

*Where such damage has occurred, it is to be repaired to Council's written satisfaction prior to the issue of an Occupation Certificate or suitable arrangements put in place to effect those repairs at a future date to Council's written satisfaction. Should this process not be followed, Council will pursue action against the principal accredited certifier in relation to the recovery of costs to effect such works.*

*Note It is an offence to occupy the building or part thereof to which this consent relates prior to the issue of an Occupation Certificate.*

1. All appropriate infrastructure is to be provided to service the proposed residential lots, including roads and accessways, drainage facilities, landscaping, water management facilities, and siltation and sedimentation control measures.
2. A suitably qualified and experienced bushfire management consultant is to certify in writing, that the final landscaping of the Asset Protection Zone, as required by these conditions, satisfies the requirements for inner and outer protection areas as detailed in the "Bushfire Risk Management Assessment Report" (Flame Zone, 2009), "Standards for Asset Protection Zones" (RFS, 2005), Management of Asset Protection Zones 14-18 "Boondah Road, Warriewood Valley" (Landscape Direct, 2008), and the "Planning for Bushfire Protection" (RFS, 2006).
3. Prior to issue of the Occupation Certificate, Form 3 of the *Geotechnical Risk Management Policy* (Appendix 5 of P21 DCP) is to be completed and submitted to the Principal Certifying Authority.
4. Certification is to be provided to the Principal Certifying Authority by a qualified experienced practising Civil Engineer with corporate membership of the Institute of Engineers Australia (M.I.E.), or who is eligible to become a corporate member and has appropriate experience and competence in the related field, that the drainage/stormwater management system has been installed to the manufacturer's specification (where applicable) and completed in accordance with the engineering plans and specifications required under this consent.

The Water Management Report and all associated plans and detailed design must be certified in accordance with the Warriewood Valley Water Management Specification (February 2001) and as meeting the requirements of these conditions.

5. A certificate submitted by a Chartered Professional Engineer confirming to the satisfaction of the Principal Certifying Authority that the works in the public road reserve comply with Council requirements is to be provided with the Occupation Certificate application.
6. Prior to issue of an Occupation Certificate photographic evidence of the condition of the street trees and road reserve and area adjoining the site after the completion of all construction, must be submitted to the Principal Certifying Authority showing that no damage has been done and if damage

has been done that it has been fully remediated. The photographs shall be accompanied by a statement that no damage has been done (or where damage has been remediated that Council has approved that work). In this regard Council's written agreement that all restorations have been completed satisfactorily must be obtained prior to the issue of any Occupation Certificate.

7. Restoration of all damaged public infrastructure caused as a result of the development to Councils satisfaction. Councils written approval that all restorations have been completed satisfactorily must be obtained must be provided to the Private Certifying Authority with the Occupation Certificate application.
8. All existing and /or proposed dwellings/sole occupancy units are to have approved hard-wired smoke alarms installed and maintained over the life of the development. All hard-wired smoke alarms are to be Australian Standard compliant and must be installed and certified by any appropriately qualified electrician prior to the issue of any Occupation Certificate.
9. Prior to the issue of the Occupation Certificate, a Suitably Qualified Professional is to certify to the satisfaction of the Principal Certifying Authority that the attached requirements of the NSW Rural Fire Service, have been satisfied.

Certification by a Landscape Architect that all the landscaping works outlined in the Landscaping Plans referred to in Condition C.5 have been completed in compliance with these plans.

10. Preparation of 24 month maintenance strategy for all landscape elements/planting by nominated landscape Consultant and submitted to certifier prior to issue of Occupation Certificate. Evidence of engagement of maintenance contractor for 24 months for all landscape works as constructed by the applicant to be dedicated to Council. 24 month period to be completion of all landscape works as proposed. Evidence of engagement to be submitted to and approved by certifier/Council prior to issue of Occupation Certificate.
11. Removal of Noxious and Environmental Weeds is to be certified by a Bushland Management Consultant as being complete.
12. A copy of the Section 73 Compliance Certificate issued under the provisions of the Sydney Water Act, 1994, is to be forwarded to Council or the Private Certifying Authority with the Occupation Certificate.
13. The Odour Impact Assessment referred to in conditions C1, C2 and C3 as undertaken must demonstrate to the satisfaction of Council that prior to the issue of Occupation Certificate, the Odour Mitigation Work has resulted, and will continue to result in the STP achieving the appropriate specified criteria..

## **F. Matters to be satisfied prior to the issue of Subdivision Certificate:**

### *General*

1. Submission of a Subdivision Plan (and associated documents) subdividing the land into 140 individual Residential lots, a lot containing that part of the land to be dedicated to Council as Creekline Corridor, a residual lot containing Water Management Facilities, Asset Protection Zones, and Environmental Buffer Areas to be retained in private ownership and maintained in accordance with the conditions of the Consent, and a lot containing the internal road system to be dedicated as Public Road and dedication of a splay corner (5metres x 5 metres) at the intersection of MacPherson Street and Boondah Road. The Subdivision Plan and associated legal documents are to be in accordance with the requirement set out in Deferred Commencement Condition No.1.
2. The method of assigning ownership and maintenance obligations in respect of the residue lot as required by this Consent is optional but must be achieved through an appropriate legal method so as to clearly obligate the future owner/s of that lot to satisfy those maintenance obligations.
3. A positive covenant/ restriction on the use of land is to be created prior to the issue of the Subdivision Certificate, or by the registration of the Plan of Subdivision, where the recommendations of the approved Geotechnical Report requires on-going maintenance / inspections to ensure that the development achieves the *acceptable level of risk* criteria over the life of the development, the terms of which are to require the landowner to comply with the recommendations contained in that report. Where there are no such recommendations – no covenant is required.
4. Creation of a restriction on the use of land and a Section 88B instrument burdening all lots and benefiting Pittwater Council which provides for:
  - (i) prohibition on the keeping of domestic cats;
  - (ii) restriction of dogs to within the building at night and otherwise to be either within a fenced compound on the lot or on a lead.
5. Appropriate easements are to be created where service lines or drainage lines over land flowpaths or the like, pass through private property other than the lot which they benefit. Full details in this regard are to be submitted to Council, prior to release of the Subdivision Certificate.
6. Appropriate Rights of Way and Rights of Carriageway are to be created over any common driveway burdening and benefiting the proposed lots, to provide for suitable legal pedestrian access to the dwellings and appropriate vehicular access and manoeuvring to the parking areas on all lots. Full details in this regard are to be submitted to Council, prior to release of the Subdivision Certificate.
7. All appropriate infrastructure is to be provided to service the proposed

residential lots, including roads and accessways, drainage facilities, landscaping, water management facilities, and siltation and sedimentation control measures.

8. The following documents and payments are to be submitted to Council in a single package to ensure the efficient release of the Subdivision Certificate: -

Evidence that the Section 94 Contribution requirements have been met:

Payment of the Section 94 Contribution.

A copy of the Section 73 Compliance Certificate issued under the provisions of the Sydney Water Act, 1994.

Copies of the Subdivision Plans (original plus 9 copies).

The private certifier's Compliance Certificate. Each component of the works as outlined above is to be certified as being carried out in accordance with the relevant plans and documentation by suitably qualified professional persons as outlined in this development consent. In particular, the construction of the Water Management System is to be supervised and certified by person(s) with appropriate experience and expertise in Environmental Science, Hydrology and Hydraulics, and must be NPER registered members of the Institution of Engineers (Australia).

Works-as-executed plans for all structures or facilities which will be dedicated to Council or which are located within drainage easements or which will require ongoing maintenance by Council.

The plans are to be in paper and electronic format (dwg or dxf file) and comprise at least the following: -

- Boundary layout;
- Kerb and gutter, road pavement, footpaths, traffic devices, retaining walls;
- Signage (including type and wording), line marking;
- Easements, survey numbers and marks, reduced levels and co-ordinates;
- Stormwater drainage, pipe sizes and types, pit sizes and types, subsoil drains;
- Water quality devices, ponds, creek line corridors, parkland, play equipment;
- Significant landscaping.

- a) A security deposit of 5% of the value of the constructed works is to be made to ensure rectification of any defects during the maintenance period. A maintenance period is to apply to all works to be dedicated to Council or which will require ongoing maintenance by Council. The maintenance period will apply for six (6) months after the issue of the Subdivision Certificate. In that period the applicant will be liable for any part of the works which fail to perform in the manner required by the relevant certifications, or as would be reasonably expected under the design conditions.



9. At least ten (10) nest boxes (models as shown on Pittwater Council website [www.pittwater.nsw.gov.au](http://www.pittwater.nsw.gov.au)) are to be appropriately installed in existing trees. A Bushland Management Consultant is to certify that this has been appropriately completed.
10. A Bushland Management Consultant to certify that:
  - native plant selection and planting as per the approved Landscape Plan and conditions has been completed,
  - all recommendations/actions prescribed in the approved Flora and Fauna Report and the Vegetation Management Plan have been undertaken fully and where relevant completed and that an appropriate program of regeneration and maintenance has been entered into to comply with requirements of the Plan, and
  - that areas/features requiring protection have been adequately protected and are in an acceptable condition.
11. Evidence is to be provided in writing that a Monitoring and Fuel Management Program has been implemented in accordance with the Bushfire Risk Management Assessment Report (Flame Zone, 2008) and Standards for Asset Protection Zones (RFS, 2005).
12. Evidence of an 18-month maintenance program is to be submitted to Council on completion of all landscaped areas as required under this Consent. During this period the nominated contractor shall maintain all approved landscape areas inclusive of weeding, watering, mowing and replacement of failed plant material.

*[Note: An 18-month maintenance period is standard throughout the valley to efficiently manage the establishment of landscaping works.]*

13. Prior to issue of a Subdivision Certificate photographic evidence of the condition of the street trees and road reserve and area adjoining the site after the completion of all construction, must be submitted to the Principal Certifying Authority showing that no damage has been done and if damage has been done that it has been fully remediated. The photographs shall be accompanied by a statement that no damage has been done (or where damage has been remediated that Council has approved that work). In this regard Councils written agreement that all restorations have been completed satisfactorily must be obtained prior to the issue of any Subdivision Certificate.
14. Restoration of all damaged public infrastructure caused as a result of the development to Councils satisfaction. Councils written approval that all restorations have been completed satisfactorily must be obtained must be provided to the Private Certifying Authority with the Subdivision Certificate application.
15. Prior to the issue of the Subdivision Certificate, a Suitably Qualified Professional is to certify to the satisfaction of the Principal Certifying Authority

that the attached requirements of the NSW Rural Fire Service, have been satisfied.

#### *Roads and Drainage*

16. All roads, drainage and civil engineering works required by these conditions of this consent are to be completed prior to the issue of the Subdivision Certificate.
17. Certification is to be provided to Council, by an experienced civil engineer who is NPER accredited by the Institution of Engineers Australia, that all roads, drainage and other civil engineering works relating to Macpherson Street, Boondah Road and the development site (STP Buffer Area 3) have been carried out and completed in accordance with the engineering plans and specifications required under these conditions of this consent.
18. A maintenance period is to apply to all civil engineering works to be dedicated to Council or which will require ongoing maintenance by Council. The maintenance period will apply for six (6) months after the issue of the Subdivision Certificate. In that period the applicant will be liable for any part of the works which fail to perform in the manner required by the relevant certifications, or would reasonably be expected under the design conditions.
19. A Certificate by a qualified Engineer or Architect confirming that all driveways have been constructed in accordance with the approved plans and Council's Pittwater 21 DCP is to be submitted to the Council and the accredited certifier (if any) prior to the issue of the Subdivision Certificate.
20. Restoration of all damaged public infrastructure caused as a result of the development to Council's satisfaction. Council's written approval that all restorations have been completed satisfactorily must be obtained.
21. Prior to the issue of any Subdivision Certificate, the applicant must submit a report from an appropriately qualified and experienced geotechnical engineer certifying that the lots are geotechnically stable and will provide an appropriate platform for any subsequent building on the development site.

#### *Water Management*

22. All works associated with the water management system required under these conditions of this consent are to be completed prior to the issue of the Subdivision Certificate.
23. Certification is to be provided to Council, by an appropriately qualified professional, that works associated with the water management system have been carried out and completed in accordance with the updated/revised Water Management Report required at the Construction Certificate stage and as required under conditions of this consent. Certification is to be provided in accordance with the Warriewood Valley Water Management Specification (February 2001).
24. A copy of the updated/revised Water Management Report required under these conditions of this consent must be submitted to Council. The Water Management Report must contain all reports, assessments and plans as

required by the *Warriewood Valley Water Management Specification (February 2001)*. An operation and performance manual is to be provided to Council for the water management system prior to release of Subdivision Certificate.

25. A maintenance period is to apply to the water quality control devices. The maintenance period will apply for two (2) years after the issue of the Occupation Certificate. In that period the applicant will be liable for any part of the works which fail to perform in the manner required by the relevant certifications, or as would be reasonable expected under the design conditions. A security deposit of a value to be determined by Council is to be made to ensure rectification of any defects during the maintenance period.
26. Notification to Council, certified by the appropriately qualified professional, of the properties to be notated under Section 149(2) for either Flood Category 1 or 2. Such notification is required to be submitted in sufficient time to allow process through the elected Council (approximately 6 weeks).

**G. Advice:**

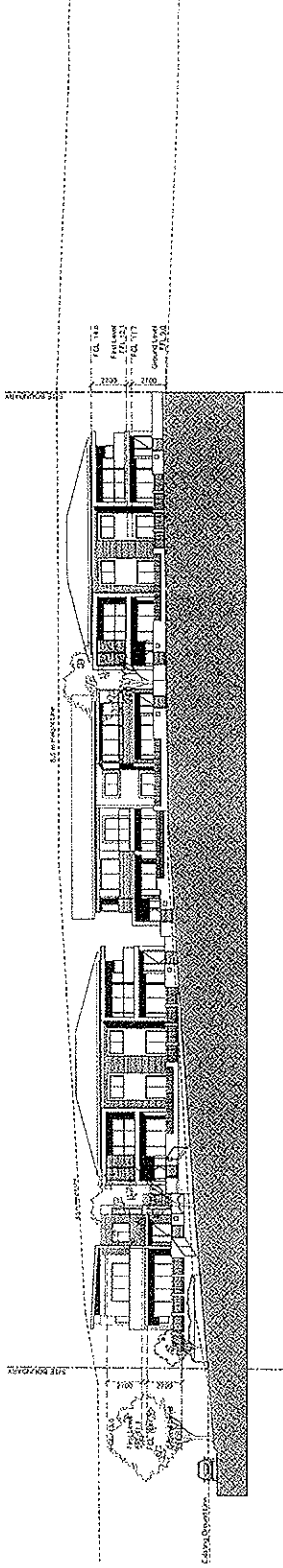
1. Any further development application for Class 1, 2 & 3 buildings as identified by the Building Code of Australia must be subject to separate application under Section 79BA of the EP&A Act and address the requirements of Planning for Bush Fire Protection 2006.
2. Portions of the site may be liable to flooding from the 1% AEP and the PMF (Probable Maximum Flood) and effective precautions should be taken by the owner(s) and/or occupier(s) of the building to reduce any potential risk to personal safety and to minimise any property damage to the structure, its fixtures and contents.
3. Electrical insect killing light devices should not be used outside and not installed anywhere that they can attract and kill micro-bats.
4. Failure to comply with the relevant provisions of the Environmental Planning and Assessment Act, 1979 (as amended) and/or the conditions of this Development Consent may result in the serving of penalty notices (on-the-spot fines) under the summary offences provisions of the above legislation or legal action through the Land and Environment Court, again pursuant to the above legislation.
5. The applicant is also advised to contact the various supply and utility authorities, i.e. Sydney Water, Sydney Electricity, Telstra etc. to enquire whether there are any underground utility services within the proposed excavation area.
6. It is the Project Managers responsibility to ensure that all of the Component Certificates/certification issued during the course of the project are lodged with the Principal Certifying Authority. Failure to comply with the conditions of approval or lodge the Component Certificates/certification will prevent the Principal Certifying Authority issuing an Occupation Certificate.

7. In accordance with Section 95(2) of the Act, this consent will lapse if the development, the subject of this consent, is not commenced within 2 years after the date from which this consent operates.

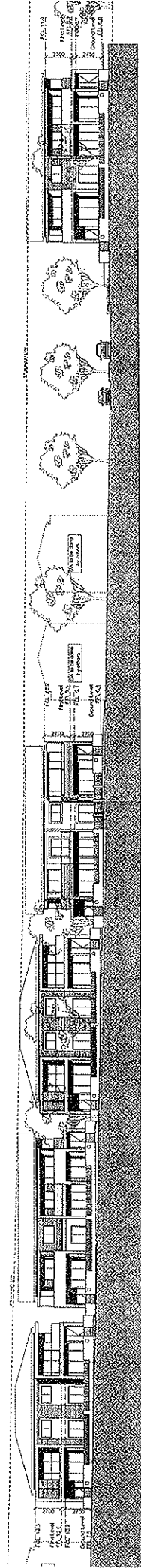
NOTE: Council may be prepared to consider an extension of this Consent period for a further 12 months, however, the request for extension would have to be received during the initial 2 year period.

8. To ascertain the date upon which the determination becomes effective, refer to Section 83 of the Environmental Planning and Assessment Act, 1979 (as amended).
9. If you are dissatisfied with this decision, Section 97 of the Environmental Planning and Assessment Act, 1979, gives you a right of appeal to the Land and Environment Court within 12 months of the date of endorsement of this Consent.
10. You are reminded of your obligations under the objectives of the Disability Discrimination Act (DDA)1992.

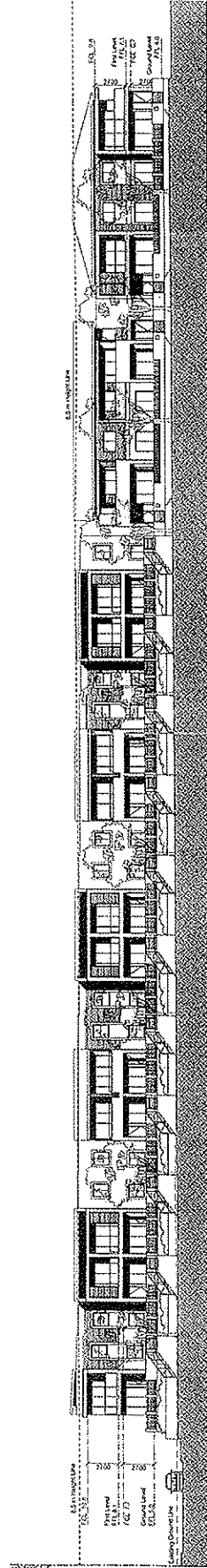




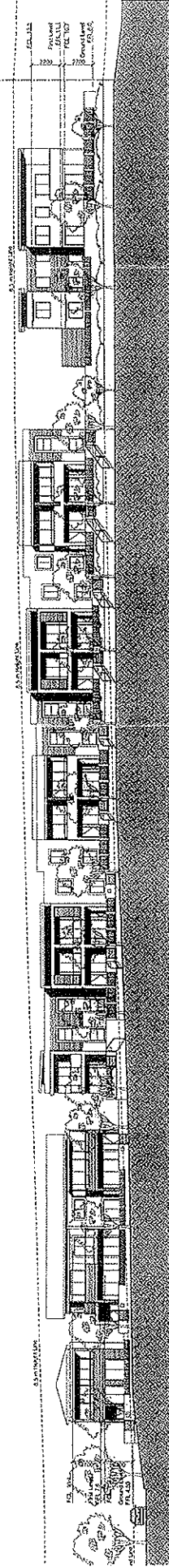
1 North Elevation (Macpherson Street - East)



2 North Elevation (Macpherson Street - West)

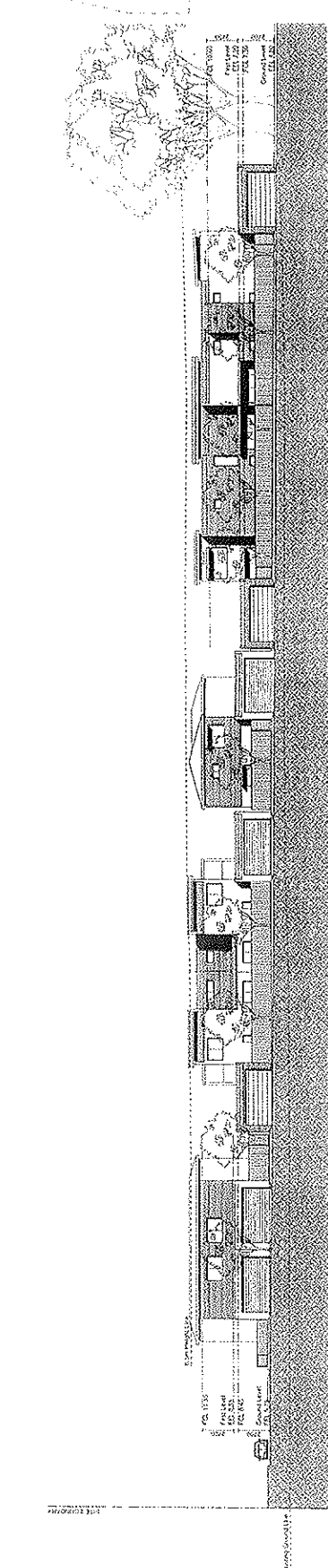
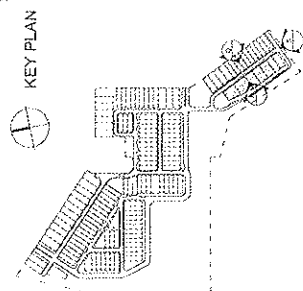


3 East Elevation (Boondah Road - South)

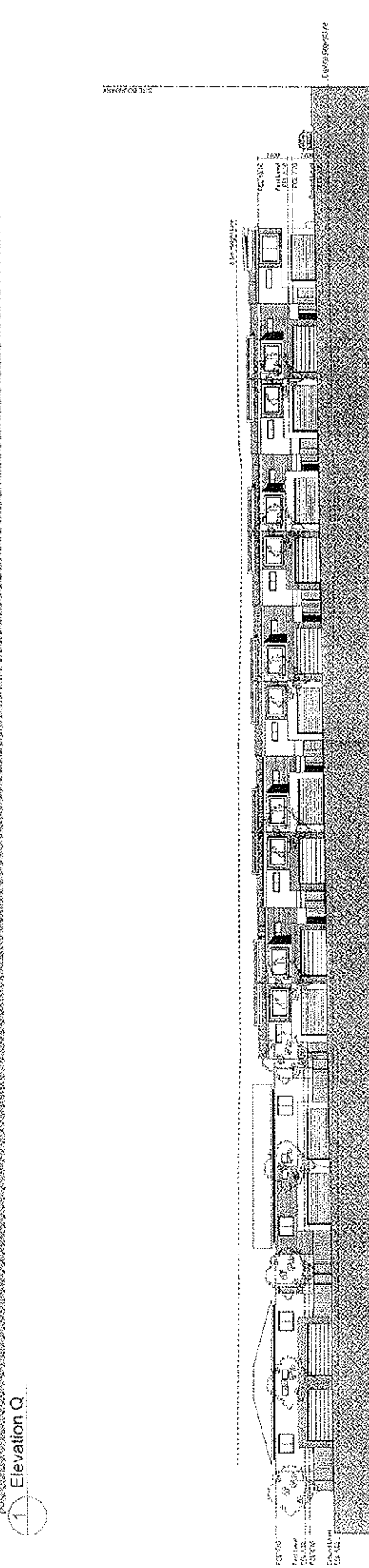


4 East Elevation (Boondah Road - North)

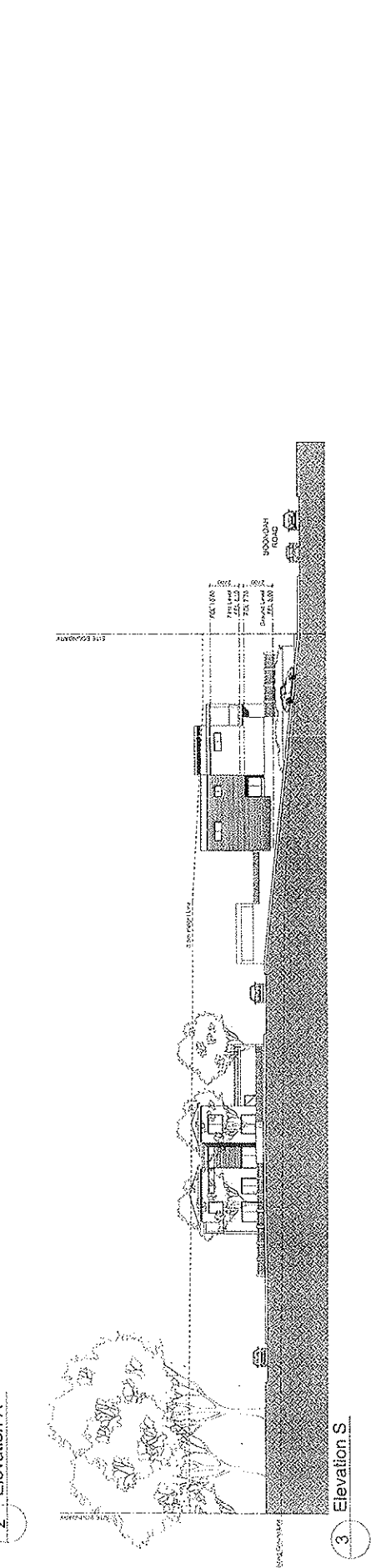
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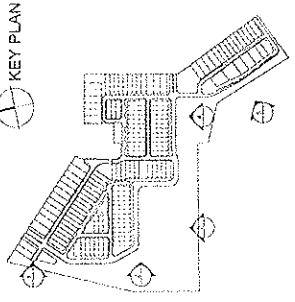
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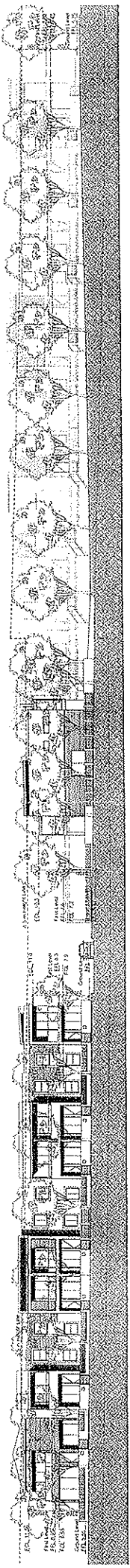
3 Elevation S

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IT IS NOT TO BE REPRODUCED, COPIED, OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, WITHOUT THE PRIOR WRITTEN PERMISSION OF ANTONIADES ARCHITECTS PTY LTD.</p> <p>A boundary delineation and bearings is to be provided by the client.</p>		<p><b>DEVELOPMENT APPLICATION</b></p>		<p><b>ANTONIADES ARCHITECTS</b></p> <p>Level 1, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48, 50, 52, 54, 56, 58, 60, 62, 64, 66, 68, 70, 72, 74, 76, 78, 80, 82, 84, 86, 88, 90, 92, 94, 96, 98, 100, 102, 104, 106, 108, 110, 112, 114, 116, 118, 120, 122, 124, 126, 128, 130, 132, 134, 136, 138, 140, 142, 144, 146, 148, 150, 152, 154, 156, 158, 160, 162, 164, 166, 168, 170, 172, 174, 176, 178, 180, 182, 184, 186, 188, 190, 192, 194, 196, 198, 200, 202, 204, 206, 208, 210, 212, 214, 216, 218, 220, 222, 224, 226, 228, 230, 232, 234, 236, 238, 240, 242, 244, 246, 248, 250, 252, 254, 256, 258, 260, 262, 264, 266, 268, 270, 272, 274, 276, 278, 280, 282, 284, 286, 288, 290, 292, 294, 296, 298, 300, 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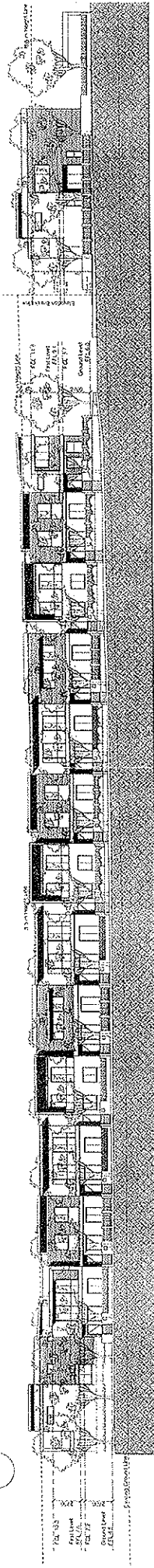




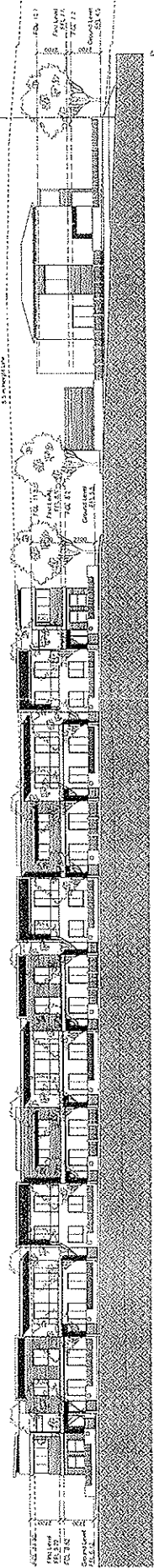
1 West Elevation (North)



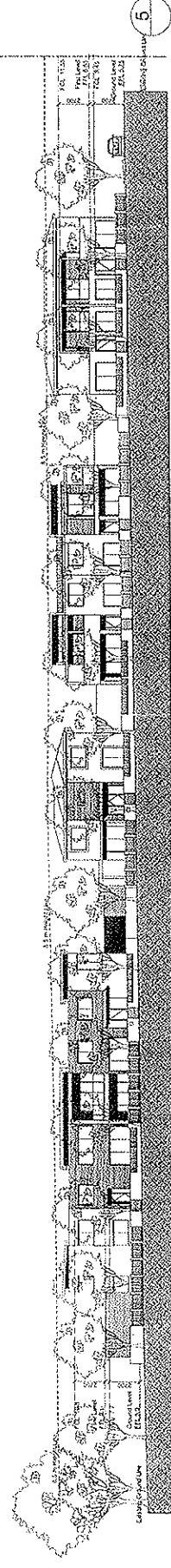
2 West Elevation (South)



3 South Elevation (West)



4 South Elevation (East)



5 South West Elevation

DEVELOPMENT  
APPLICATION[illegible]

ANTONIADES ARCHITECTS

**Warriewood**  
Macpherson Street, Warriewood  
Meriton Apartments Pty Ltd  
DRAWING TITLE  
**Site Elevations**

REC	REVISION DESCRIPTION	CHK	APPROV	DATE
A	Issued for Information	AA	AA	22-09-06
B	Issued for Information	AA	AA	23-09-06
C	Issued for Information	AA	AA	23-10-06
D	Issued for Information	AA	AA	23-10-06
E	Issued for General Auditors	AA	AA	23-10-06
F	Revised Comments Issued	AA	AA	17-01-10

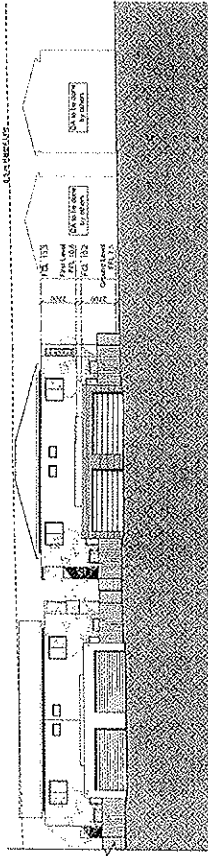
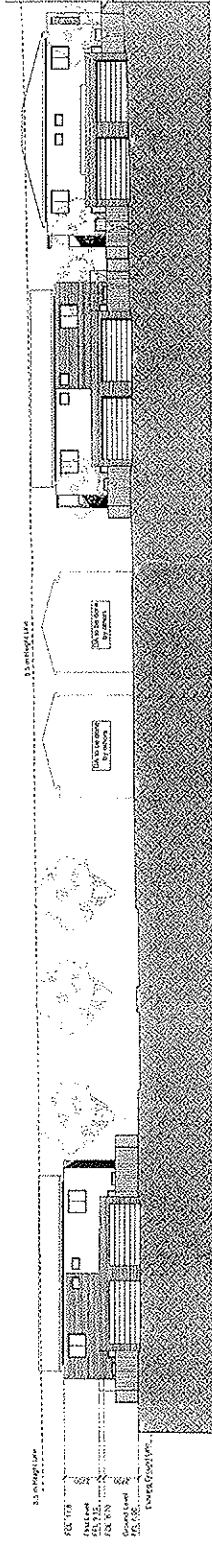
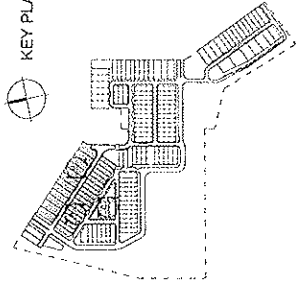
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DATE 11/22/2019

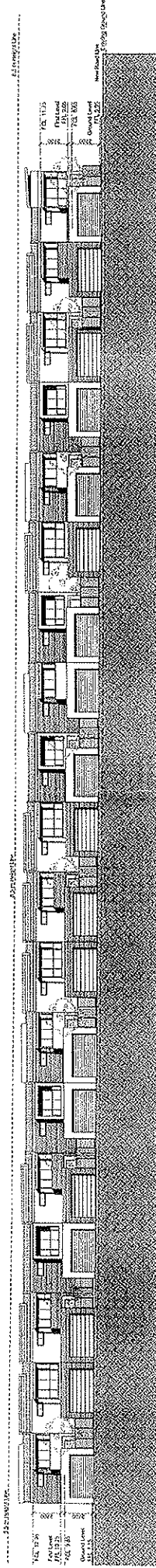
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AA MPN 0802		APPROVED BY	F
DA 5.01		NO. 10000	

DA 5.01

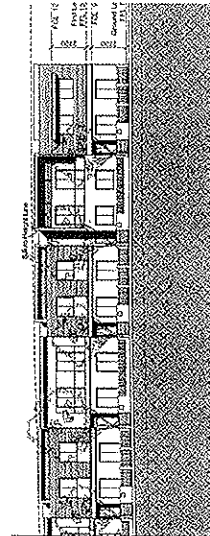
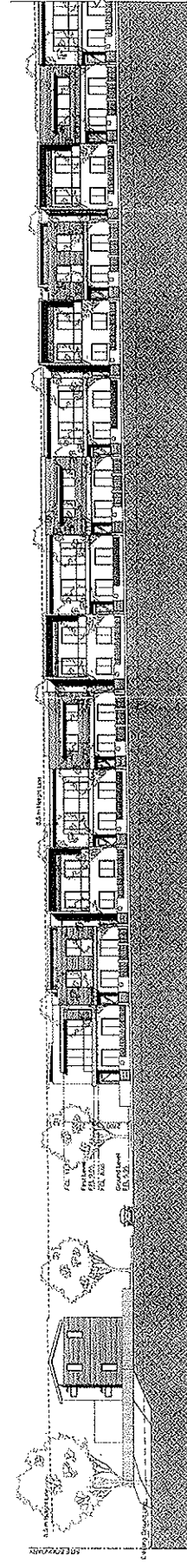




1 Elevation A



2 Elevation B



3) Elevation C

## ANTONIADES ARCHITECTS \*\*\*

Suite 1, L2, 24 Bay St, Double Day Plaza 2000  
Tel: 9229 1339 Fax: 9229 3009  
www.pacificall.com.hk ACN 129 751 553

Macpherson Street, Warriewood  
Meriton Apartments Pty Ltd

Internal Street Elevations  
Elevation A, B, C

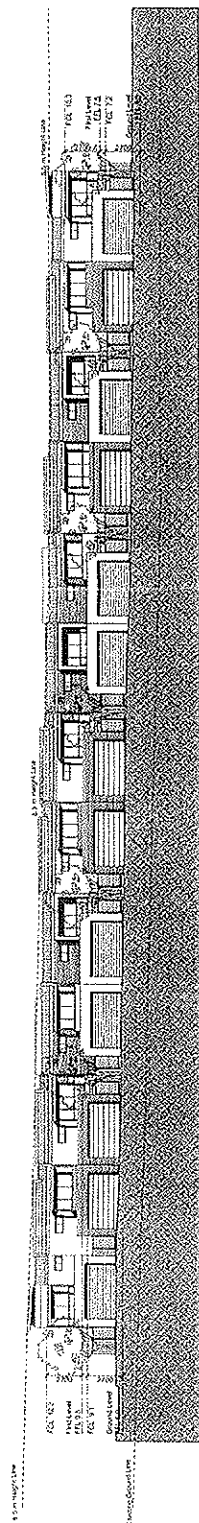
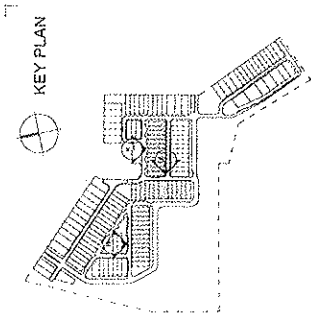
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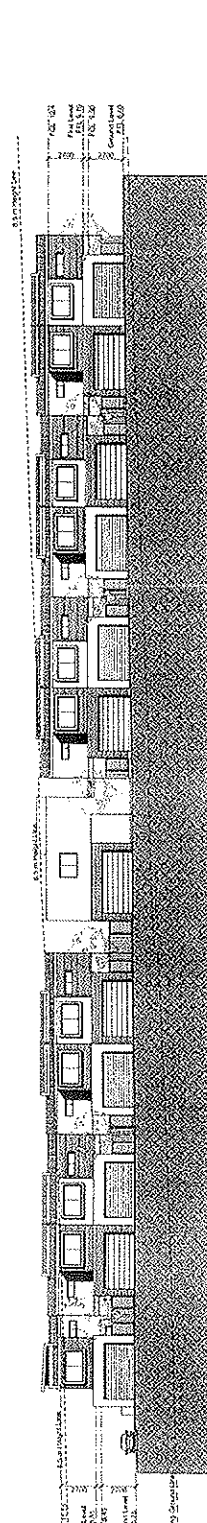
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DA 5.02

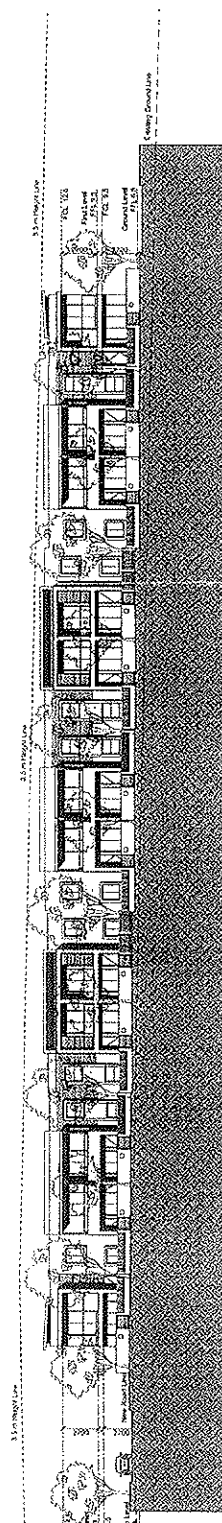
[illegible]



1 Elevation H



2 Elevation J



3 Elevation K

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It is not intended to be used as a basis for construction.</p> <p>All boundary dimensions and bearings to be referred to by the surveyor and not by this document.</p>		<p>DEVELOPMENT APPLICATION</p>		<p>ANTONIAADES ARCHITECTS</p> <p>10/11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000, 1001, 1002, 1003, 1004, 1005, 1006, 1007, 1008, 1009, 1010, 1011, 1012, 1013, 1014, 1015, 1016, 1017, 1018, 1019, 1020, 1021, 1022, 1023, 1024, 1025, 1026, 1027, 1028, 1029, 1030, 1031, 1032, 1033, 1034, 1035, 1036, 1037, 1038, 1039, 1040, 1041, 1042, 1043, 1044, 1045, 1046, 1047, 1048, 1049, 1050, 1051, 1052, 1053, 1054, 1055, 1056, 1057, 1058, 1059, 1060, 1061, 1062, 1063, 1064, 1065, 1066, 1067, 1068, 1069, 1070, 1071, 1072, 1073, 1074, 1075, 1076, 1077, 1078, 1079, 1080, 1081, 1082, 1083, 1084, 1085, 1086, 1087, 1088, 1089, 1090, 1091, 1092, 1093, 1094, 1095, 1096, 1097, 1098, 1099, 1100, 1101, 1102, 1103, 1104, 1105, 1106, 1107, 1108, 1109, 1110, 1111, 1112, 1113, 1114, 1115, 1116, 1117, 1118, 1119, 1120, 1121, 1122, 1123, 1124, 1125, 1126, 1127, 1128, 1129, 1130, 1131, 1132, 1133, 1134, 1135, 1136, 1137, 1138, 1139, 1140, 1141, 1142, 1143, 1144, 1145, 1146, 1147, 1148, 1149, 1150, 1151, 1152, 1153, 1154, 1155, 1156, 1157, 1158, 1159, 1160, 1161, 1162, 1163, 1164, 1165, 1166, 1167, 1168, 1169, 1170, 1171, 1172, 1173, 1174, 1175, 1176, 1177, 1178, 1179, 1180, 1181, 1182, 1183, 1184, 1185, 1186, 1187, 1188, 1189, 1190, 1191, 1192, 1193, 1194, 1195, 1196, 1197, 1198, 1199, 1200, 1201, 1202, 1203, 1204, 1205, 1206, 1207, 1208, 1209, 1210, 1211, 1212, 1213, 1214, 1215, 1216, 1217, 1218, 1219, 1220, 1221, 1222, 1223, 1224, 1225, 1226, 1227, 1228, 1229, 1230, 1231, 1232, 1233, 1234, 1235, 1236, 1237, 1238, 1239, 1240, 1241, 1242, 1243, 1244, 1245, 1246, 1247, 1248, 1249, 1250, 1251, 1252, 1253, 1254, 1255, 1256, 1257, 1258, 1259, 1260, 1261, 1262, 1263, 1264, 1265, 1266, 1267, 1268, 1269, 1270, 1271, 1272, 1273, 1274, 1275, 1276, 1277, 1278, 1279, 1280, 1281, 1282, 1283, 1284, 1285, 1286, 1287, 1288, 1289, 1290, 1291, 1292, 1293, 1294, 1295, 1296, 1297, 1298, 1299, 1300, 1301, 1302, 1303, 1304, 1305, 1306, 1307, 1308, 1309, 1310, 1311, 1312, 1313, 1314, 1315, 1316, 1317, 1318, 1319, 1320, 1321, 1322, 1323, 1324, 1325, 1326, 1327, 1328, 1329, 1330, 1331, 1332, 1333, 1334, 1335, 1336, 1337, 1338, 1339, 1340, 1341, 1342, 1343, 1344, 1345, 1346, 1347, 1348, 1349, 1350, 1351, 1352, 1353, 1354, 1355, 1356, 1357, 1358, 1359, 1360, 1361, 1362, 1363, 1364, 1365, 1366, 1367, 1368, 1369, 1370, 1371, 1372, 1373, 1374, 1375, 1376, 1377, 1378, 1379, 1380, 1381, 1382, 1383, 1384, 1385, 1386, 1387, 1388, 1389, 1390, 1391, 1392, 1393, 1394, 1395, 1396, 1397, 1398, 1399, 1400, 1401, 1402, 1403, 1404, 1405, 1406, 1407, 1408, 1409, 1410, 1411, 1412, 1413, 1414, 1415, 1416, 1417, 1418, 1419, 1420, 1421, 1422, 1423, 1424, 1425, 1426, 1427, 1428, 1429, 1430, 1431, 1432, 1433, 1434, 1435, 1436, 1437, 1438, 1439, 1440, 1441, 1442, 1443, 1444, 1445, 1446, 1447, 1448, 1449, 1450, 1451, 1452, 1453, 1454, 1455, 1456, 1457, 1458, 1459, 1460, 1461, 1462, 1463, 1464, 1465, 1466, 1467, 1468, 1469, 1470, 1471, 1472, 1473, 1474, 1475, 1476, 1477, 1478, 1479, 1480, 1481, 1482, 1483, 1484, 1485, 1486, 1487, 1488, 1489, 1490, 1491, 1492, 1493, 1494, 1495, 1496, 1497, 1498, 1499, 1500, 1501, 1502, 1503, 1504, 1505, 1506, 1507, 1508, 1509, 1510, 1511, 1512, 1513, 1514, 1515, 1516, 1517, 1518, 1519, 1520, 1521, 1522, 1523, 1524, 1525, 1526, 1527, 1528, 1529, 1530, 1531, 1532, 1533, 1534, 1535, 1536, 1537, 1538, 1539, 1540, 1541, 1542, 1543, 1544, 1545, 1546, 1547, 1548, 1549, 1550, 1551, 1552, 1553, 1554, 1555, 1556, 1557, 1558, 1559, 1560, 1561, 1562, 1563, 1564, 1565, 1566, 1567, 1568, 1569, 1570, 1571, 1572, 1573, 1574, 1575, 1576, 1577, 1578, 1579, 1580, 1581, 1582, 1583, 1584, 1585, 1586, 1587, 1588, 1589, 1590, 1591, 1592, 1593, 1594, 1595, 1596, 1597, 1598, 1599, 1600, 1601, 1602, 1603, 1604, 1605, 1606, 1607, 1608, 1609, 1610, 1611, 1612, 1613, 1614, 1615, 1616, 1617, 1618, 1619, 1620, 1621, 1622, 1623, 1624, 1625, 1626, 1627, 1628, 1629, 1630, 1631, 1632, 1633, 1634, 1635, 1636, 1637, 1638, 1639, 1640, 1641, 1642, 1643, 1644, 1645, 1646, 1647, 1648, 1649, 1650, 1651, 1652, 1653, 1654, 1655, 1656, 1657, 1658, 1659, 1660, 1661, 1662, 1663, 1664, 1665, 1666, 1667, 1668, 1669, 1670, 1671, 1672, 1673, 1674, 1675, 1676, 1677, 1678, 1679, 1680, 1681, 1682, 1683, 1684, 1685, 1686, 1687, 1688, 1689, 1690, 1691, 1692, 1693, 1694, 1695, 1696, 1697, 1698, 1699, 1700, 1701, 1702, 1703, 1704, 1705, 1706, 1707, 1708, 1709, 1710, 1711, 1712, 1713, 1714, 1715, 1716, 1717, 1718, 1719, 1720, 1721, 1722, 1723, 1724, 1725, 1726, 1727, 1728, 1729, 1730, 1731, 1732, 1733, 1734, 1735, 1736, 1737, 1738, 1739, 1740, 1741, 1742, 1743, 1744, 1745, 1746, 1747, 1748, 1749, 1750, 1751, 1752, 1753, 1754, 1755, 1756, 1757, 1758, 1759, 1760, 1761, 1762, 1763, 1764, 1765, 1766, 1767, 1768, 1769, 1770, 1771, 1772, 1773, 1774, 1775, 1776, 1777, 1778, 1779, 1780, 1781, 1782, 1783, 1784, 1785, 1786, 1787, 1788, 1789, 1790, 1791, 1792, 1793, 1794, 1795, 1796, 1797, 1798, 1799, 1800, 1801, 1802, 1803, 1804, 1805, 1806, 1807, 1808, 1809, 1810, 1811, 1812, 1813, 1814, 1815, 1816, 1817, 1818, 1819, 1820, 1821, 1822, 1823, 1824, 1825, 1826, 1827, 1828, 1829, 1830, 1831, 1832, 1833, 1834, 1835, 1836, 1837, 1838, 1839, 1840, 1841, 1842, 1843, 1844, 1845, 1846, 1847, 1848, 1849, 1850, 1851, 1852, 1853, 1854, 1855, 1856, 1857, 1858, 1859, 1860, 1861, 1862, 1863, 1864, 1865, 1866, 1867, 1868, 1869, 1870, 1871, 1872, 1873, 1874, 1875, 1876, 1877, 1878, 1879, 1880, 1881, 1882, 1883, 1884, 1885, 1886, 1887, 1888, 1889, 1890, 1891, 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900, 1901, 1902, 1903, 1904, 1905, 1906, 1907, 1908, 1909, 1910, 1911, 1912, 1913, 1914, 1915, 1916, 1917, 1918, 1919, 1920, 1921, 1922, 1923, 1924, 1925, 1926, 1927, 1928, 1929, 1930, 1931, 1932, 1933, 1934, 1935, 1936, 1937, 1938, 1939, 1940, 1941, 1942, 1943, 1944, 1945, 1946, 1947, 1948, 1949, 1950, 1951, 1952, 1953, 1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, </p>
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## **APPENDIX 3 ENVIRONMENTAL ASSESSMENT (AS EXHIBITED)**

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See attached CD and the Department's website at <http://majorprojects.planning.nsw.gov.au>

## **APPENDIX 4     PROPONENT'S RESPONSE TO SUBMISSIONS**

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See attached CD and the Department's website at <http://majorprojects.planning.nsw.gov.au>





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# **Warriewood Valley Strategic Review**

**Report prepared for the Department of Planning**

**August 2010**



**WorleyParsons**

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## CONTENTS

1.	INTRODUCTION AND BRIEF .....	1
1.1	Background.....	1
1.2	Scope and approach of this review.....	1
1.3	Structure of this review .....	3
1.4	Reference documents.....	3
1.5	Acknowledgement.....	5
1.6	Declaration of Interest.....	5
2.	WARRIEWOOD VALLEY AND ITS CONTEXT .....	5
2.1	Location.....	5
2.2	Topography, drainage and natural visual character.....	5
2.3	Land use and development character.....	6
2.4	Local street network and public transport.....	9
2.5	Land-use planning for Warriewood Valley.....	11
2.6	Definition of buffer areas .....	17
2.7	Note about dwelling density in Warriewood Valley and implications for the buffer areas.....	17
3.	FLOODING AND WATER MANAGEMENT IN WARRIEWOOD VALLEY .....	18
4.	STRATEGIC CONTEXT FOR WARRIEWOOD VALLEY .....	19
4.1	Sub-Regional Strategy.....	19
4.2	Metropolitan Development Program (MDP).....	20
5.	SUMMARY OF PROPOSALS AT 14-18 BOONDAH ROAD.....	20
6.	PRINCIPLES FOR CONSIDERING HIGHER DENSITY DEVELOPMENT.....	23
6.1	Site, location, utility services and housing outcomes.....	23
6.2	Flooding and water management.....	23
6.3	Building height and visual context.....	24
6.4	Building separation .....	24
6.5	Site cover/ deep soil planting .....	24
6.6	Building setback from creekline corridors .....	24
6.7	Overshadowing of creekline corridors .....	24
6.8	Traffic and transport.....	24
7.	SUITABILITY OF REMAINING BUFFER AREAS FOR HIGHER DENSITY DEVELOPMENT .....	25
7.1	Review of environmental constraints across buffer areas .....	25
7.2	Physical suitability – land capability, etc .....	26





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7.3	Locational suitability .....	29
7.4	Visual analysis.....	29
7.5	Possible servicing ramifications of higher density development in buffer areas .....	30
7.6	Other planning issues .....	32
7.7	Information for consultation with the Roads and Traffic Authority on local and regional traffic implications.....	33
8.	CONCLUSIONS.....	34

## FIGURES

Figure 1 – Warriewood Valley in its local context.....	2
Figure 2 – Warriewood Valley development sectors around the STP .....	2
Figure 3 – Aerial of buffer areas around Warriewood STP.....	3
Figure 4 – 3 storey residential buildings in Warriewood Brook Seniors Housing project.....	6
Figure 5 – 3 storey residential buildings in Warriewood Brook.....	7
Figure 6 – Semi-rural character of undeveloped land in Warriewood Valley.....	7
Figure 7 – The southern buffer area and open space areas .....	8
Figure 8 – The southern buffer area and Land Ownerships.....	9
Figure 9 – Road and street network serving Warriewood Valley.....	10
Figure 10 – Bus travelling along Macpherson Street.....	10
Figure 11 – Land capability, Warriewood Valley Buffer Areas.....	12
Figure 12 – Fauna Conservation Map, Warriewood Valley Buffer Areas.....	13
Figure 13 – Vegetation Conservation Map, Warriewood Valley Buffer Areas.....	14
Figure 14 – Visual Assessment Map, Warriewood Valley Buffer Areas.....	15
Figure 15 – Composite Development Capability Map, Warriewood Valley Buffer Areas .....	16
Figure 16 – Change to definition of development sectors in South-east corner of Release Area.....	17
Figure 17 – Aerial of the 14-18 Boondah Road Site .....	21
Figure 18 – Aerial of the 14-18 Boondah Road site and adjoining properties.....	21
Figure 19 – Concept plan for 14-18 Boondah Road.....	22
Figure 20 – North south sections through proposed development 14-18 Boondah Road.....	22
Figure 21 – Composite development Capability map for Warriewood valley (2010).....	26
Figure 22 – Sections through Buffer Area 1 with example of 3-5 storey buildings .....	30

## TABLES

Table 1 – Development capacity of Buffer Areas (1997 and 2010).....	18
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Table 2 – Buffer Areas and approximate frontage of property ownerships.....	28
Table 3 – Capacity of buffer areas for servicing assessment.....	31
Table 4 – Potential development for Buffer Areas 1-3 at density equivalent to 14-18 Boondah Rd proposal .....	33
Table 5 – Potential development in other undeveloped sectors .....	34
Table 6 – Potential dwelling mix for Buffer Areas 1-3 for traffic assessment.....	34

## Confidentiality

*This document has been prepared for the sole purpose of providing advice to the Department of Planning on a Strategic Review of the development capacity of parts of the Warriewood Valley.*

*It is expected that this document and its contents, including work scope, methodology and findings will be treated in strict confidence by the Department of Planning.*



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## **1. INTRODUCTION AND BRIEF**

### **1.1 Background**

WorleyParsons was commissioned by the Department of Planning to undertake a strategic review of the development capacity of the three "buffer areas" in the Warriewood Valley. The buffer areas were identified with reference to "buffer" land around the Warriewood Sewage Treatment Plant (STP) which is located on the corner of Warriewood Road and Boondah Road, Warriewood. See Figure 1, Figure 2 and Figure 3 for locational details and the nature of the land.

The need for a strategic review of the development capacity of the buffer areas has emerged partly as a result of a Part 3A Concept Plan Application and Environmental Assessment for land at 14-18 Boondah Road, Warriewood, and partly in recognition that higher densities of development may be appropriate within the buffer areas.

The aim of the review is to enable an equitable outcome for all landowners, having regard to the environmental and infrastructure constraints that have been identified within the Warriewood Valley.

Pittwater Council has recently prepared a review of the development capacity of the Warriewood Valley, based largely around its long-standing view of maximum development density in the area. The Council's 2010 Warriewood Valley Planning Framework is based on the original 1997 Planning Framework for the Valley, and a 2001 Strategic Framework for the STP buffer areas. The 1997 strategy identified development capacity as around 1,500 dwellings. The land surrounding the Warriewood STP (Buffer Areas 1, 2 and 3) was rezoned for residential purposes in 2006 following Sydney Water's decision to cap the STP. The STP Buffer Sector Draft Planning Framework prepared for this land increased the residential development potential of Warriewood Valley to 1,886 dwellings. The most recent Framework (adopted in May, 2010) envisages a minor increase in the total number of dwellings within Warriewood from 1,886 to 2,012.

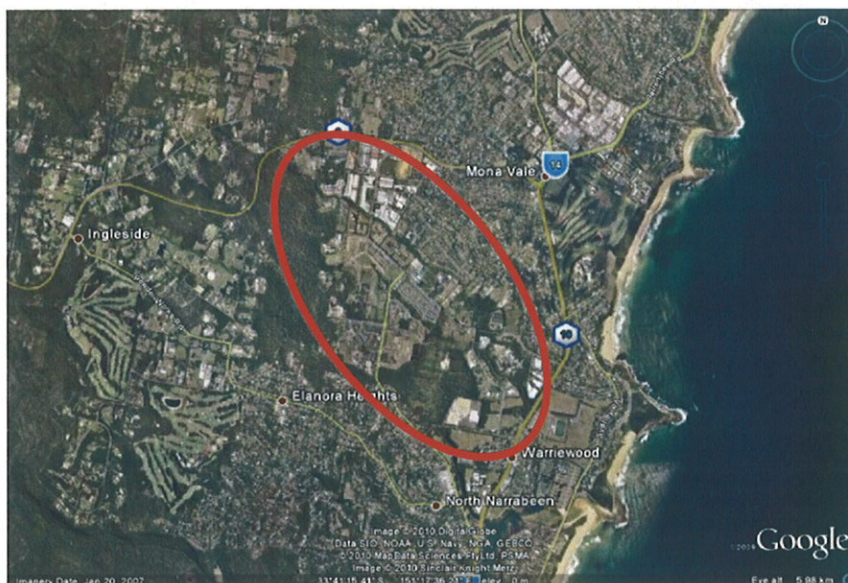
### **1.2 Scope and approach of this review**

The scope and approach taken for this review comprises:

- Review of the environmental constraints across the three buffer areas, identified in the draft Warriewood Valley Planning Framework 2010, and any updates, or additional material that might be identified in the Part 3A application documents for 14-18 Boondah Road;
- Assessment of the implications of the proposals for 14-18 Boondah Road, and possible replication on Buffer Areas 1, 2 and 3 on flooding and sea level rise;
- Consideration of the impacts of scale and form of the proposed density in visual and locational terms;
- Testing the suitability of the proposed development density (proposed at 75 dwellings per hectare on 14-18 Boondah Road) across all developable land in the Buffer Areas (excluding the retirement village), having regard for the current level of access to services and expected future access to services in this location;
- Providing the Department of Planning with sufficient development information to enable consultation with the Roads and Traffic Authority on local and regional traffic implications likely to arise from the total combined development within the buffer areas and other developable areas, described above.

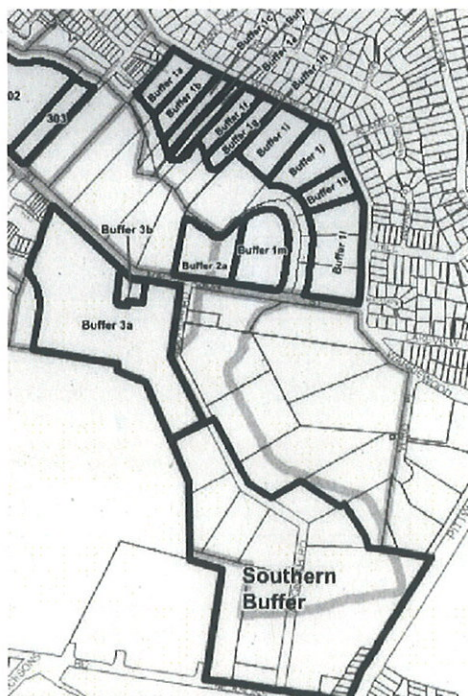


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**FIGURE 1 – WARRIEWOOD VALLEY IN ITS LOCAL CONTEXT**

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**FIGURE 2 – WARRIEWOOD VALLEY DEVELOPMENT SECTORS AROUND THE STP**





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**FIGURE 3 – AERIAL OF BUFFER AREAS AROUND WARRIEWOOD STP**

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### **1.3 Structure of this review**

**Section 1** of this report outlines the background and scope of the review.

**Section 2** provides a description of the Warriewood Valley and its context, including a summary of constraints and opportunities identified in planning for the development of this area. It also outlines the current development status of the Valley in terms of the land yet to be developed.

**Section 3** outlines the water management strategy for Warriewood Valley which addresses flooding and sea level rise, and has been reflected in the land use planning framework for the area.

**Section 4** provides an outline of the strategic context of the Warriewood Valley under the sub-regional strategy for the Sydney North sub-region, and the latest Metropolitan Development Program (MDP) for 2008/09-2011/2012, and its implications for the buffer areas.

**Section 5** provides a summary of the proposals on 14-18 Boondah Road, and images illustrating the character of the site, and the development proposals.

**Section 6** outlines the principles that should be associated with any consideration of increasing the density of development within the three buffer areas.

**Section 7** contains an overview of the character of the remaining buffer areas that are the specific focus of this review, and considers the implications of increased density.

**Section 8** comprises the conclusions and recommendations.

### **1.4 Reference documents**

For the planning and urban design assessment the following documents have been reviewed:

- *Warriewood Valley Planning Framework 2010*, Pittwater Council 2010;
- Part 3A *Environmental Assessment* Report and supporting Appendices for 14-18 Boondah Road, Warriewood, prepared by Architectus



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- *Section 94 Contributions Plan* for Warriewood Valley
- *Pittwater Development Control Plan No 21*, Pittwater Council
- *Warriewood Valley Landscape Masterplan and Design Guidelines*, Pittwater Council, October 2007
- *Warriewood Valley Roads Master Plan*, prepared by Masson Wilson Twiney, March 2006
- *STP Buffer Sector Draft Planning Framework 2001*, Pittwater Council
- *Open Space Bushland and Recreation Strategy Pittwater LGA*, prepared by Heather Nesbitt and Parkland Environmental Planners for Pittwater Council, March 2000
- *Draft Warriewood Valley Urban Release Planning Framework*, Pittwater Council 1997
- *Ingleside-Warriewood Urban Land Release Draft Planning Strategy*, Pittwater Council 1995
- *Demographic and Facility-Service Needs Studies Ingleside-Warriewood Urban Release Area*, prepared for Pittwater Council
- *Warriewood Valley Section 94 Contributions Plan No 15 Amendment No.16*, adopted Pittwater Council September 2008
- *Metropolitan Development Program 2008/09-2012/13*, Department of Planning
- *Basic Community Profile and Extended Community Profile* for Pittwater LGA, 2006 Census, ABS
- *North-east Sub-Regional Strategy*, Department of Planning
- *Rent and Sales Report No 91* (Rent March Qtr 2010; Sales December Qtr 2009), Housing NSW

In preparing the flooding/ water management/ sea level rise and services component, a range of key documents have been reviewed including the following:

- "Warriewood Valley Flood Study", Cardno Lawson Treloar, April 2005
- "Warriewood Valley Flood Study Addendum #1", CLT July 2005
- "Warriewood Valley Urban Land Release Water Management Specification", Pittwater Council February 2001
- "NSW Floodplain Development Manual", NSW Gov. 2005
- "Draft Flood Risk Management Guide: Incorporating Sea Level Rise Benchmarks in Flood Risk Assessments", DECCW NSW October 2009
- "Floodplain Risk Management Guideline – Practical Considerations of Climate Change", DECCW NSW October 2007
- "Draft Warriewood Valley Planning Framework 2010", Pittwater Council 2010
- Letter titled "Key issues and Assessment Requirements – Concept Plan for Construction of Residential Development at 14-18 Boondah Road Warriewood (MP09\_0162)", Pittwater Council 18 December 2009;
- "Pittwater 21 DCP" Pittwater Council July 2009
- "Managing Flood Risks and Development in Pittwater" Pittwater Council, October 2006
- "14-18 Boondah Road, Warriewood Valley – Environmental Assessment Proposed Concept Plan and Stage 1 Project Application No. MP\_09)0162" Architectus on Behalf of Meriton March 2010
- "Director-General's Requirements: 14-18 Boondah Street, Warriewood (MP 09\_0162)" Sydney Water, 15 February 2010
- "Stomwater Management Plan Buffer Area 3 – Warriewood Valley" Brown Consulting October 2008 (for the 25d/ha proposal)
- "Stomwater and Environmental Management Plan Buffer Area 3 – Warriewood Valley" Brown Consulting February 2010 (for the 75d/ha proposal)





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- "Warriewood Valley Buffer Area 3 – Water Management Report Rezoning Application Stage" Patterson Britton & Partners August 2005
- "Integrated Water Management Strategy – Warriewood Valley" Lawson & Treloar November 1997;
- "Australian Runoff Quality – A Guide to Water Sensitive Urban Design" Engineers Australia
- "Australian Rainfall and Runoff – A Guide to Flood Estimation" Institution of Engineers, 1987

### 1.5 Acknowledgement

We would like to thank Pittwater Council for making available comprehensive background information for use in this review.

### 1.6 Declaration of Interest

We confirm that Patterson Britton & Partners (now part of WorleyParsons) was previously engaged by Meriton to produce a Water Management Report dated August 2005 in support of the proposed rezoning application for Buffer Area 3. Since that time we have had no involvement in relation to development on the subject site.

WorleyParsons has also recently (2008-2010) been involved in providing water management documentation in support of a development application by Abax Contracting at 61 Warriewood Road (part of Buffer Area 1).

Patterson Britton & Partners have also had extensive involvement in the water management aspects for many of the other Sectors throughout Warriewood Valley.

## 2. WARRIEWOOD VALLEY AND ITS CONTEXT

### 2.1 Location

Warriewood Valley is located within the Pittwater local government area (LGA) on the eastern seaboard of Sydney approximately 20 kilometres north-east of Sydney CBD. Its nearest centres are Mona Vale 1-2 kilometres to the east/north-east, and Dee Why/ Brookvale around 7-8 kilometres to the south.

The area has had a history of market gardens, plant nurseries and orchards, with redevelopment to urban purposes occurring in the past 2 decades.

Main road access is available from the south along Pittwater Road (which connects to Manly to the south) and from the west by Mona Vale Road which provides access to Gordon and Macquarie Park in the west. Buses traverse the Valley. The nearest rail line/ station is the North Shore line, with Gordon station located approximately 16 kilometres to the south-west.

### 2.2 Topography, drainage and natural visual character

Warriewood Valley is characterised by predominantly gently undulating topography rising up from the local drainage system (Fem Creek and Narrabeen Creek), to an escarpment located along its western side. The valley floor rises from a level of 0m at its lowest in the vicinity of the Warriewood Wetlands and Pittwater Road in the south-east through to about 20m, higher up the valley in the vicinity of Mona Vale Road in the north-west.

The escarpment begins to rise from the Valley floor from the 10m-30m contours, rising to about 80m before flattening out. It is well-vegetated in a band up to about 500-600m wide between Wesley Street in the south and Mona Vale Road in the north. It accommodates scattered dwellings in places, as well as the suburb of Elanora Heights along the south-western edge of the escarpment. It provides a distinctive vegetated backdrop to the valley.



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The creek system is well-vegetated, albeit with a mixture of native and exotic species. The creekline vegetation provides a local backdrop for the undulating land.

The drainage system discharges into the Warriewood Wetlands, located between Garden Street and the Centro Warriewood Shopping Centre, culminating with Narrabeen Lagoon, a further 1 kilometre downstream of the Warriewood Wetlands. The aerial photo at Figure 1 illustrates these features.

### **2.3 Land use and development character**

As Figure 1 also shows, Warriewood Valley is characterised by a mix of employment/ industrial/ retail uses at its northern end in close proximity to Mona Vale Road, and in the south-eastern corner adjacent to Pittwater Road. The south-eastern employment/ retail uses are relatively well screened from Pittwater Road by densely planted vegetation and a generous setback. The Mona Vale Road employment area features more recent development which is generally more bulky and more visible, but includes some architecturally striking buildings such as the Blackmores complex.

The majority of the land is developed for residential uses, including retirement accommodation at low to medium densities consistent with prevailing planning controls.

The character of the residential development reflects varying architectural styles commonplace in residential development over the past couple of decades.

The majority of the residential development to date has been 2 storeys. However, a recently approved retirement village along Macpherson Street (developed by Anglican Retirement Villages (ARV) and known as "Warriewood Brook") includes a series of 3 storey buildings in its initial stages (see Figure 4 and Figure 5). Furthermore, a residential development by Australand along Macpherson Street (Sector 11) to the west of Warriewood Brook comprises 2 storey semi-detached dwellings that are sited above street level, with the result that they have an overall height approaching 3 storeys above street level.



**FIGURE 4 – 3 STOREY RESIDENTIAL BUILDINGS IN WARRIEWOOD BROOK SENIORS HOUSING PROJECT**





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**FIGURE 5 – 3 STOREY RESIDENTIAL BUILDINGS IN WARRIEWOOD BROOK**

Where development has occurred along creeklines, restoration works have resulted in a significant level of planting with trees that appear to reach around 15 metres, providing important visual breaks between development parcels.

The overall impression of the residential elements of the valley is medium density development within a setting that features a high level of visual amenity.

Interspersed with the development areas are undeveloped parcels, comprising a mix of vacant land, horse agistment and market gardens/nurseries. These sites impart a semi-rural character see Figure 6.



**FIGURE 6 – SEMI-RURAL CHARACTER OF UNDEVELOPED LAND IN WARRIEWOOD VALLEY**

The Sydney Water Warriewood Sewage Treatment Plant is located on the corner of Warriewood Road and Macpherson Street in the south-east corner of the valley. It is surrounded by dense vegetation and is visually well screened from its surrounds.





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South of the STP is the area referred to as the "southern buffer area" is shown on Figure 7 (aerial photograph) and Figure 8 (ownership plan). At present this area accommodates a range of activities including the following:

- Council depot
- Private grazing land and low intensity rural industry
- Council open space areas and playing fields – generally grassed surfaces, and many with amenities blocks, lighting and parking areas
- Community centre and senior citizens' centre on Jacksons Road

The southern buffer area excludes the Warriewood Square shopping centre which is located immediately to the west.

The southern buffer area is served by the southern portion of Boondah Road, which connects to Jacksons Road and Pittwater Road. The land is very flat due to its proximity to the creeklines that traverse the area.

The ownership pattern on Figure 8 shows that a considerable amount of the land is in public ownership (Council and Department of Lands), with 4 parcels on Boondah Road in private ownership.



**FIGURE 7 – THE SOUTHERN BUFFER AREA AND OPEN SPACE AREAS**

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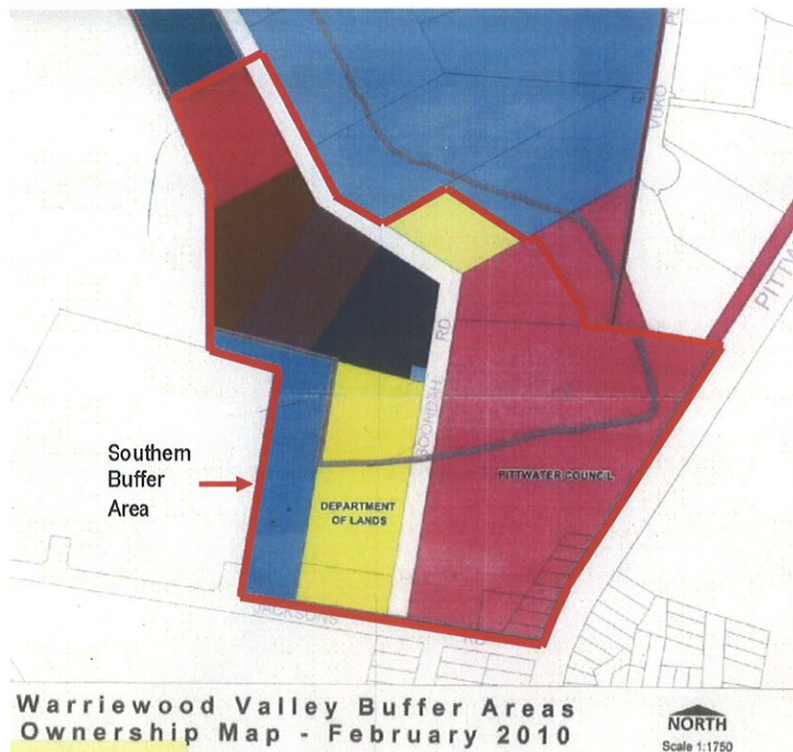


FIGURE 8 – THE SOUTHERN BUFFER AREA AND LAND OWNERSHIPS

Development surrounding the valley, such as that north/ north-east of Warriewood Road comprises predominantly low density housing with a mix of modest 1950s/ 60s cottages and more recent “knock down-rebuild” project homes. More recent low density suburban residential development has occurred to the south-west, in suburbs that include Elanora Heights and North Narrabeen.

Along Pittwater Road to the south of the valley is a stretch of highway retail and service activities. A district shopping centre (Centro Warriewood Square) is located along Jacksons Road, just to the west of Pittwater Road. District playing fields and recreation facilities are situated along Boondah Road between Jacksons Road and Macpherson Street, as well as major regional facilities at North Narrabeen to the east of Pittwater Road.

## 2.4 Local street network and public transport

The local street network is dominated by the external roads around Warriewood Valley consisting of Mona Vale Road to the north, Pittwater Road to the east, and Garden Street to the west and south-west.

Internally, Warriewood Valley is served by 3 key through roads, which connect with the surrounding main road network. These roads are (1) Ponderosa Parade/ Macpherson Street, (2) Warriewood Road and (3) Garden Street. Each of these roads is a 2 lane road.

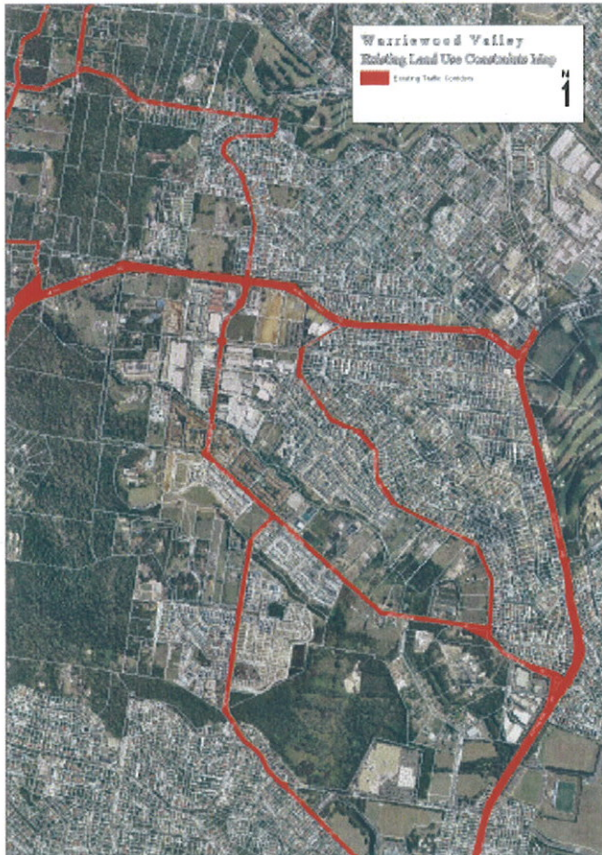
These roads are shown on the Council's plan of existing traffic corridors at Figure 9.





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**FIGURE 9 – ROAD AND STREET NETWORK SERVING WARRIEWOOD VALLEY**

Bus routes traversing the valley run via Ponderosa Parade, Macpherson Street (see Figure 10), Warriewood Road and Garden Street (and Jacksons Road). A Council-managed bus park and ride parking area is located on the eastern side of Pittwater Road, within the North Narrabeen Reserve sports area.



**FIGURE 10 – BUS TRAVELLING ALONG MACPHERSON STREET**



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## **2.5 Land-use planning for Warriewood Valley**

The planning for the Warriewood Valley by Pittwater Council since the 1990s has involved a sieve analysis of key site characteristics, constraints, and opportunities, outlined below. The original base documents for these studies were not available for review. The summary below is based on the Council's synopsis, which relies on the original studies and does not include any of the detail behind the conclusions.

- Land capability – assessing slope, soil structure, geotechnical conditions, and flooding. Land was classified according to its capacity to sustain urban development – with Class A having no physical limitations to development, to Class E where no form or urban development was recommended. The land capability map for the buffer areas is shown at Figure 11.
- Fauna conservation – this analysis identified fauna habitats of value, and graded the area from areas suitable for development (Class (a)) through to areas considered essential for retaining significant fauna populations (Class (e)) (see Figure 12). The majority of the buffer areas are identified as suitable for development with areas along Narrabeen Creek coinciding with the vegetated areas identified as important for fauna conservation.
- Vegetation conservation – this study identified a range of vegetation conservation conditions with Class 1 being areas suitable for residential and associated development, through to Class 5 which were identified as essential for retention to conserve significant vegetation characteristics. The vegetation along Narrabeen Creek within the buffer areas was identified as necessary for retention, and excluded from potential development areas (see Figure 13).
- Visual assessment – this aims to protect and enhance visual elements within the landscape that characterise the area, and contribute to its visual amenity. The buffer areas have a low visual rating, with the adjacent Warriewood Wetlands rated the highest area of visual interest (Figure 14 refers).
- Integrated water management – this assessed the flood conditions within the Valley in its pre-development condition, and modelled the impacts of development on flood behaviour. A flood management strategy including riparian corridors, stormwater detention ponds and water quality structures was identified for the Valley. More detail on flooding and water management is provided in Section 3.





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- Composite development capability – based on the details of the assessments above, a composite picture of development capacity for the Valley was identified (see Figure 15). It indicates that the majority of the buffer areas have a high development capability, with the exception of the flood affected land and vegetated areas along Narrabeen Creek and Fern Creek. The mapping suggests that the flood prone land incorporates the majority of the vegetated areas.

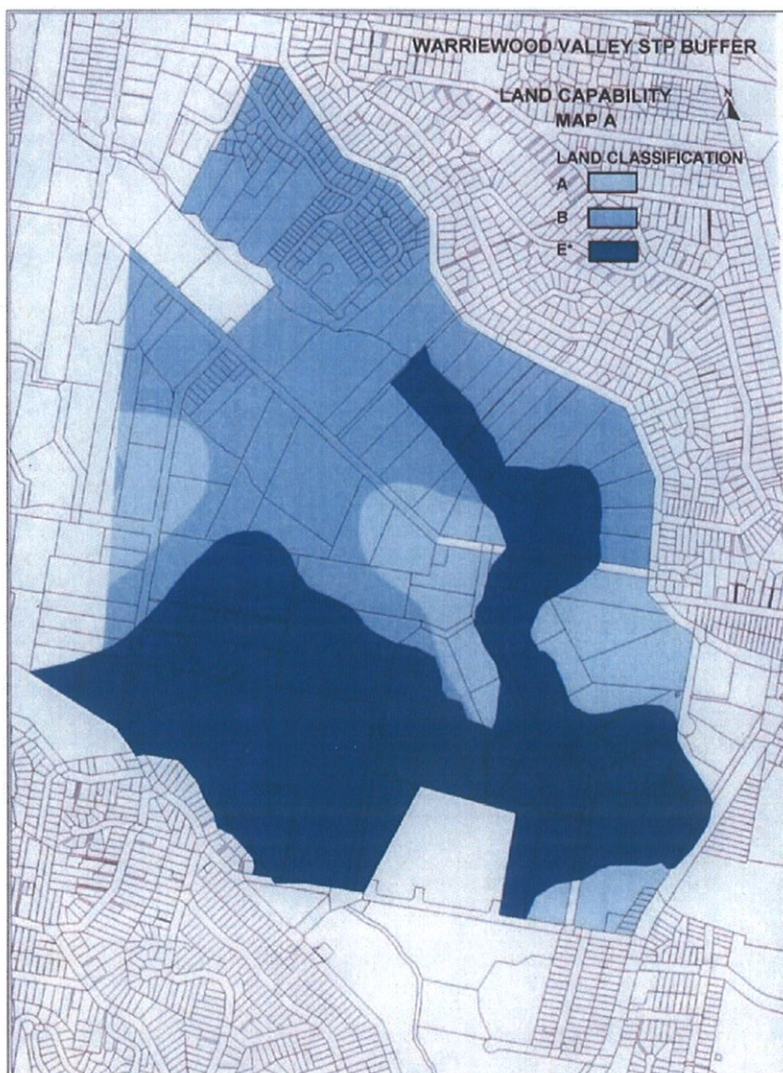


FIGURE 11 – LAND CAPABILITY, WARRIEWOOD VALLEY BUFFER AREAS



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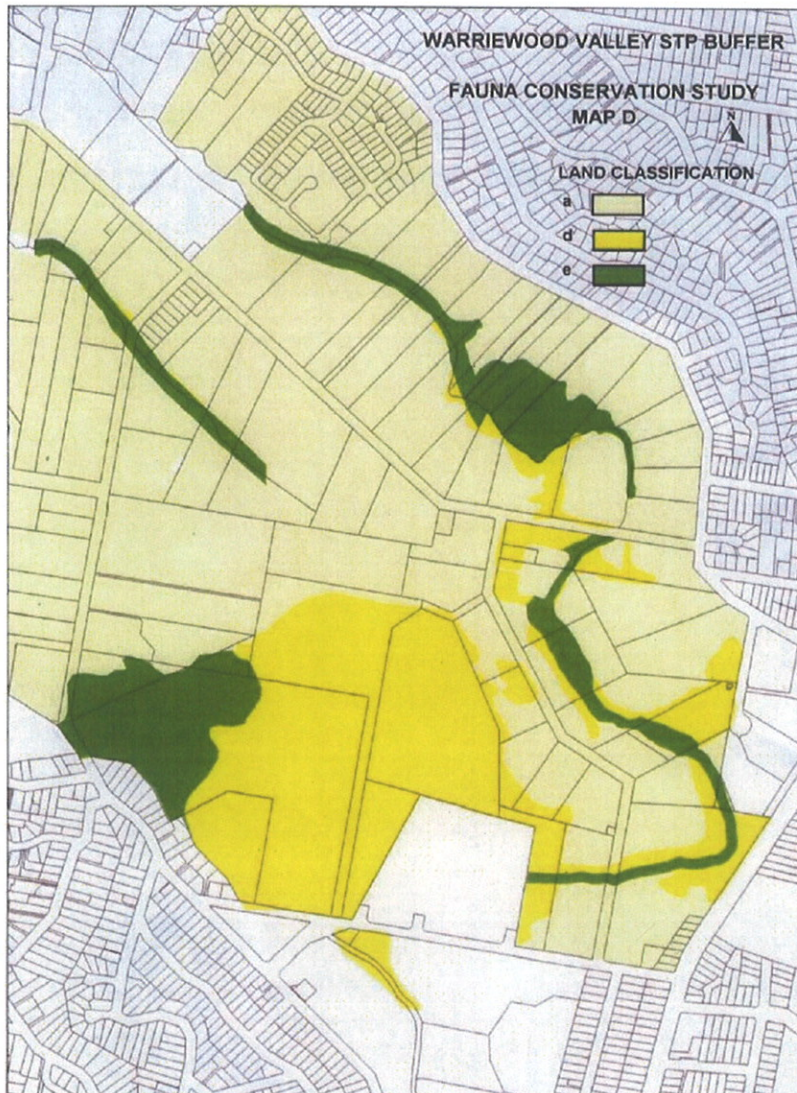


FIGURE 12 – FAUNA CONSERVATION MAP, WARRIEWOOD VALLEY BUFFER AREAS





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FIGURE 13 – VEGETATION CONSERVATION MAP, WARRIEWOOD VALLEY BUFFER AREAS



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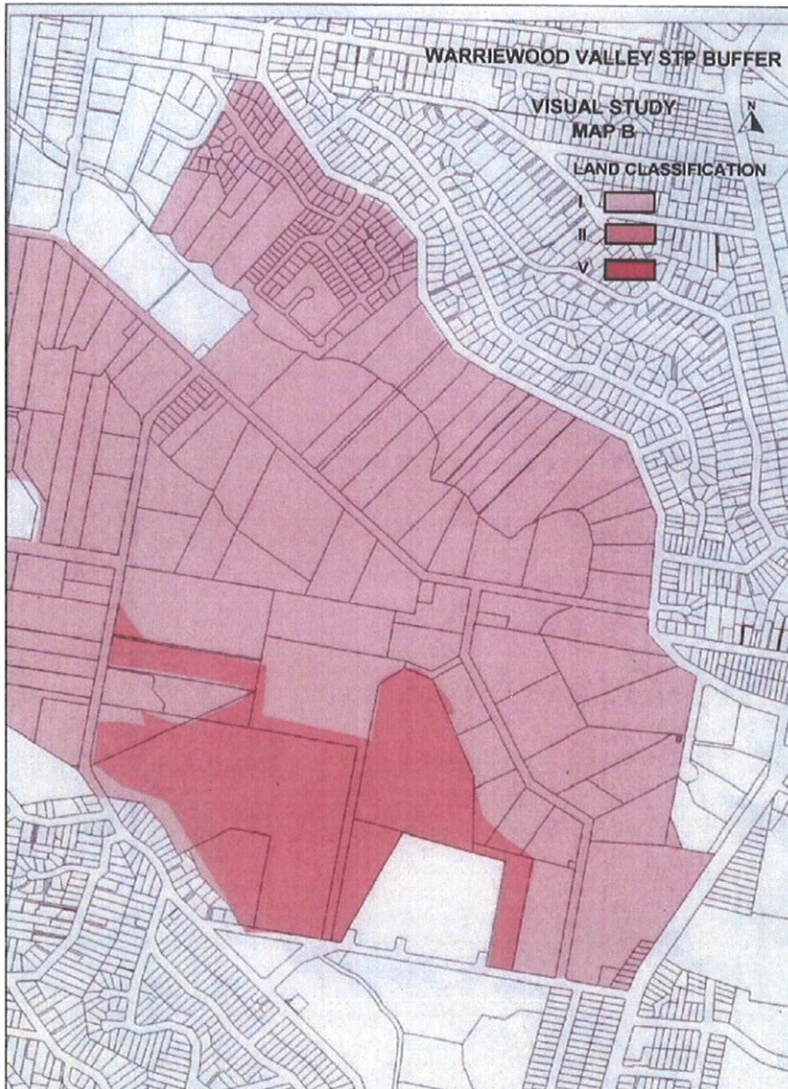


FIGURE 14 – VISUAL ASSESSMENT MAP, WARRIEWOOD VALLEY BUFFER AREAS