

**STEVENSON ASSOCIATES**

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**RYEFIELD, HACKNESS ROAD, SCALBY**

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FLOOD RISK ASSESSMENT and DRAINAGE STATEMENT



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# RYEFIELD, HACKNESS ROAD, SCALBY, SCARBOROUGH, YO13 0QY

## 1. INTRODUCTION

2. It is proposed to convert an existing detached house into three dwellings and within the grounds construct three additional dwellings in the form of one detached and a pair of semi-detached houses. This report has been commissioned to:
  - establish how the existing facilities are drained
  - determine how the new building should be drained
  - assess whether the site will be affected by flooding or cause others to flood.
3. This report should be read in conjunction with architectural details prepared by Malcolm Tempest Ltd.

## 4. LOCATION AND SITE DESCRIPTION

5. Scalby lies on the north west of Scarborough, approximately 2km from the town centre. The site lies on the west side of Hackness Road at approximate map reference TA 0850 0059.
6. The general area is typical rural village with open land to the west and north. There are three individual dwellings, quite distant, on the west, north and east sides of the property and to the south the site is separated from a major watercourse ('Sea Cut') by a narrow overgrown verge.



## 7. EXISTING TOPOGRAPHY

8. The site measures approximately 150 metres by 80 metres, covering an area of around 1.2 hectares. The existing house sits centrally on the site and is around 580 square metres in size.
9. The general area is undulating and the site itself falls from north to south from 45m to 38m (above Ordnance Datum) giving a nominal fall through the site of 1 in 25. The access with Hackness road is at a level of 40.20m and the site boundary on the west of the house is at a level of 44.50m (4.3m cross-fall across the site). The area around the house has been levelled to around 43.4m for ease of access and this results in an embankment some two metres in height on the south and east sides of the dwelling.
10. The house is served from a tarmac drive in the northern part of the site and the remaining area is laid out as garden.

## 11. EXISTING DRAINAGE

12. Foul water from Ryefield drains to a public combined foul / surface water sewer in Hackness Road, connecting at a manhole by the drive entrance. Also into this drain, there is at least one rainwater pipe connected.
13. All existing rainwater downpipes have blind connections, connecting directly to drains in the ground; there are neither gullies nor inspection chambers. It is believed that most of these surface water pipes drain towards the south either discharging into soakaways or to 'Sea Cut', albeit no outfalls into 'Sea Cut' can be seen in this location.
14. 'Sea Cut' was constructed in 1804 to divert flows from the headwaters of the River Derwent to the sea at Scalby Mills to try and alleviate flooding along the River Derwent. This drain is classified as a Main River.
15. In general, surface water from the west side of Scalby drains directly or indirectly to Church Beck, which runs along the east side of Hackness Road and discharges into 'Sea Cut'. Church Beck is classified as a Critical Ordinary Watercourse.





## 16. PROPOSALS AND RECOMMENDATIONS

17. It is proposed to convert the existing house (Ryefield House) into three dwellings and construct a detached house to the side of it, approximately 15 metres to the east. It is also proposed to construct a semi-detached pair of houses close to the site entrance on the north of the site; the two new blocks will cover areas of approximately 212 and 147 square metres respectively. It will also be necessary to widen the drive near to the access with Hackness Road to allow vehicles to pass, and extend the drive to accommodate the new dwellings.
18. A separate foul and surface water drainage system should be provided and only foul water should discharge to the public sewer in Hackness Road.
19. For the conversion of Ryefield House, it will be necessary to provide some additional soil pipes in and around the building to facilitate the new bathrooms etc. To enable future maintenance, all soil pipes should connect directly to an inspection chamber or mini-chamber. New foul drains from around the building should then connect to the existing main drain serving the house.
20. All existing blind rainwater connections should be investigated and removed as necessary: discharging via trapped gullies and accessible via inspection chambers for future maintenance. Similarly, all new rainwater downpipes should discharge into trapped gullies.
21. It is likely that the existing surface water drains and soakaway(s) would not satisfy current drainage requirements and moreover their condition would be difficult to establish. As such new surface water sewerage systems should be provided to serve the existing building and new houses.
22. Requirement H3 of the Building Regulations 2000 specifies a hierarchy for the disposal of surface water. In brief, this states that consideration should first be given to soakaways, infiltration systems and other Sustainable Drainage Systems (SUDS). This would be preferable to draining directly into 'Sea Cut'.
23. Should surface water be drained to a suitable soakaway positioned towards the south of the site, it is likely that water will eventually drain into 'Sea Cut' but at such a rate that will not cause flooding problems for properties downstream.
24. Rainwater from the existing and proposed drives should be allowed to drain into the adjacent garden and to facilitate this, infiltration trenches should be constructed along the lowest edge.



## 25. FLOODING

26. The Environment Agency's Indicative Flood Zone Map and the Northeast Yorkshire Strategic Flood Risk Assessment suggest that the site is not within Flood Zone 2 or 3 but lies adjacent to such areas. Local enquiries appear to agree with these records insofar as the area to the east of Hackness Road / north of 'Sea Cut' does flood on a regular basis serving as a floodplain.
27. Enquiries also confirm that Church Beck has also flooded in the past, whereby water has overtopped the banks flooding a small area of Hackness Road. It is understood that a Stage 1 scheme to improve the Beck was carried out in 2003 but some additional works are still required and this is, it is said, being addressed by Scarborough B.C.
28. Interpolating existing knowledge it is suggested that flooding on Hackness Road has reached a level of around 40.1m (A.O.D.) and accordingly dwelling floor levels should be 600mm or more above this level – 40.7m minimum.
29. Ryefield House has a finished floor level of 44.0m and is well above any likely flood levels.
30. It is proposed to construct Unit 1 on ground varying in level from around 40.5m to 41.0m. Constructing the house to suit the higher ground level would establish a floor level some 900mm or so above known flood levels, offering sufficient flood assurance.
31. It is proposed to construct Units 2-3 on ground varying in level from around 40.4m to 41.5m. Due to its location and proximity to the drive, it is likely that the area will need to be reshaped by cut-and-fill to a mid-way level – say around 41.0m and consequently floor levels will be sufficiently higher than likely flood levels.

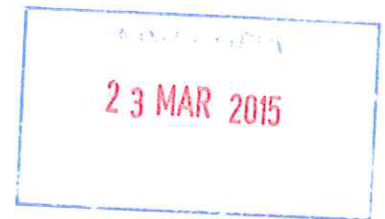


## 32. SUMMARY AND CONCLUSIONS

33. It is proposed to convert the existing house (Ryefield House) into three dwellings, build a detached house to the side of it and construct a semi-detached pair of houses close to the site entrance.
34. Foul water from the dwelling drains to a combined public sewer in Hackness Road, along with a small proportion of surface water from the roof. The remainder of the surface water drains towards the south, either to soakaway(s) or 'Sea Cut'.
35. Separate foul and surface water drainage systems will be utilised and any surface water currently draining to the public combined sewer will be removed from the system. Foul water will drain to the public sewer and surface water will be put to soakaways located in the south of the existing garden in accordance with SUDS (Sustainable Drainage Systems) practises. (Surface water should not drain directly into 'Sea Cut'.)
36. The Environment Agency's Indicative Flood Zone Map indicates that the site is not within Flood Zone 2 or 3. However, some local flooding has been confirmed along Hackness Road and the adjacent Church Beck - to a suggested level, locally, of around 40.1m AOD. The floor levels of the existing house and those proposed will be at a level significantly higher than likely flood levels – more than 900mm above.
37. If these recommendations are followed the site should not be affected by flooding or cause other properties to flood.

Michael Stevenson

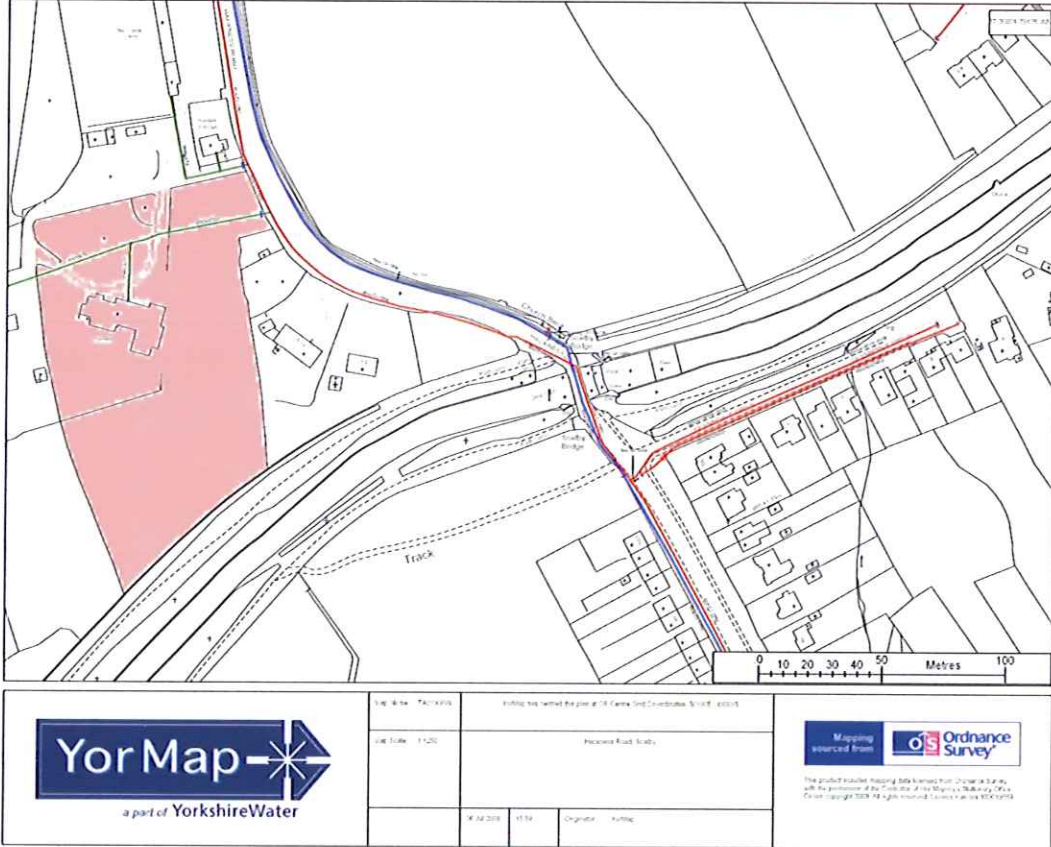
18<sup>th</sup> July 2013



*(Note: Plans appended to this report have been reduced in scale to accommodate the format.)*



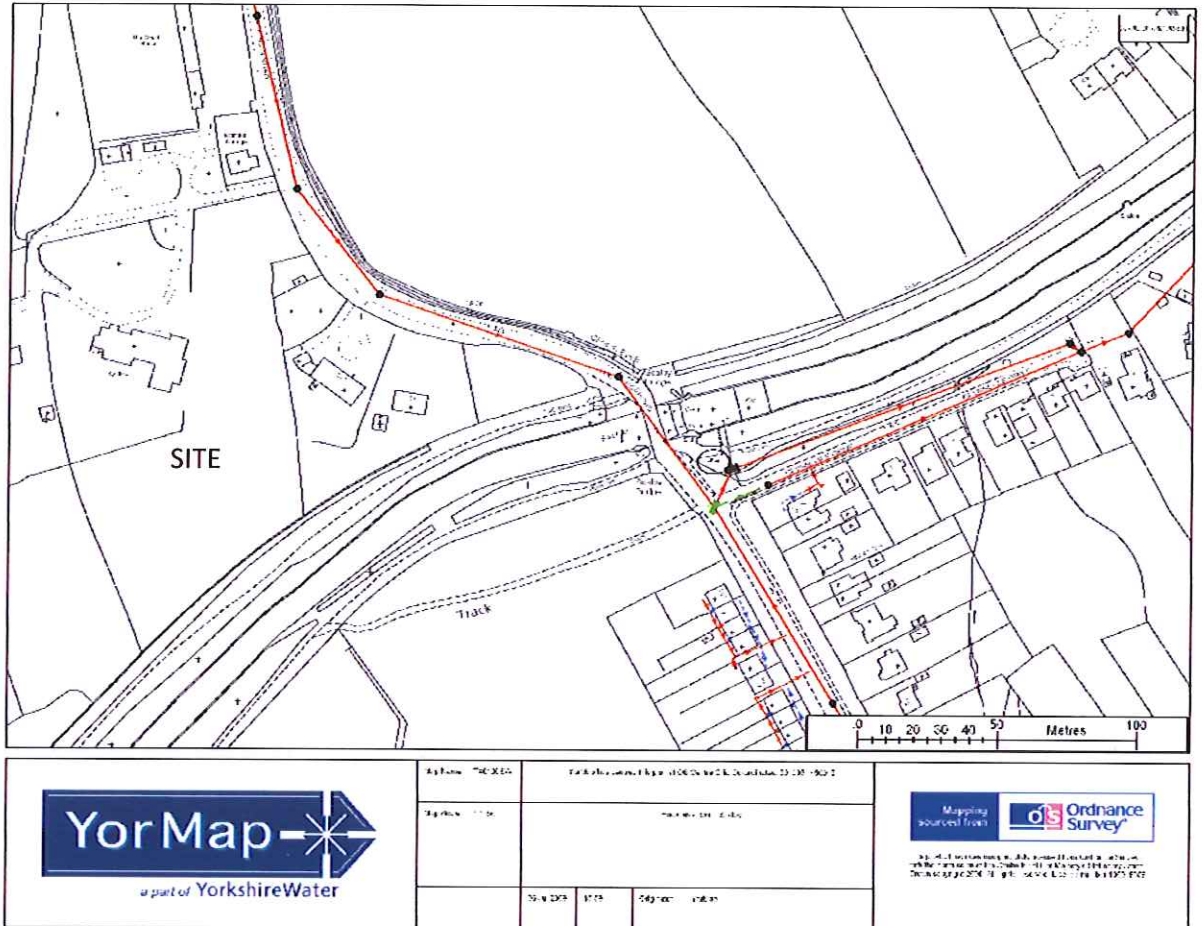
# APPENDIX 1 – SITE LOCATION



NYMNP/PA  
 23 MAR 2015

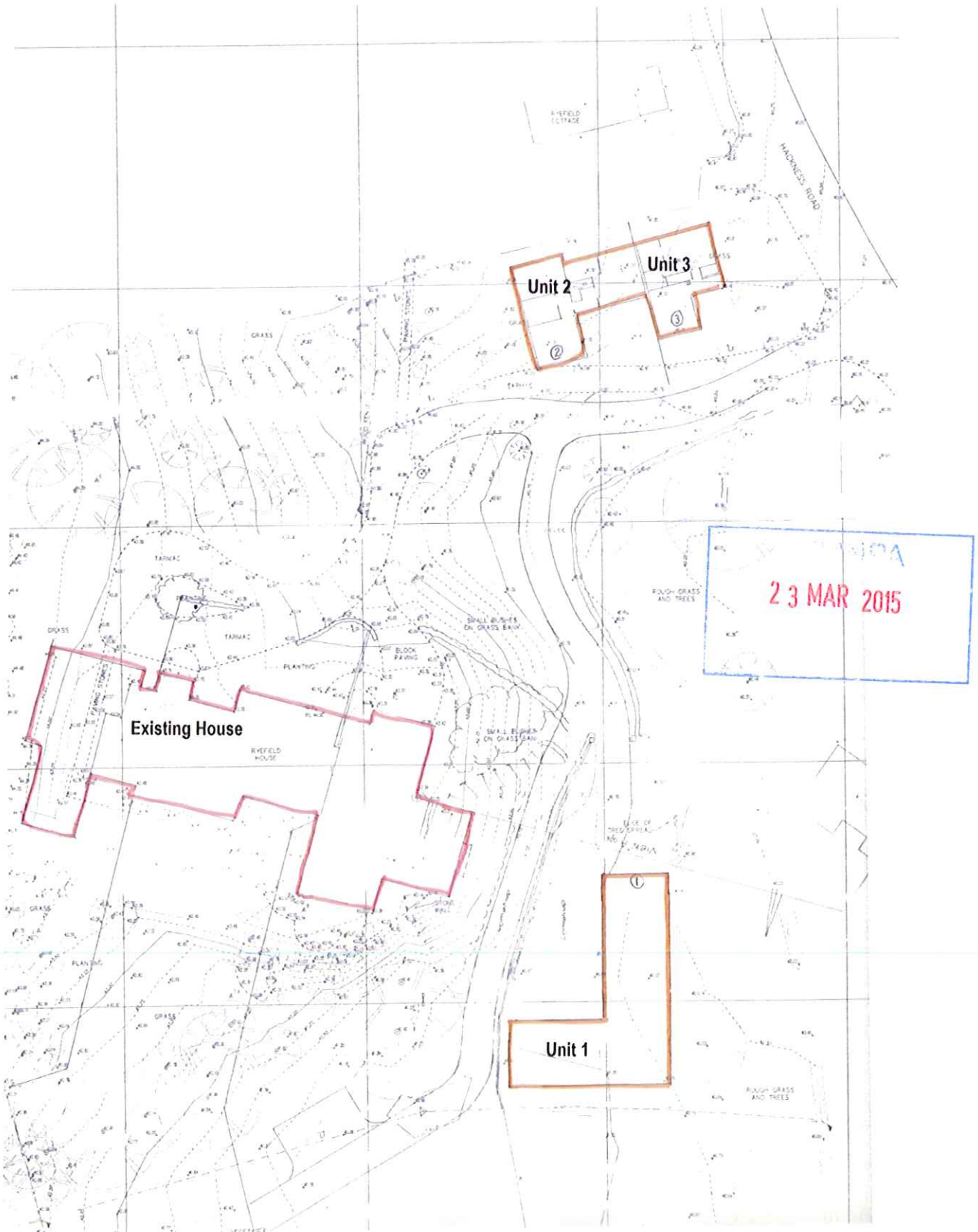


## APPENDIX 2 - PUBLIC SEWERS

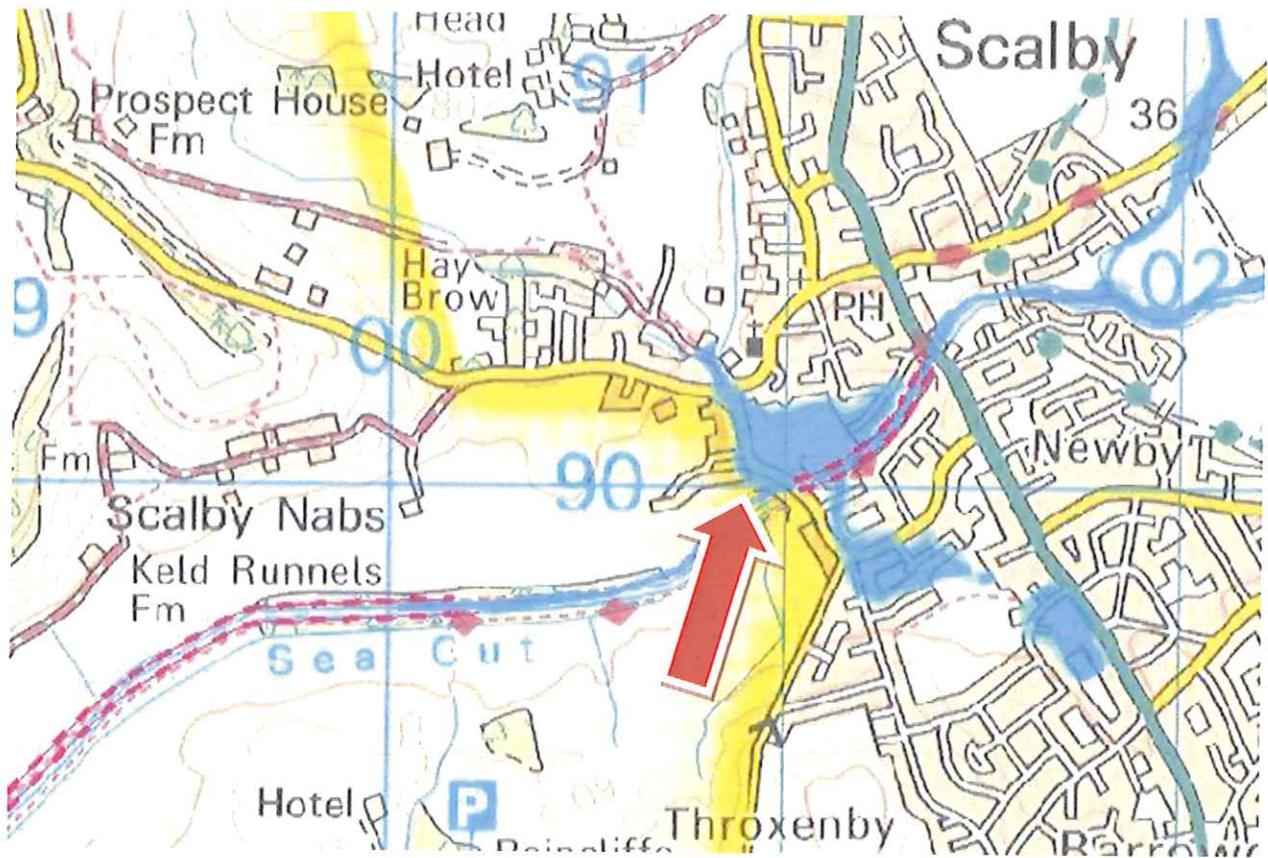


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**APPENDIX 3 – PROPOSED LAYOUT**



APPENDIX 4 – ENVIRONMENT AGENCY’S INDICATIVE FLOOD ZONE MAP



23 MAR 2015