 35-50m would exclude all of the area from being built upon. That is, an APZ from the watercourse to the north and the watercourse to the south would overlap, leaving no area within which a dwelling could be accommodated;
- The provision of vehicular access to Location A would most likely to be required to run parallel to the creek line and therefore within the riparian zone which it is desired to retain;
- Servicing costs to a relatively isolated location away from existing infrastructure in Otford is likely to be increased; and
- Servicing to this location is likely to result in increased site disturbance.

Location B is located close to the intersection of Otford Road and Lloyd Place, and is behind existing dwellings in Otford. Location B has an area of 0.67ha. The location has a depth of approximately 20–40m. Similar to Location A however, Location B is rendered essentially undevelopable once an APZ of 35-50m is imposed.

8.0 Conclusion

The brief required a review of the land capability of the study area with a view to identifying possible locations for a cluster arrangement of 20 dwellings.

Utilising the parameters set for the review there were two (2) pockets of land identified that were worthy of further consideration comprising a total area of 1.07ha. For the reasons detailed above, the imposition of bushfire protection measures results in a very limited likelihood of the two (2) locations being able to accommodate any residential development. That is, the required APZs overlap in both locations leaving no area available to accommodate dwellings.

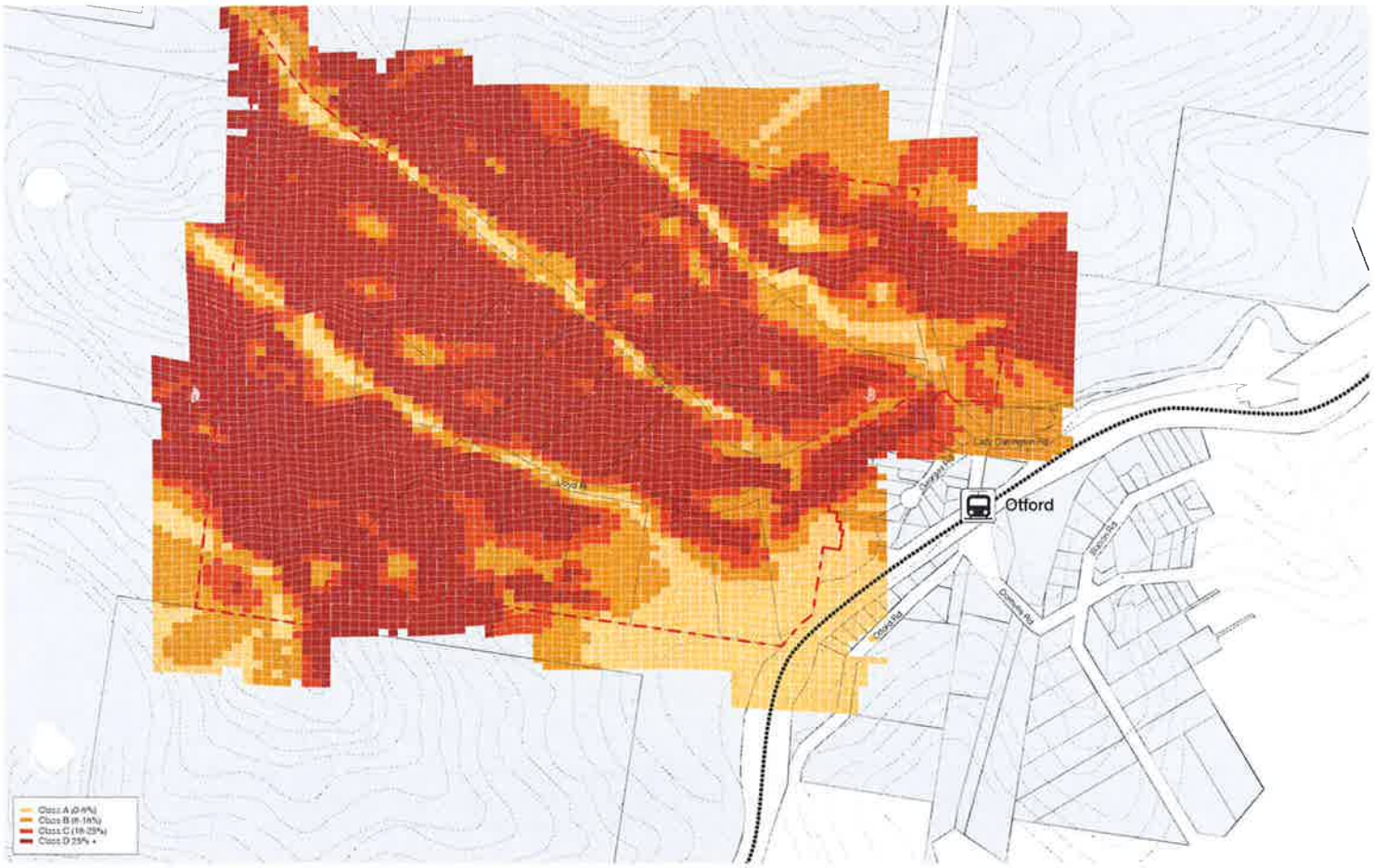
With the application of basic environmental constraint parameters regarding site development capacity the review has identified that it is unlikely that a location or locations can be identified to accommodate a cluster of 20 dwellings.

As the analysis indicates that it is unlikely that 20 dwellings could be accommodated in a cluster arrangement, further consideration of potential impacts such as a visual impact assessment are not necessary to be pursued.

In relation to visual impact, it is noted that if development in Location B were permitted to proceed and clearing for APZs was permitted into land with site slopes greater than 18% (but not within the riparian corridors), a substantial impact upon the character of the entry to Otford would result. Instead of the significant bushland character and the perception of an enclosing canopy overhead, the entry to Otford would be signalled a cleared and built upon area rather than a bushland screen to the existing dwellings that form Otford.

As the review has not identified an area suitable for a cluster of 20 dwellings, an area suitable for transfer to public ownership for conservation purposes has also not been identified. It is, however, reasonable to assume that areas that may be suitable for conservation purposes consistent with the proposed zoning for the land are all the areas that did not meet the criteria set for the consideration of urban development.

Attachment 1: Site Slope Analysis Mapping



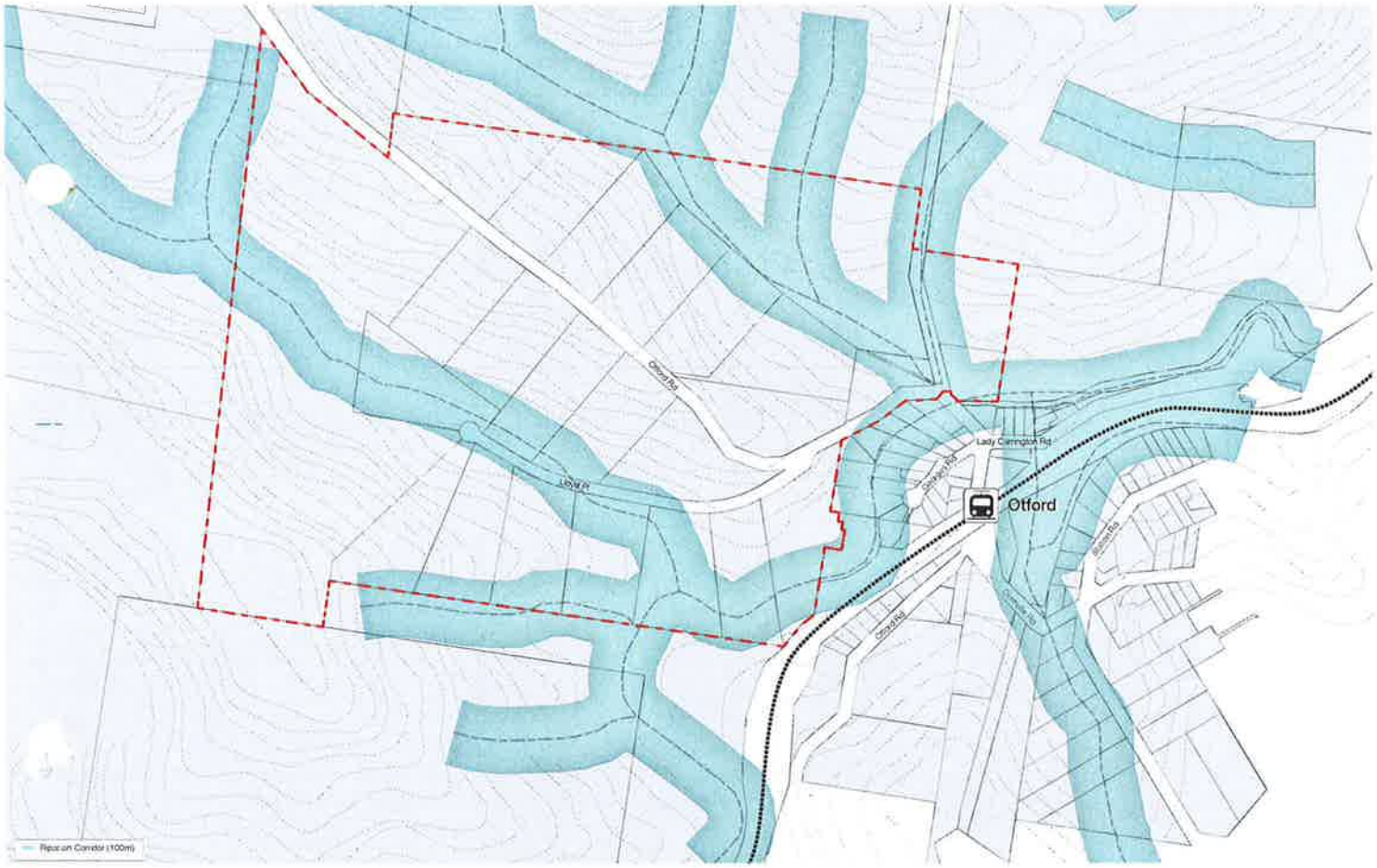
Project
Lloyd Place Review
Otford, NSW

Drawing
Topography Analysis Plan
19.06.2013 Rev 1

Scale
1:5,000 @ A3
1:2,500 @ A1

SJB Urban

Attachment 2: Riparian Corridor Mapping



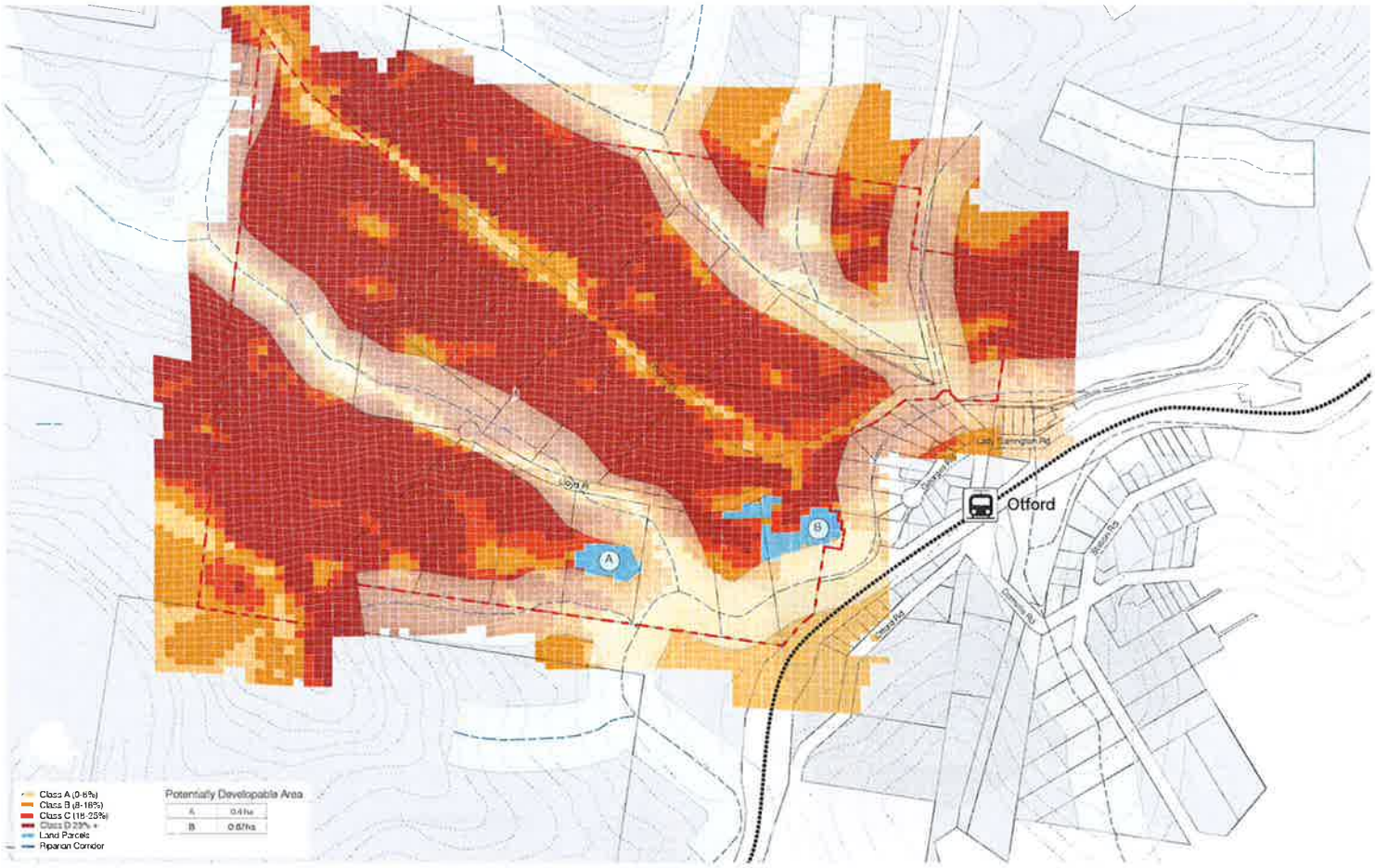
Project
Lloyd Place Review
Otford, NSW

Drawing
Riparian Corridors Analysis Plan
19.09.2013 Rev 1

Scale
1:5,000 @ A3
1:2,500 @ A1

SJB Urban

Attachment 3: Developable Land Analysis Mapping



Project
Lloyd Place Review
Otford, NSW

Drawing
Developable Land Analysis
19.06.2013 Rev 1

Scale
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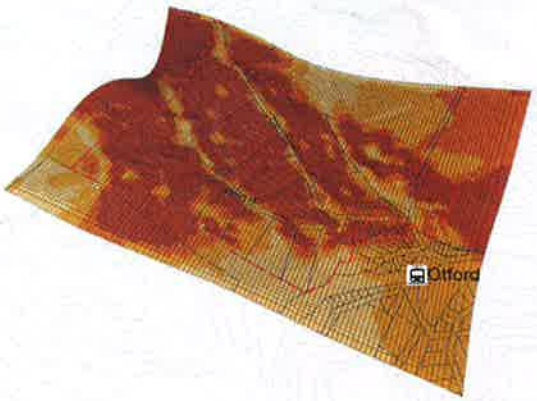
1:2,500 @ A1

S.B Urban



02 Riparian Corridor (100m)

03 Combined Study - Potentially Developable Land

Class A (0-5%)
Class B (5-15%)
Class C (15-25%)
Class D 25%+
Land Parcels
Riparian Corridor

Potentially Developable Area

A	0.1ha
B	0.67ha

Project
Lloyd Place Review
Otford, NSW

Drawing
3D Perspectives
19.06.2013 Rev 1

Scale
NTS

SJB Urban

SJB