Table 1: List of mitigation measures that are recommended for delivery in the Little Marlow Lakes Country Park (LMLCP), describing their nature, likely impact and priority (as considered by AECOM).

Location Number ¹	Description	Proposed Measure	Initial Ballpark Cost Estimate ² (capital, maintenance and replacement costs as appropriate ³)		Priority (low, medium, high) ⁴
1	points to the LMLCP, currently only with a standard 'Public Footpath' sign.	signpost marking the LMLCP is installed here to augment the existing signage. Furthermore, a DDA compliant gate should be installed here. It is noted that signposts are lacking across the entire LMLCP. Therefore, further signposts could be provided at the other main access points to the country park, such as the A404 along Marlow and the Thames Coast Path. While a total of four signposts are costed here, the number and	Capital Cost £200 based on four signposts to be delivered across the LMLCP; approx. £50 per signpost £500 for one DDA compliant metal gate Replacement Timeline Signposts and metal gate to be replaced every 10 years Total In-Perpetuity Cost (over 80 years) including capital and replacement costs £200 (four signposts) + £500 (one metal gate) + £4,900 (in-perpetuity replacement costs) = £5,600	,,,,	Medium (optional deliverable)
2	parallel to the Spade Oak Perimeter Path and leading	(see Figure 5 below) and comprises an old, slippery wooden footbridge. Both the path		Increase footfall in this section of the LMLCP. No visitors were encountered here during the site visit, and this may partly be due to the condition of the path.	,

¹ The locations are shown in Figure 3.

² Approximate pricings have been obtained from the Estimating Price Guide for Path Projects (2020). Available at: https://www.pathsforall.org.uk/mediaLibrary/other/english/estimating-price-guide-for-path-projects paths-forall -rev1-dec-2019-2.pdf [Accessed on the 31/07/2020]. Refined costs will be required as the projects get developed and should involve experienced cost consultants and quantity surveyors

³ It is to be noted that the mitigation measures will have to be secured 'in perpetuity' (over at least 80 years) and an indicative maintenance timeline for relevant interventions is therefore provided in brackets.

⁴ Please see a further explanation of which interventions should be delivered to avoid adverse effects on the site integrity of the Burnham Beeches SAC in paragraph 4.18.

Location Number ¹	Description	Proposed Measure	Initial Ballpark Cost Estimate ² (capital, maintenance and replacement costs as appropriate ³)	Likely Impact	Priority (low, medium, high) ⁴
	the Spade Oak Nature Reserve			Providing a base of geotextile and a georigid mesh / grid will provide support on softer ground, allow water to percolate and mitigate against water-	
			£740 for V drainage ditches along a 200m section of footpath; approx. £3.70 per linear metre for V drainage ditches	logging.	
			£2,500 for a 5m long wooden footbridge; approx. £500 per m² of bridge (bridge costs are difficult to price due to a wide range in design, materials and		
			complexity) Maintenance Cost £60 for annual vegetation strimming		
			along 200m of path; approx. £0.30 per m ² £30 for annual litter picking along 200m of path; approx. £0.15 per m ²		
			£2,400 for 10-yearly path repair works along 200m of path; £12 per m² Total In-Perpetuity Cost (over 80 years)		
			including capital and maintenance costs £5000 (path works) + £740 (V drainage) + £2,500 (wooden footbridge) + £4,800 (in- perpetuity vegetation strimming) +		
			£2,400 (in-perpetuity litter picking) + £16,800 (in-perpetuity path repair works) = £32,240		

Number ¹	Description		maintenance and replacement costs as appropriate ³)	medium, high) ⁴
3	Existing footpath along scrubland and field margins to the northern outer edge of the Spade Oak Nature Reserve	cycleway here that runs along the field outside the northern edge of the lake from Coldmoorholme Lane (where a new level access entrance is required) to Muschallik Road is considered to be a highly suitable mitigation measure. This is already a section of the LMLCP that is very appealing to walkers (see Figure 2).	Capital Cost £36,740 for a 1,100m section of bound gravel cycle path; approx. £33.40 per m² of bound gravel path Maintenance Cost £330 for annual vegetation strimming along 1,100m of path; approx. £0.30 per m² £165 for annual litter picking along 1,100m of path; approx. £0.15 per m² £13,200 for 10-yearly path repair works along 200m of path; £12 per m² Other Cost £6,650 surveyor and legal fees ⁵ £5,000 one-off fee to landowner Total In-Perpetuity Cost (over 80 years) including capital, maintenance and other costs £36,740 (1,100m of bound gravel cycle path) + £26,400 (in-perpetuity vegetation strimming) + £13,200 (in-perpetuity litter picking) + £92,400 (in-perpetuity litter picking)	High ('must' deliverable)
			perpetuity path repair works) + £11,650	

Initial Ballpark Cost Estimate² (capital, Likely Impact

Priority (low,

Location Description

Proposed Measure

⁵ Surveyor and legal fees include a 33% flexibility bias.

Number ¹	Description	Troposed Medaute	maintenance and replacement costs as appropriate ³)		medium	
			(other cost) = £180,390			
4	Perimeter Path meets The Moor (intersection of footpath with a tarmacked road)	This is currently the only dog waste bin in the entire site (see Figure 6). It is recommended that at least 4 dog waste bins are installed near the main access points. These should be placed up to 100m into the site away from car parks or foot access points, because dogs typically defecate after they have been walked for some distance. In the wider area around the proposed dog waste receptacles there is also the opportunity to let dogs off the lead, roaming freely. Off-lead dogs are unlikely to affect the wildlife on site because the main roosting area on The Spit is not accessible and visually well shielded from the main paths. Dogs should be kept on lead on the roads traversing the LMLCP, including Church Road, The Moor and Muschallik Road.	£400 based on the provision of four dog waste bins; approx. £100 per bin Replacement Timeline Dog waste bins to be replaced every 10 years Annual Maintenance Cost	Reduce littering with dog waste bags (which was observed particularly in the western section of the LMLCP) and make the site more appealing for other user groups ⁶ . The ability to let dogs off the lead in large parts of the country park is likely to make the site very attractive to dog walkers, because a sense of freedom for their dogs is very important to dog owners. In most visitor surveys 'the ability to let dogs off the lead' ranks among the top three responses for visiting a site or making alternative destinations more attractive.	_	('must' ble)
5		The footpath gate to the south of the railway tracks is damaged and could be replaced.	CEOO (for a DDA acqualicate model cota)	A new gate would make this section of the site more appealing. It is also potentially a safety issue which will need addressing.	1	-

Proposed Measure

Location Description

Initial Ballpark Cost Estimate² (capital, Likely Impact

Priority (low,

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⁶ Footprint Ecology undertook a series of visitor surveys in Suitable Alternative Natural Greenspaces (SANGs) designed to reduce recreational pressure in the Thames Basin Heaths SPA. Visitors were asked about changes that would increase their visit frequency to the SANGs and 'provision of dog waste bins' was one of the key responses given. Fearnley H. & Floyd L. 2014. Results of on-site visitor survey work at Diamond Ridge Woods SANG. 45pp.

Location Number ¹	Description	Proposed Measure	Initial Ballpark Cost Estimate ² (capital, maintenance and replacement costs as appropriate ³)		Priority (low, medium, high) ⁴
			Replacement Timeline Gate to be replaced every 10 years Other Cost £3,990 surveyor and legal fees (Network Rail - landowner) ⁷ Total In-Perpetuity Cost (over 80 years) including capital replacement and other costs £500 (one metal gate) + £3,500 (inperpetuity replacement) + £3,990 (other cost) = £7,990		
6	proposed LMLCP comprising a section of the Thames Path; a long-distance footpath with high footfall	The ground below three of the gates is highly compacted and waterlogged, and people were observed to climb the fence to avoid puddles. Addressing local drainage and ground incline is recommended here. Furthermore, all three metal field gates need replacing to be Disability Discrimination Act (DDA) compliant.	Capital Cost £321 for 4m ⁸ of French drains to be installed at three gates; approx. £26.75 per linear metre of drain £2,632.20 for 42.8m ² of ground repair works ⁹ (e.g. releveling and adjusting incline) at three gates; approx. £20.50 per m ² of repairs £1,500 for three metal field gates; approx. £500 per DDA compliant gate	discourage visitors from climbing over fences (with	Medium (optional deliverable)

Surveyor and legal fees include a 33% flexibility bias.
 The area identified for drainage requirement was based on a site visit and subsequent measurement of wet ground on satellite imagery.
 The area identified for ground repair works was based on a site visit and subsequent measurement of wet ground on satellite imagery.

Location Number ¹	Description	Initial Ballpark Cost Estimate ² (capital, maintenance and replacement costs as appropriate ³)	Likely Impact	Priority (low, medium, high) ⁴
		Replacement Timeline Metal field gates to be replaced every 10 years Other Cost £2,660 surveyor and legal fees (Randall – landowner) ¹⁰ Total In-Perpetuity Cost (over 80 years) including capital and replacement costs £321 (12m of French drains) + £2,632.20 (ground repairs) + £1,500 (three metal field gates) + £10,500 (10-yearly replacement of gates) + £2,660 (other cost) = £17,613.20		
7	Footpath leading past the Crowne Plaza Marlow and connecting the Thames Path with the area around Westhorpe House; key area for improvement as the path enables a circular trail around the LMLCP	Capital Cost £25,850 for a section of 1,034m of unbound or semi-bound 'Half Tray with Geotextile and Georigid' standard footpath, including materials such as gravel or resin-bound hoggin; approx. £25 per m² of footpath Maintenance Cost £310.20 for annual vegetation strimming along 1,034m of path; approx. £0.30 per	-	High ('must' deliverable)

 $^{^{\}rm 10}$ Surveyor and legal fees include a 33% flexibility bias.

Location Number ¹	Description	Proposed Measure	Initial Ballpark Cost Estimate ² (capital, maintenance and replacement costs as appropriate ³)		Priority (low, medium, high) ⁴
			f155.10 for annual litter picking along 1,034m of path; approx. £0.15 per m² £12,408 for 10-yearly path repair works along 1,034m of path; £12 per m² Other Cost £3,990 surveyor and legal fees¹¹ £4,000 one-off payment to landowner Total In-Perpetuity Cost (over 80 years) including capital, maintenance and other costs £25,850 (footpath provision) + £24,816 (in-perpetuity vegetation strimming) + £12,408 (in-perpetuity litter picking) + 86,856 (in-perpetuity path repair works) + £7,990 (other cost) = £157,920		
8		This location offers an opportunity for improving signage, as it is easy to get lost here (for example heading towards the A404 or private land belonging to the angling club); a new waymarker could signpost the LMLCP circular trail.	Capital Cost £215 for one timber post with finger blades Replacement Timeline Timber post to be replaced every 10 years In-Perpetuity Cost (over 80 years) of	making the park more appealing to visitors and	Medium (optional deliverable)

 $^{^{\}rm 11}$ Surveyor and legal fees include a 33% flexibility bias.

Location Number ¹	Description	Proposed Measure	Initial Ballpark Cost Estimate ² (capital, maintenance and replacement costs as appropriate ³)		Priority (low, medium, high) ⁴
			capital and replacement costs £215 (timber post with finger blades) + 1,505 (in-perpetuity replacement) = £1,720		
9	to the north of the western lakes and Westhorpe House	BC's proposal to extend / enhance the cycleway here is considered to be an effective intervention, as there currently is only a very short well surfaced (compacted gravel) cycle path section to the north of Westhorpe House. The surfacing could be improved along the entire section of this path. It is to be noted that this will require a new Permissive Path Agreement with the landowner(s).	£17,702 for a section of 530m bound gravel cycle path; approx. £33.40 per m² of bound gravel path Maintenance Cost £159 for annual vegetation strimming along 530m of path; approx. £0.30 per m² £79.50 for annual litter picking along 530m of path; approx. £0.15 per m² £6,360 for 10-yearly path repair works along 530m of path; £12 per m² Other Cost £3,990 surveyor and legal fees (landowner to be confirmed)¹² £4,000 one-off payment to landowner Total In-Perpetuity Cost (over 80 years) including capital, maintenance and other costs	This measure would increase the attractiveness of the LMLCP to cyclists and would align the SPD with Natural England's recommendation to make the park more accessible to sustainable travel modes.	

 $^{^{\}rm 12}$ Surveyor and legal fees include a 33% flexibility bias.

Location Number ¹	Description		Initial Ballpark Cost Estimate ² (capital, maintenance and replacement costs as appropriate ³)		Priority (low, medium, high) ⁴
			£17,702 (530m of bound gravel cycle path) + 12,720 (in-perpetuity vegetation strimming) + 6,360 (in-perpetuity litter picking) + 44,520 (in-perpetuity path repair works) + £7,990 (other cost) = £89,292		
10	Nature Reserve adjacent to The Moor and starting point to the Spade Oak Perimeter Path; key point in the LMLCP overlooking The Spit (a roosting site for waders and wildfowl)	The information board at the viewpoint could be updated with more detailed information on the species present and the ecological importance of decommissioned quarries. A wide range of bird species were observed during the site visit, including red kite, common buzzard, swift, house martin, sand martin, common tern and lapwing, highlighting that the reserve is likely to be appealing to laymen as well as wildlife enthusiasts. Also, a bench and / or picnic tables here would offer visitors the opportunity for a rest, as there is currently no seating anywhere in the LMLCP (see Figure 5).	Capital Cost £825 for one timber bench £2,700 for one information board Replacement Timeline Timber bench and information board to be replaced every 10 years Total In-Perpetuity Cost (over 80 years) including capital and replacement costs £825 (for one timber bench) + £2,700 (for one information board) + £24,675 (inperpetuity replacement) = £28,200	Installation of these features would enhance the attractiveness of the viewpoint and may increase visitor footfall.	Medium (optional deliverable)
11	Spade Oak Perimeter Path	Several locations (currently used mainly by anglers) provide expansive views over the lake and there is the opportunity to enhance these with benches. Furthermore, there are several common tern (species of amber conservation status in the UK) nest floats and an information board on this conservation project may be attractive (see Figure 6).	Capital Cost £825 for one timber bench £2,700 for one information board Replacement Timeline Timber bench and information board to be replaced every 10 years	The installation of seating opportunities and / or an information board would make the southwestern section of the Spade Oak Perimeter Path more appealing and likely increase footfall; it makes completing a circular trail more attractive.	High ('must' deliverable)

Location Number ¹	Description	Proposed Measure	Initial Ballpark Cost Estimate ² (capital, maintenance and replacement costs as appropriate ³)	Likely Impact	Priority (low, medium, high) ⁴
			Total In-Perpetuity Costs (over 80 years) including capital and replacement costs £825 (two timber benches) + £2,700 (two information boards) + 24,675 (inperpetuity replacement costs) = £28,200		
12	Oak Perimeter Path, eventually	The path here is very muddy in places and would benefit from resurfacing. Similar to location 11, there are several locations, currently used by anglers, where benches would provide an appealing view over the nature reserve. It is acknowledged that the northward section of this footpath has already been improved, but still requires seating. The section of path still needing improvement (i.e. the 468m), lies to the south of Spade Oak.	£11,700 based on a 468m section of unbound or semi-bound 'Half Tray with Geotextile and Georigid' footpath, including materials such as gravel or resinbound hoggin; approx. £25 per m² of	Resurfacing the path and providing seating opportunities would make this section of the Spade Oak Perimeter Path more appealing and the circular trail more attractive. Providing a base of geotextile and a georigid mesh / grid will provide support on softer ground, allow water to percolate and mitigate against waterlogging.	Medium (optional deliverable)

Location Number ¹	Description	Proposed Measure	Initial Ballpark Cost Estimate ² (capital, maintenance and replacement costs as appropriate ³)		Priority (low, medium, high) ⁴
			Total In-Perpetuity Cost (over 80 years) including capital and maintenance costs £11,700 (468m of footpath) + £1,650 (one timber bench) + £11,232 (in-perpetuity vegetation strimming) + £5,616 (in-perpetuity litter picking) + £11,550 (in-perpetuity replacement) + 39,312 (in-perpetuity path repair works) = £81,060		
13	Spade Oak Perimeter Path and	The existing 'wildlife area' and 'danger – quarry water' signage look very worn / have fallen off. These could be replaced and a waymarker could signpost the Spade Oak Perimeter Path and the wider LMLCP circular trail.	Capital Cost £215 for one timber post with finger blades £2,700 for one information board Replacement Timeline Timber post and information board to be replaced every 10 years Total In-Perpetuity Cost (over 80 years) including capital and replacement costs £215 (for one timber post with finger blades) + £2,700 (for one information board) + £20,405 (in-perpetuity replacement costs) = £23,320	The provision of new signage and wayfinding at this location would help orientate visitors and increase the likelihood that a circular trail is completed.	High ('must' deliverable)
14	Near the Spit	BC is considering a new car park near The Spit (specifically along the concrete road or within the old gravel yard) to increase the visitor capacity of the LMLCP and enhance	Capital Cost £12,000 for 60m ² of car park for approx.	An increase in the parking capacity is a key predictor of visitor numbers to a site 16 and it is likely that this would enhance the capacity of the	` `

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¹⁶ Weitowitz DC, Panter C, Hoskin R & Liley D. (2019). Parking provision at nature conservation sites and its implications for visitor use. Landscape and Urban Planning 190: 1-10.

Location Number ¹	Description	Proposed Measure	Initial Ballpark Cost Estimate ² (capital, maintenance and replacement costs as appropriate ³)	Likely Impact	Priority (low, medium, high) ⁴
		access to the northern section of the site. The Spit forms the tranquil core and is the main roosting site for waterfowl and waders in the LMLCP. The car park would lie within approx. 200-300m of the roost site, which may result in disturbance effects during and post-construction (depending on the construction machinery used 13 and the volume of traffic). Other options for additional parking opportunities have also emerged, including expansion of the Athletics Track car park along Westhorpe Farm Lane or a more formalised	20 parking spaces ¹⁴ ; approx. £200 per m ²	LMLCP to absorb more recreational pressure, including from the Hollands Farm development.	
		landscaped version of parking in Carington field. During the site visit it was noted that visitors currently use parking on Muschallik Road – known as Fisherman's car park – adjacent to the entrance to the Little Marlow Waste Water Treatment Works. Due to the importance of The Spit for wildlife, AECOM advises that as a preferred option the expansion of parking along Muschallik Road is explored instead of a car park on the Spit. It is noted that there is a car park owned by Little Marlow Parish Council past the Spade Oak Public House car park further down on Coldmoorholme Lane. However, most visitors parking here were observed to access the Thames Path rather than the LMLCP. Furthermore, by extending the parking capacity in a different part of the LMLCP (e.g. on Westhorpe Farm Lane or Muschallik Road), this would	£1,890 for 10-yearly repair works on 60m² of car park; £31.50 per m² Total In-Perpetuity Cost (over 80 years) including capital and maintenance costs £12,000 (for a medium-sized car park with 20 parking spaces) + £1,440 (inperpetuity vegetation strimming) + £720 (in-perpetuity litter picking) + £13,230 (in-perpetuity repair works) = £27,390		

¹³ The Waterbird and Disturbance Mitigation Toolkit provides detailed background on the distances at which different noise levels may lead to the disturbance of waterbirds.

¹⁴ Natural England uses a rule of thumb of one parking space per hectare for SANG (for example in the Thames Basin Heaths SPA area). The LMLCP is not proposed as SANG and has an area of approx. 321ha. It is not deemed appropriate to provide a very large car park in the LMLCP, given that the site is already served by two car parks. Therefore, a medium-sized car park providing for 20 spaces is costed here.

¹⁵ A medium car park (for up to about 20 cars). Excavate to 300mm depth and fill to 150mm with clean hardcore. Surface with minimum 150mm of new hardcore (Type 1) with topping of fines to bind surface. Each parking bay requires 5m x 3m, plus turning space (1.5 x car length).

Location Number ¹	Description		Initial Ballpark Cost Estimate ² (capital, maintenance and replacement costs as appropriate ³)		Priority (low, medium, high) ⁴
		enhance the accessibility of the Country Park in other areas. The different options for additional parking provision should be scoped out further and consulted upon with Natural England at the earliest opportunity, in order to identify the preferred solution for the outline planning application.			
15 (not on map)		A leaflet ¹⁷ advertising the key circular routes through the LMLCP could be produced and distributed in households of the Hollands Farm development. Alternatively, routes could be advertised digitally, which is more environmentally friendly and likely to reduce cost, on the web presence of the developer's management company and/or Buckinghamshire Council. Key information on the routes (e.g. distance, difficulty, access information) could be provided in this brochure. Furthermore, the information leaflet may be used as an educational platform to provide details on the history and wildlife of the Little Marlow Lakes, as well as the Countryside Code.	Capital Cost £124 for two rounds of leaflet distribution in the Hollands Farm development; approx. £62 for one round of 500 double-sided A6 leaflets ¹⁸ (excl. design of content and distribution)	Providing additional advertisement for the LMLCP is likely to increase the recreational footfall within the site. Furthermore, the provision of routes with descriptions is likely to be an additional attraction. Visitors like to be guided on visits, which gives a sense of accomplishment (see success of routes on the ViewRanger application).	Medium (optional deliverable)
16 (not on map)	,	This measure provides for a part-time delivery officer role with the purpose to administer funds, review project progress and liaise with relevant stakeholders (e.g. Natural England or private landowners). In other projects (e.g. BirdAware Solent), officers are full-time employed, but it is considered that a part-time role would suffice to	''	The delivery officer role will ensure that developer contributions are utilised appropriately and that mitigation interventions are achieved on time. A dedicated officer role is considered vital to ensure the adequate delivery of the proposals	

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¹⁷ A leaflet produced by the Chilterns Conservation Board covers a section of the site and is a useful source for inspiration. Available at: https://www.chilternsaonb.org/uploads/files/Walks and Rides/Access to the Countryside/LittleMarlowWaterWalk.pdf [Accessed on the 31/07/2020]

¹⁸ Guide price for leaflet printing obtained from a web search at: https://www.alocalprinter.co.uk/digital-leaflet [Accessed on the 31/07/2020]

Location Number ¹	Description	Proposed Measure	Initial Ballpark Cost Estimate ² (capital, maintenance and replacement costs as appropriate ³)	Likely Impact	Priority (low, medium, high) ⁴
		oversee the LMLCP mitigation package. One of the key tasks of the delivery officer would be to ensure delivery of a suitable menu of mitigation measures in line with the phased delivery of the Hollands Farm development. For example, the number of mitigation measures delivered should take account of the priority of measures and the number of dwellings developed under each outline planning application. Currently, it is envisaged that two main phases of development will occur, constituting 80% and 20% of the total residential quantum respectively. The officer working hours could be adjusted according to the requirements of the role, with most input being required in the initial set-up phase. In line with this, the delivery officer role could be provided permanently in the first 5 years, with another 5 years of the role being spread over the remaining 75 years of the project (reflecting that the role would be limited to maintenance requirements after the initial project set-up phase).	provided over a total of 10 years (see column on the left).	such that the LMLCP represents a realistic alternative recreation destination to the Burnham Beeches SAC. In practice, the complexity and demands of a strategic delivery officer role make it unlikely that it is feasible to be taken on by someone alongside other duties.	
All		Total in-perpetuity costs for all proposed mitigation measures	£1,198,259 ²⁰		

¹⁹ Data provided by Buckinghamshire Council

²⁰ It is to be noted that this figure provides a very crude ballpark figure for the lifetime costings of the mitigation measures identified for LMLCP. The total in-perpetuity cost may differ significantly, for example based on the lengths of foot- and cycle paths enhanced / replaced, and / or the amount of repair works required.



Figure 1: Outer footpath running in parallel to the Spade Oak Perimeter Path (location 2 in table) showing extremely muddy ground.



Figure 2: Section of the LMLCP for which a cycleway is proposed (location 3 in table). The picture shows the appealing scenery with expansive fields to the right and scrubland to the left of the footpath.



Figure 3: The only dog waste bin in the entire LMLCP (location 4 in table). More of these could be situated near the main access points to keep the park free of litter and make it more appealing to visitors.



Figure 4: Footpath leading past the Crowne Plaza, connecting the Thames Path with the area around Westhorpe House (location 7 in table). This view northward shows parts of the muddy track, an old slippery footbridge and overgrowth.



Figure 5: Viewpoint over the Spade Oak Nature Reserve and the Spit, the key spot for wildlife watching (location 10 in table). A more informative information board and benches could be installed here.



Figure 6: View from the southern section of the Spade Oak Perimeter Path over the tern nest floats (location 11 in table). This area would benefit from enhancements such as seating opportunities and an information board.