Dorset Council

PRINCIPAL STREET GILLINGHAM

LANDSCAPE AND ECOLOGICAL MANAGEMENT PLAN

PLAN PERIOD: 5 YEARS

REVIEW DATE: 3 YEARS AFTER LEMP COMMENCEMENT

30TH OCTOBER 2020

PREPARED BY D. ALDER - DANNY ALDER ECOLOGY & CONSERVATION
CHECKED BY DR A. KING – DORSET COUNCIL NATURAL ENVIRONMENT TEAM
& A. CARPENTER – DORSET COUNCIL GREEN INFRASTRUCTURE ADVICE TEAM

VERSION 5

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1 Introduction

1.1 Background

This Landscape and Ecological Management Plan (LEMP) has been prepared to inform the required management of the landscape and ecological interests associated with Principal Street a new road constructed by Dorset Council south of Gillingham, Dorset (Grid Ref ST81626,25170). The plan has been prepared to satisfy the requirements of the planning permission (Application Ref 2/2020/0379/FUL). The planning area is sown in Appendix A drawing 2_2020_0379_FUL-LOCATION_RED_LINE_PLAN-636806. The proposed route of the road known as Principal Street follows an east to west line from the B3081 to the B3092 south of Madjeston Bridge and is approximately 1.35km. The route will act as a main link road across the southern Gillingham housing extension.

1.2 Land use

The site comprises an area of 3.521ha of agricultural land used as cattle grazed pastures and for sileage/haylage. Much of this is agriculturally improved ley's and resown pasture. There are six main fields all of which are surrounded by mixed native species hedgerows with occasional mature hedgerow trees, particularly Pedunculate Oak.

1.3 Landscape Context

The site sits within the Clay Vale Landscape Character Area and is characterised by

- 'A broad expansive clay Vale which is tranquil and unified.'
- 'A unique mosaic of woods, straight hedgerows and grassland fields 'dotted' with distinctive mature hedgerow Oaks'
- 'Open views across the undulating to flat pastoral landscape to the chalk escarpment backdrop.'
- 'A network of ditches, streams and brooks which drain into the tributaries of the Stour.'

The fields are seasonally wet and drain through a series of open ditches into the River Lodden to the north which ultimately flows into the Dorset River Stour. There are scattered ponds most of which have become shaded and overgrown at their margins with White willow, Sallow and Blackthorn.

1.4 Tenure and Management

On transfer from two separate farming landowners the road construction will become the responsibility of the local highway authority, Dorset Council. The council will be responsible for undertaking the establishment and ongoing management of landscape and ecological features cited within this Landscape Ecological Management Plan (LEMP).

1.5 Construction Details

Construction of Principal Street, associated access, landscaping and infrastructure works at land to the East of New Road (B3092), Gillingham will follow preliminary groundworks. These include the relocation of hedgerows through which the road cuts, installation of ditch culverts and installation of a deep drainage sewage main. Important landscape and ecological features including trees and hedgerows will be protected and appropriate mitigation and root protection zones set out to buffer against impacts during construction works. Remedial landscape practices will include restoration of damaged grassland following completion of construction, details of specifications are included within the Appendices of this LEMP. This LEMP also sets out the measures required to establish and maintain all ecological mitigation measures, including the swale, wet woodland, scrub areas and new and translocated hedges.

2 Description

2.1 Ecological and Landscape Interests

The site has been subject to ecological survey and impact assessment during 2018-19 which has been used to inform mitigation and enhancements submitted with the ecology report dated 30th March 2020. The report should be referred to for more details against each of the ecological interests as required. The main interests are summarised below for which landscape and ecological objectives are produced to inform the mitigation and enhancement actions of this LEMP. A landscape appraisal has been carried out which considers the potential visual and amenity impacts and mitigation. Drawings have ben prepared for both ecological and landscape interests.

2.2 Habitats

2.2.1 Four hedgerows totalling 685.8 metres qualify as Important Hedgerows under the Hedgerow Regulations 1997. There are 9 hedgerows in total, all 1417m of which are important habitats and are covered as priority habitats within s41 of the NERC Act (2006).

2.2.2 There are 18 trees of interest identified. Most were mature maiden trees with only one veteran noted (GLRTR09) within hedge GLR02. The tree is one of the closest to the proposed route at the western end. The remainder are best described at Notable trees most having one or two veteran features, but most had no signs of hollowing in the trunk and were not considered yet to be Veterans. Many had holes which could provide habitat for bats, most of those with the hedges had shaded trunks with few epiphytes, but TR13

and TR18, both Oaks, had a good range of widespread epiphytic lichens. The grasslands are all improved agricultural pastures with low species richness.

2.3 Protected Species

2.3.1 Water voles are present along three water courses with evidence of use along the entire lengths of each. A low to moderate population class was identified in multiple areas of a water course including the western pond and channel leading to the River Lodden.

2.3.2 Great Crested Newts were located within the eastern pond. There is a low population breeding in the pond and a low metapopulation throughout the local area following assessment of GCN records and discussions with Natural England.

2.3.3 Bats were identified using the two hedgerows assessed acoustically during the summer of 2019 with at least 13 species identified from the three main foraging guilds. Three annexe 1 species were identified; Barbastelle *Barbastella barbastellus*, a moth feeding woodland specialist, Lesser Horseshoe *Rhinolophus hipposideros* and Greater Horseshoe *R. ferrumequinum.*

2.3.4 Badgers *Meles meles* were not identified living within the site although there are records of badgers from the area. Badgers use pasture farmland over which they forage and can travel several kilometres doing so each night.

2.3.5 Birds; all of the hedgerows will provide nesting habitat for a range of birds including open and closed nesting species while mature and notable and veteran trees could be used by cavity nesting species such as great spotted woodpecker *Dendrocopus major* which was seen during survey in hedgerow trees along hedgerows. Dunnock, *Prunella modularis* and Song thrush *Turdus philomelos* were seen using the dense hedgerows. A single Peregrine *Falco peregrinus* was seen during surveys in 2019.

2.3.6 Reptiles were not identified although there were limited amounts of potential habitat associated with the areas closest to water bodies which could support Grass snake *Natrix natrix.* Hedgerows may support low numbers of species such as slow worm *Anguis fragilis* and act as dispersal corridors.

2.4 Landscape Designations

There are no landscape, ecological or cultural heritage designations within the Site boundary. A Landscape and Visual Impact Assessment for the development of land south of Gillingham has been prepared by Terence O'Rourke and submitted with planning application number 2/2018/0036/OUT. The road has been designed to closely follow the

existing field levels to reduce visual impact and to facilitate the necessary access connections from the proposed development. Landscape measures closely align with ecological mitigation and enhancement requirements to ensure additional planting, wildflower creation and habitat restoration is in-keeping with the landscape character of the area. The ecological mitigation, compensation and enhancements is detailed within the ecology report, Dorset Council (March 2020). The Landscape design relates to the three character areas, Formal, Semi-Rural and Rural with species selected to reflect these.

2.5 Landscape and Ecological Design

Please see Appendices for Ecological Mitigation Plans and Reports:
Ecological mitigation plan-L-001-103-RevC
Ecological mitigation plan-L-002-103-RevC
Ecological Impact Assessment Gillingham Principal Street FINAL-MAR2020
PRINCIPAL_STREET_GCN_COMPENSATION_CALCULATION-643810

Please see Appendices for Planting specifications and schedule:
L-001-107_Planting_Schedules_&_Details_RevD
Seed schedule by areas-RevB

Please see Appendices for location drawings for each landscape feature to which the planting schedule refers:
L-001-104_Street_Trees_&_Planting_Plan_RevD
L-002-104_Street_Trees_&_Planting_Plan_RevD
L-003-104_Street_Trees_&_Planting_Plan_RevC
L-004-104_Street_Trees_&_Planting_Plan_RevC

3 Objectives

3.1 The objectives for the management of each landscape and ecological feature are listed below with a rationale.

3.2 Objective One – Existing Hedgerows

3.2.1 Translocation of existing hedgerows affected by road scheme following best practice guidelines.

3.2.2 Rationale: Where the proposed highway will break through in eight locations, four of which are important hedgerows under the 1997 Hedgerow Regulations. All hedgerows affected are classed as habitat of principal importance under NERC 2006. There will be a requirement for the removal of 306 linear (L) metres of hedge. Temporary loss and permanent removal mitigated by coppicing and

relocating all sections to nearby receptor in early autumn. The establishment phase will include prior ground preparation which is site specific and mitigation for loss or short term translocation impacts by additional planting.

3.3 Objective Two – New Hedgerows

3.3.1 Native hedgerow planting of 532 linear metres and gapping up existing hedges

3.3.2 Rationale: Bolster retained and translocated hedgerows through planting This will also provide additional bat foraging and bird nesting habitat as the new planting matures.

3.4 Objective Three - Improved grassland

3.4.1 Establishment of replacement grassland for habitat creation to diversify/improve quality of habitats on site totalling 10,386m^2, plus 1,192m2 of new balancing pond and embankment vegetation. There will be an additional enhancement area of 5,242m^2 meadow grassland.

3.4.2 Rationale: On site mitigation for loss of improved grassland which though of low species richness is important permeable habitat for other ecological receptors and to enhance landscape around road.

3.5 Objective Four – Great Crested Newt (GCN) – in-situ mitigation

3.5.1 Habitat creation to diversify/improve quality of habitats including pond, swale creation and Amphibian hibernacula on site to support GCN. Protect retained features of existing breeding pond and immediate associated terrestrial habitat during construction.

3.5.2 Rationale: On site mitigation to include creation of swale of 460m^2 and surrounding meadow grassland amounting to 1,315m^2 limit risks to GCN from fragmentation by linking existing to newly created habitats including two new areas amounting to 2,678m^2 between the translocated hedges and 3,577m^2 of regenerating grassland and scrub mosaic north-west of the new swale. This will increase the area of higher quality habitat to help maintain favourable conservation status.

3.6 Objective Five – Great Crested Newt - Off-site compensation measures

3.6.1 Habitat creation for two additional ponds off site yet within the metapopulation area following calculation using the Natural England District Licensing approach

3.6.2 Rationale: Adopting the NE district licensing approach ensures that sufficient habitat permeability and continuity can be established and secured off site to

maintain favourable conservation status. A financial sum has been agreed between the developer and NE and will be held by the council to be spent on the required habitat creation for GCN.

3.7 Objective Six – Water Vole Habitat Degradation

3.7.1 Habitat degradation under Natural England licence through removal of vegetation for displacement of 50 linear metres of both sides of existing water course

3.7.2 Rationale: For the avoidance of harm to water Voles during construction of the culverted road bridge the bankside and in-stream vegetation will be cut and removed down to bare-ground where possible and re-cut to maintain the height of vegetation to less than 100mm. This discourages Water Voles from using the construction area and encourages them to move to the retained suitable habitat either side of the road sides.

3.8 Objective Seven – Water Vole Habitat Creation

3.8.1 Habitat mitigation for effects following the loss of a 50m culverted section of water course using techniques to diversify/improve the quality of habitats on site to support water voles by increasing the total area of available habitat.

3.8.2 Rationale: The creation of 2678m^2 tall herb/fen meadow surrounding the water course south of the new road. This will be consolidated by the siting of part (180 L/m) of the translocated hedgerows (objective one), to act as a boundary feature and provide additional habitat feature which voles can use e.g. during floods. The hedge will be sited at least 8m from the top of the embankment to avoid shading.

3.9 Objective Eight – Bats – establish dark corridor along key flightline over road and provide additional mitigation and enhancement for bat dispersal and foraging across the wider landscape.

3.9.1 Enrichment planting of trees and shrubs to enhance habitat quality and increase opportunities for foraging away from highway and buffer lighting. This will be achieved through enrichment planting on the approaches to each road verge using native trees and shrubs. These measures to work alongside the lighting scheme which is designed to maintain a dark corridor along hedge GLR02.

3.9.2 Rationale: Thirteen species of bats were identified several of which e.g. Lesser Horseshoe, are sensitive to lighting. The road design will avoid light spill by positioning of lights away from existing trees and new planting at the crossing point. Additional measures for other species (objectives 1-4, 6-7) will contribute

to bat mitigation by creating habitat set back away from the road corridor. Of particular importance will be the inclusion of hedgerow trees into the translocated hedgerows and planted hedges as well as wet woodland and small copse planting. Street tree planting for landscape and amenity value will be largely native species and structurally improve the flight-lines for bats.

3.10 Objective Nine – Nesting Birds – Avoidance of loss of nesting habitat and harm during nesting

3.10.1 Hedgerows form the most important nesting habitat currently and will be retained and relocated with additional nesting habitat created through new native tree and hedgerow planting.

3.10.2 Rationale: Several species including red-listed Song thrush *Turdus philomelos* were identified as highly probable breeding birds. Any removal of woody vegetation should be carried out in the period outside of bird nesting for most species (September-February). Restoration of nesting habitat will help mitigate impacts to breeding bird populations found here.

3.11 Objective Ten - Badgers

3.11.1 Badgers use the grasslands in which to forage and measures which prevent badgers from harm must be in place including escape boards or channels in deep trenches of when realigning culverts, and long-term to reduce risk from collision with traffic.

3.11.2 Rationale: Badgers are believed to have setts within the locality but not within this scheme and are therefore likely to come into the road area during construction. Thereafter they may also use culverts as underpasses to reduce risk of collision with traffic (see objective 11).

3.12 Objective 11 – Otters

3.12.1 There is no risk to Otter breeding or resting place although new culverting will incorporate shelves along which Otters can move.

3.12.2 Rationale: Otters use culverts as underpasses as they follow water courses. In the event of raised water level moving quickly though a channel they will sometimes cross roads and are at risk of collision with traffic. A raised shelf within the culvert will help mitigate this risk.

3.13 Objective 12 - Tree and shrub Planting – Establishment

3.13.1 There are several areas designated for tree planting which form part of the mitigation of ecological and landscape interests including those listed in the above objectives. The successful establishment of which is essential.

3.13.2 Rationale: To ensure that each planting area is correctly specified in terms of size, protection, inspection and maintenance to achieve the desired standards. Establishment will be to achieve 90% survival of each new planting

3.14 Objective 13 – Tree and Shrub Planting – Maintenance Schedule

3.14.1 There will be a five-year programme of aftercare following establishment which will include control of weeds formative and remedial pruning (i.e. removal of dead, damaged and diseased material). Replacement of exceptional losses beyond the establishment phase and selection of alternative species should failure be specific. The ecological site classification used by Forestry Commission/Forest Research will be used to guide selection. The silviculture management is included and can be reviewed at each revision of the LEMP.

3.14.2 Rationale: It is essential that the tree and shrub species incorporated provide the functional benefits expected within the landscape character area of the Clay Vales in north Dorset. In addition to mitigation of other species interests cited above they should offer additional benefits to species known from the area, e.g. White-letter Hairstreak butterfly on selected Elms, *Ulmus spp*.

4. Management Plan

4.1 Terms of reference

The following management plan sets out each of these objectives into work prescriptions during or following construction with a time/frequency for each. The management plan will be revised once the construction timetable is known and adjustments made accordingly. For the avoidance of doubt there are some elements of the management plan which are also covered by the Construction and Environment Management Plan (CEMP). These may be removed from the LEMP once they have been completed and signed off by the Project Manager and Ecologist. There is a general presumption that all works will be overseen by an ecologist (including an ecological clerk of works) and landscape officer during the construction and following for the agreed establishment phase and aftercare period of up to 5 years for new planting and habitat creation. At the end of the third year from the start of the LEMP it will be revised to include further remedial works if necessary and long-term woodland and grassland

(habitat) management and street tree after care. The client, ecologist and landscape officer will agree commitments beyond this.

4.2 Management Plan Period and Review

The management plan period will be five years made up of a three-year establishment period within which time all new tree and shrub planting, hedgerow translocation, seed sowing and habitat creation will be completed to a satisfactory standard. Following the three-year establishment period there will be a two-year aftercare period whereby ongoing maintenance will be undertaken. The management plan refers to each work item in terms of both establishment and aftercare as required. There will be two review periods during the lifetime of the plan; the first at the end of the establishment phase in year three and again at end of the fifth year the plan will be reviewed. Revisions will be agreed to set out the further maintenance required which can be fully costed and budgeted.

4.3 Indicators of success

4.3.1 Establishment Period: All new planting, seed sowing and hedgerow translocations are successfully growing and providing the expected amount of cover within the ecological mitigation and landscape areas. Periodic inspection by the project ecologist and landscape officer will be required to monitor the condition of all such features and to recommend action to remedy any shortfall e.g. weed control around new tree planting during this period.

4.3.2 Aftercare Period: The aftercare period immediately following establishment is a transitional period during which time all the ecological and landscape plantings and features are functioning for the purpose for which they were intended. The aftercare period is the start of the longer-term maintenance phase. For instance, formative pruning of street trees once established, initiation of silviculture management of new woodland habitats by coppicing as the trees close canopy, and mowing regimes providing the correct meadow structure.

Management Objective	Management Prescriptions	Timescale-Frequency
1.Existing Hedgerows	1.1 Receptor area a) 112 linear metres as shown in Ecological mitigation plan L001-103 RevC 1.2 Receptor area b) 180 linear metres as shown in Ecological mitigation plan L002-103RevC 1.3 Hedgerow relocation to take place in dormant season with coppicing beforehand to reduce stress during lifting. Prepare receptor sites with cultivation of soil to accommodate width of hedge-bank and root-ball, incorporate organic matter. Details as follows: further guidance should be sought from the project ecologist. • The width of the receptor trench will be approximately 1.5m, however, this may need to be increased to accommodate larger sections of root/hedgebank. The trench will vary in depth but on average will require excavating to a depth of 1 m. • The base of the trench should be scarified and slow release Fertilizer 20:4:10 N:P:K applied at a rate of 50 g per metre. • Broadleaf P4 water retention granules should also be spread along the base of the trench at a rate of 30 g per metre length. • The trench must not be allowed to dry out, so if the weather is dry, the trench must be watered using a bowser to thoroughly soak the soil and spoil. Hessian/jute sheeting sufficient to cover the sections of trench will be available to cover open trenches where there is a delay of more than 1hour while awaiting each section of hedge to be brought in. • In dry weather allow for each section of trench to be open for a maximum of 1 hour. This will equate to digging a length of approximately 20 – 30 m at a time. In damp weather, it will be safe to dig up to 50 m at a time. • Short sections of the hedge should be dug and transferred to the receptor trench in sequence keeping soil intact as far as is practicable, including soils with hedgerow plants and ground fora which can re-establish. • A chainsaw operative should be available to cut roots or stems rather than breaking them with the excavator (cleanly cut roots are less susceptible to fungal infection). Safe working practices must be agreed between the plant operator and chainsaw operator. • The translocated sections must be set at the required depth within the trench, at ground level. • Top soil from around the original hedge can be used around the translocated sections. Check the translocated hedge to ensure it is sitting at the correct depth and that there is sufficient top soil around the roots. This must be undertaken as soon as possible after translocation, but only when it is safe to do so and exposed roots should be carefully buried with a spade. • Additional top soil may be needed to place around the root plates and provision should be made for this. Top soil should be firmed in by operatives. A dumper and small digger would facilitate this.	Translocation must be carried out in dormant season – September-February.

	• The hedge should be thoroughly watered to soak the hedge sections and area of trench. • On completion the hedge should be well watered to ensure top soil is washed in to fill any voids. Top soil levels should be topped up if any roots become exposed. • The hedgerow base can be mulched with 100mm of wood-chip to cover up to 500mm each side of the hedge. • Settling in period: Watering will be required after initial relocation with repeat watering every 5 days up to 4 weeks. The translocated hedgerows must be protected using stock proof fencing using a minimum of 3-strand barbed wire in accordance with BS1722:2 2000 Fences Part 2: Specification for Strained Wire & Wire Mesh Netting Fences. • Establishment period First year: Following the settling in period watering may be required during a dry spring and summer following translocation during periods of dry weather exceeding two weeks.	A further check on the hedge should take place mid-late winter to check for exposed roots/frost-heave or remedial work required. Two inspections in the first growing season to check on regrowth and initiate remedial action e.g. covering of soil or watering in exceptionally dry spring (a month without rain).
	1.4 Provision will be made for' gapping up' any loss of sections using native species of whips 60-90cm bare-rooted planted in the following dormant season November-February at a density of 5 plants per linear metre in double staggered rows with cane and rabbit spiral guards. As specified in L001-107 Planting Schedule & Details. Please note additional plants will be required to those shown in this schedule.	For the establishment period of three growing seasons following translocation November – February
	1.5 The hedge will be trimmed once enough growth has been reached or in winter of the second growing season following translocation.	November - February
2. New Hedgerows	2.1 There will be an additional 24 linear metres of native hedgerow planting which extends the relocated hedgerow section shown in plan Ecological mitigation plan L001-103 RevC using 120-No bare-rooted whips at 60-90cm as per planting schedule shown in L-001-107_Planting_Schedules_&_Details_RevD under Native hedgerow alongside bridleway 2.2There will be new hedgerows alongside the highway corridor amounting to 508 linear metres. Refer to Landscape plans and schedule for species/sizes Refer to L-001-107 Planting Schedules & Details. Planting along prepared ground, weed free. Planted at 5plants/linear metre in double staggered row 400mm apart and between rows.	November - March

	2.3 Provision will be made for' gapping up' any loss of sections using native species of whips 60-90cm bare-rooted planted in the following dormant season November-February at a density of 5 plants per linear metre in double staggered rows with cane and rabbit spiral guards. 2.4 The new hedge will be trimmed every two years once enough growth has been reached or in winter of the fourth growing season following planting after the establishment period.	
3. Improved grassland	3.1 Verge along the highway to be planted with a low fertility seed mix to reflect semi-rural and rural areas: 5,270m^2 see all landscape drawings L-001-002-104_Street_Trees_&_Planting_Plan_RevD for locations. L-003-004_Street_Trees_&_Planting_Plan_RevC 3.2 Ground preparation to include loosened sub-soil, weeded in advance with a following light surface rake/scarification prior to sowing. Only sow in conditions when soil is moist and avoid prolonged drought. 3.3 Seed mix using Seed schedule by areas-RevB sown at 2-3grams/m^2 via Gerard Russell (Heritage Seeds) Highways Grassland Seed mix sown at the rate of up to 3 grams/m^2 in the following character areas: Formal 309m^2 requires 930 grams Semi-rural 2195m^2 requires 6590 grams Rural 2766m^2 requires 8298 grams Highways Embankment Refuge mix sown at 2grams/m^2 in the following character area: Rural 4816m^2 requires 8380 grams 3.4 Following sowing inspect twice in years one to three of the establishment period for any bare-patches and re-sow as required and undertake any remedial action e.g. re-profiling or raking.	September-October or March-April Re-sowing following inspection to be carried out Sept-Oct or March-April as needed during aftercare period.
	3.6 Mowing regimes will be required which reflect the different functions. Unless otherwise required grassland will be cut and removed with locations within mitigation areas which will be used as composting sites. A single cut in late July-August is required. Areas of meadow grassland alongside footpaths will be cut more frequently to reduce grass falling into the paths with a 0.5m wide strip mown. Mowing can begin within the three year establishment period and continue into years four and five of the aftercare	Single cut & collect in July-September 4-6 cuts along path edges as required, arisings to be removed.
4. Great Crested Newt (GCN) – in-situ mitigation	4.1 Creation of a new swale 460m^2 as shown in Ecological mitigation plan L002-103RevC, this will be situated within an area of naturally regenerating tall herb/fen-meadow 1,315m2. In addition, there is Grassland/scrub habitat in the north west to be left to establish – 3,577m^2 and Grassland/scrub habitat between translocated hedge, creating a 'Green Corridor' – 2,678m^2	

	4.2 The swale should be constructed with a 1 in 4 or 5 slope and be created by reprofiling existing soils to a depth of 300-500mm. Surplus soils should be placed in-situ and either graded to the existing embankment to the south or spread across the habitat mitigation area and allowed to re-establish vegetation naturally.	
	4.3 Annual cut and collect of half of the fen-meadow and swale composted at a convenient location close-by. This can act as a habitat refuge for newts and other amphibians.	From September-October 2021 (or one year after establishment whichever is earliest) for the duration of the aftercare period.
	4.4 Creation of 10 No brushwood & log-pile refugia created within retained habitat by pond and swale and restored tall grassland areas shown in the ecology plan.	September 2020 (or at the earliest opportunity when construction begins)
	4.5 Creation of dry and wet woodland and grassland scrub mosaics as shown in Ecological mitigation plans L001-103RevC & L002-103RevC: please refer to objectives 12 & 13 below for details of each area.	
5. Great Crested Newt - Off-site compensation measures	5.1 Creation of 2 compensation ponds required as set out in PRINCIPAL_STREET_GCN_COMPENSATION_CALCULATION-643810 (Appendix G) The creation and maintenance of the two ponds required under the District Level Licence compensation calculation will be overseen by Dorset Council's Natural Environment Team. Ponds will be created in accordance with the Natural England Habitat Creation and Restoration Guidance for GCN ponds (see Appendix H) and will be within the meta-population area surrounding the development site to ensure favourable conservation status and habitat permeability is maintained.	Maintenance and monitoring as set out under the terms of the GCN District Level Licence, to be managed by Dorset Council Natural Environment Team
6. Water Vole Habitat Degradation	6.1 Habitat degradation through removal of vegetation for displacement under Natural England class licence of 50 linear metres of open ditch where voles had been identified during surveys. The vegetation is cut and raked and recut to keep it below 100mm every 12-15 days. 6.2 Destructive search prior to construction of new culvert to include check of burrows with torch and endoscope and careful, hand digging burrows until ends of tunnels are reached.	Ongoing until planning permission granted and construction phasing known
7. Water Vole Habitat Creation	7.1 Habitat creation diversify/improve quality of habitats on site to support water voles through creation of additional 2678m^2 tall herb/fen meadow grassland creation alongside channel as shown in Ecological mitigation plan L002-103RevC. This will be between relocated hedgerows as shown in the plan. 7.2 Grassland to be cut and collected with alternate areas cut each year; with arisings removed to a compost area which can be an additional habitat feature away from the water course.	Following translocation of hedgerow (see 1,b) above). July-September for the duration of the aftercare period

8. Bats – establish dark corridor along key flightline over road	8.1 There will be additional hedge planting alongside the new road to help buffer the effects of the road encouraging bats to go up and over towards the tree canopy at the dark-zone crossing as shown in the Ecological mitigation plan -L-001-103-RevC.The Plan L-001-104_Street_Trees_&_Planting_Plan_RevD details the location of the new hedge alongside the highway. 8.2 All habitat mitigations/ habitat creation will maintain and increase foraging opportunities and flight-lines; this includes woodland, scrub & grassland creation away from road; see Ecological mitigation plans-L-001-103-RevC & -L-002-103-RevC for woodland, scrub, hedgerow and grassland habitat creation areas. See objectives 12 & 13 for tree, shrub, hedge planting establishment and maintenance aftercare respectively.	November to end March planting
9. Nesting Birds – Avoidance of loss nesting habitat and harm during nesting	9.1 Any coppicing or scrub/tree removal work should take place outside of the main bird nesting period which is typically March to early August. Where urgent works are required to be carried out within this period then an ecologist must be present to survey in advance and provide advice which operatives must follow. 9.2 During construction nesting bird areas e.g. retained hedgerows will be protected by Heras fencing and a 10metre buffer must be maintained to avoid disturbance. 9.3 Loss of hedgerows will be temporary until translocated sections have re-established. There will be additional hedge planting amounting to 532 linear metres as referred to in 1 above. See Objectives 12 & 13 for establishment and maintenance of new planting.	Removal of woody vegetation -September to end February.
10. Badgers	10.1 While there are no setts active within the highway area during construction badgers may use the site during nocturnal foraging. Any deep excavations, trenches etc should be secured by covering to prevent badgers from falling in. Alternatively, there must be escape ramps installed at the end of each day of work. An ecological clerk of works can advise on these measures before excavations and will be on-call. 10.2 The loss of foraging grassland will be mitigated through habitat creation and restoration of areas of woodland and grassland which badgers will be able to use following construction.	Throughout construction period
11. Otters	11.1. There are no otter holts affected by the construction. However, a watching brief is required to ensure that otters can continue to use water courses (ditches, culverts and ponds) within the construction area. Periodic checks will be made by the ecologists and ecological clerk of works. 11.2 The culvert design includes a raised shelf along which otters can travel during peak rainfall. This should be periodically checked once it has been constructed to ensure it is not obstructed by debris as part of routine highway inspections.	Throughout construction period. Throughout and following construction.

12. Tree and shrub Planting – Initial Establishment	12.1 This section covers all the required hedgerow and tree planting as set out in the L-001-107_Planting_Schedules_&_Details_RevB with details of species and sizes and planting of street trees in the areas specified and shown in the landscape plans and Ecological mitigation plans. 12.2 Hedgerow planting: as per objective 2 a total of 532 linear metres of native hedgerow planting is to take place using 60-90cmwhips planted using T-knotch or small pits protected using a cane and rabbit spiral. Planting areas shown in two areas; 508 m and 24m respectively L-001-104_Street_Trees_&_Planting_Plan_RevD 12.3 Tree Planting –1456 No Native wet woodland: as shown in Ecological mitigation plan-L-001-103-RevC native trees and shrubs all 60-90cm whips planted at 1.5m centres using T-knotch planting method or small pits. Protected by tree shelters 1.2m tuley tube tree shelters and stake. 12.4 Tree Planting – 22 No Native hedgerow trees 125-150cm, planting every c.20 metres of hedge as shown in Ecological mitigation plan-L-001-103-RevC planted using small pit digging, trees protected by 1.2m tuley tube tree shelter and stake may require formative pruning to remove lower half side branches. Each to have a tall post 2.5m installed to mark within hedge to reduce risk of flailing. 12.5 Tree Planting - Native mixed Thornless 696No as shown in L002-104RevD & L003-104RevC street trees and planting plan. To be planted using T knotch at 1.5m centres protected by 1.2m tuley tube tree shelter with stake. 12.6 Tree Planting – Native mixed with thorn 322No as shown in L003-004 street trees and planting plan. To be planted using T knotch at 1.5m centres protected by 1.2m tuley tube tree shelter with stake. 12.6 Street Trees - Street trees 45 No (rural, semi-rural and formal character areas) semi-extra-heavy standard 16/18cm, as shown in all street tree and landscape plans L001(-L002) – 104-RevD & L003(-004)-104 RevC. All To be planted following methods specifications shown in L-001-107_Planting_Schedules_&_Details_RevB Landscape Officer to inspect and approve the first street tree pits before planting.	All planting to be carried out in dormant period November to end March avoiding periods of extreme weather wet or dry and extended periods of frost.
13. Tree and Shrub Planting – Maintenance Schedule	13.1 There must be a minimum period of 3 growing seasons aftercare to aid the full establishment of new planting across all areas referred to above. 13.2 All new planting must be kept weed free for the aftercare period; either using, a) by hand weeding and mulching with composted bark chippings to a depth of minimum 75mm and no more than100mm for a	First visit within first spring after planting April-early May

	minimum of 250mm radius around each plant, or b) use of an approved herbicide**. Herbicide must not be used on planting which is within the root protection areas of existing established, mature and notable trees.**	Mulching/herbicide annually in spring March-April
	13.3 Periodic inspection of new plantings; there will be a regime of inspection and reporting with follow up action to ensure that trees and shrubs have fully established. This will be carried out at least twice in the first season following planting with annual inspection for a further two growing seasons thereafter. All plantings will be inspected and a report on their status recorded as follows; species, whether alive/dead, need for additional weed control, change/replacement of stakes and protection which have been lost/damaged. For street trees the stakes and ties must be checked and tightened/loosened as required to ensure support for the standard trees. Top up watering of new trees during the establishment phase will be carried out as needed, particularly in periods of drought. The inlet of the irrigation pipe will be checked periodically during establishment to ensure it does not become clogged.	Inspection early autumn September-October For the duration of the aftercare period
	13.4 The schedule for street trees includes details of the Rootrain system as shown in L-001-107_Planting_Schedules_&_Details_RevD, which should be checked and replaced/repaired as required. All reporting should be made to the landscape officer who will agree on any course of action. During inspection any remedial action which can take place such as replacing small numbers of shelters or ties should be carried out.	
	13.5 Beating up losses of trees/shrubs: this will be carried out where there have been losses due to failure, disease or pests. Where there have been losses from any of the new plantings these will be replaced using the same species unless there is evidence of a species being unsuited to conditions or prone to die-back, in which case suitable alternatives agreed by the contractor, ecologist and landscape officer can be used. At this stage any replacement protection can be carried out if required. Planting should be carried out in suitable weather conditions avoiding extreme wet or dry spells or in prolonged frost conditions.	Beating up losses can take place in November to end March
	13.6 Following the 36-month establishment period ongoing management will be required based on the recommended schedule below.	End of the 36month establishment Woodland Management Schedule to be reviewed following inspection reporting as shown in 13.7
	13.7 Years 2-5: Remove stakes/ties from standard street trees dependant on establishment rates and deer/rabbit damage. After the third year from final completion visits are required to firm in the stock, inspect remaining stakes/ties and shelters, replacing any damaged/lost. Spot treatment of weeds/grass around each plant and around edges of planted areas, hand weeding if required, litter picking, releveling of mulch and formative pruning as agreed with the ecologist and landscape officer. Assess and report any damage from deer and rabbit damage and recommend mitigation as required.	Work from this inspection to be agreed between client, ecologist and

	13.8 Years 5 to 10 after final completion: 2 visits each year to carry out the following tasks as required at each visit: these may include Spot treatment of residual weeds/grass around each tree/shrub and around edges to planted areas, hand weeding if required and litter picking. Remove tree shelters dependant on establishment rates and deer/rabbit damage. 13.9 Years 10 and beyond: 1 visit each year to check the site and carry out any of the tasks specifies above as required. A coppice rotation for the native and wet woodland and will be developed with the ecologist and landscape officer based on establishment rates with the aim to coppice up to 70% of the Willow and Hazel. Thin out stems to allow up to 50% of the Oak,Field Maple and Cherry to grow on to full maturity. Develop and agree a long-term rotation system after 10 years from completion as part of the review of the LEMP.	landscape officer and LEMP Management Plan revised accordingly.

Appendices – Plans and Specifications

Supplied separately