

Committee(s):	Date(s):
Hampstead Heath Consultative Committee	12 November 2013
Subject: Hampstead Heath Ponds Project – Preferred Options Report and Non-Statutory Consultation	Public
Report of: Superintendent of Hampstead Heath	For Discussion
<p>Summary</p> <p>Following consultation with the Ponds Project Stakeholder Group, two “preferred options” have been produced for each chain of ponds. These options are detailed in the appended Preferred Options Report.</p> <p>Both sets of options meet the project objectives to improve dam safety in accordance with standard industry guidelines whilst as far as possible preserving the Heath as a natural open space. A by-product of being able to safely pass the Probable Maximum Flood in all preferred options is that the standard of flood protection afforded to communities downstream where there is no dam failure is also improved.</p> <p>This report also sets out the engagement work that has taken place over the past fifteen months leading up to the development of the Preferred Options. It includes a summary of the engagement with the Hampstead Heath Ponds Project Stakeholder Group as well as with staff and the general public on the development of preferred options for meeting the City’s duties as a responsible owner of reservoirs whilst as far as possible mitigating the impact of the works in accordance with the Heath’s foundation legislation. Overall the strategic input, particularly from the Ponds Project Stakeholder Group has been integral to the development of options that seek to minimise the impact on the Heath’s landscape. At this time however it seems unlikely that a consensus will be reached on the Preferred Options by all groups represented.</p> <p>The report also sets out the proposed consultation methodology to be implemented by specialist consultants in undertaking the non-statutory public consultation over the coming winter period.</p> <p>Recommendation(s)</p> <p>Members are asked to receive:</p> <ul style="list-style-type: none"> • the views of the Hampstead Heath Ponds Project Stakeholder Group as set out in the various appendices to this report (principally 1 and 4); • the Report of the Strategic Landscape Architect on Stakeholder Engagement to date; <p>Members are asked to provide their views on the:</p> <ul style="list-style-type: none"> • Hampstead Heath Ponds Project Preferred Options Report; • consultation methodology for the non-statutory consultation period (November 2013 to February 2014) to receive the views of the wider public on the Preferred Options for the Hampstead Heath Ponds Project. 	

Main Report

Introduction

1. Approval was given by the Court of Common Council on 14th July 2011 to proceed with the project to upgrade the pond dams on the Hampstead and Highgate chains. The aims of the project are to reduce the current risk of pond overtopping, embankment erosion, failure and potential loss of life downstream; ensure compliance with the existing requirements of the Reservoirs Act 1975 together with the additional expected requirements under the Flood and Water Management Act 2010 while meeting the obligations of the Hampstead Heath Act 1871; and improving water quality. At the same time it seeks to achieve other environmental gains through, for example, habitat creation.
2. Industry guidance and best practice to support the legal framework is set out in the Institution of Civil Engineers (ICE) "Floods and Reservoirs Safety" and requires that the Heath dams must be able to pass a Probable Maximum Flood (PMF) – these are regionally derived statistical figures for the maximum amount of water that can be released from the sky. The ICE consider that if a dam can safely accommodate the PMF event, then it is reasonable to state that the probability of dam failure has been "virtually eliminated".
3. It is the dams' function to store or pass water safely without risk of failure. The outflow from the Highgate chain of ponds in a PMF event in the current situation is equivalent to 38 tonnes of water per second passing over or around the dam.

Current Position

4. To help support your Committee in understanding the complex issues associated with the Hampstead Heath Ponds Project (referred to at that time as the Flood and Water Management Project), Management Committee approved the involvement of stakeholder representatives in July 2012:
"to provide views and advice to the Hampstead Heath Consultative Committee in relation to the Flood and Water Management Project within the context of the Hampstead Heath Act 1871 and relevant reservoirs legislation."
5. In order to ensure that landscape and environmental considerations were championed within the project and to support stakeholders in this, the City appointed a Strategic Landscape Architect (SLA), with the support of the Stakeholder Group. The SLA's principle role has been to champion the landscape of the Heath, ensuring that the design is environmentally led to mitigate its impact.
6. The SLA acts as a critical friend during the design process and as such he has provided commentary on the impact of the design proposals. As an independent appointment, separate from the Design Team, the SLA is able to

influence the development of the design options without being prejudiced by partnership contract arrangements.

7. In December 2012 the Management Committee having received the views of your Committee approved a Design Review Method Statement prepared by Atkins as lead designers for implementing the first phase of the Hampstead Heath Ponds Project. This work covered the:
 - fundamental design review of the hydrology of the site, including Haycock's design and input data, to establish the size of flood that has to be designed for;
 - an environmental baseline review undertaken in parallel to the fundamental design review identifying constraints that have helped to inform the option selection and identification process;
 - proposed outline approach to consultation to respond adequately to the interest and concern among stakeholders and the wider public generally about the project;
 - planning application strategy, including the planning programme that will list the main permissions required;
 - options development and evaluation to arrive at a preferred solution.
8. The April 2013 Management Committee was delayed until early May 2013 to enable representatives of the Stakeholder Group and members of your Committee to provide views and receive clarification of issues associated with the Design Flood Assessment. The City of London agreed that before any work commenced on preparing options and detailed design solutions the Design Team would undertake a Fundamental Review of the basis for the whole project. This work was deemed necessary by the City Corporation following recommendations by Aecom who undertook an independent peer review of the original feasibility study and was also requested by the members of the Hampstead Heath Ponds Project Stakeholder Group.
9. The review utilised industry standards and software, ensuring that the work would be in line with current industry best practice to determine the Probable Maximum Flood (PMF) and its impact on the earth dams across the Hampstead and Highgate chains of ponds.
10. The conclusion of this report was that:

"Floods estimated by Atkins were generally 30% to 50% lower than those estimated by Haycock. Even with reduced flood volumes water would still flow over the dam crests in events ranging from the 1 in 5 year to the PMF events. For example Stock Pond will overtop during the 1 in 5 year event while Hampstead No 1 pond will start to overtop between the 1 in 1000 year flood and the 1 in 10,000 year flood. The speeds of the flows on the outer slope in conjunction with the uneven nature of the slopes with coarse vegetation are such that the embankments are likely to suffer erosion damage which in some cases could lead to a breach. To reduce the risk of breaching, improvements need to be made to some of the dams to enable them to cope with these floods, although the extent of the work needed should be less than that proposed by Haycock".

11. The Management Committee approved this Design Flood Assessment as the basis for the continuation of the Hampstead Heath Ponds Project and development of the preferred design options at a special meeting of the Committee held on the 9th May 2013.
12. Having approved the basis upon which the options for the development of the project would need to be designed and following significant representation from the Stakeholder Group and representatives of your Committee, and whilst acknowledging the need to progress proposals 'with all deliberate speed', the City Corporation agreed to extend the timetable for development of the options by six months. This extension of time was welcomed by the Stakeholder Group thereby enabling greater engagement in the iterative process of refining the best options to meet the scheme objectives. In the Preferred Options Report at Appendix 1 the overview of the options development process is shown.
13. This commenced with development of a Constrained Options Report. The process of developing these options began with an unconstrained options list in the form of a matrix of generic options. This was used to collate feedback from stakeholders, Heath staff and the wider public to identify constraints.
14. The preliminary list of constrained options was reviewed in a workshop involving members of the Ponds Project Stakeholder Group, the City of London including Heath staff, and Atkins on the 18th May 2013. At this workshop there was a broad agreement between all present that the strategic concept of providing extra flood storage capacity by focusing major works at the middle of each pond chain, at less sensitive locations, was generally a sound principal to adopt. Feedback and views were provided to the Design Team and a final Constrained Options Report was issued on Friday 7th June 2013.
15. The Constrained Options Report also established the preferred approach to solving dam safety; that treating the two chains of ponds as systems, rather than focussing all works on the current three designated statutory reservoirs provides a more holistic method of spreading the works, preserving the Heath's natural aspect and future proofing against further works if anticipated legislative changes that have already been enacted are fully implemented. In addition the design principles and philosophy were clearly set out.
16. A further Stakeholder Group workshop on 13th July focused on landscape mitigation, pond restoration, water quality improvements and ecological management. Engineering options were also discussed at length using flowcharts showing trade-offs and consequences of the various options considered, alongside photomontage visualisations together with detailed options descriptions and comparisons.
17. It was apparent from this workshop that there remained strong views both for and against a proposed 3m additional dam raising at the Boating Pond, whilst on the Hampstead chain of ponds the loss of 2 plane trees was not well received. This workshop formed the basis for the issue of the second iteration of the shortlist options. Following feedback the final Shortlist Options report was issued on Friday 6th September 2013.

18. The feedback from the Shortlist Options report is set out in Appendix 2 of this report, together with responses to all who responded.
19. The final Stakeholder Group workshop in the development of the preferred outline options took place on Saturday 14th September 2013. At this meeting the Design Team set out the basis for its two preferred options. It was apparent at that meeting that there were still major concerns about the provision of an additional 3m dam at the Boating Pond. A new “Option P” on the Hampstead chain of ponds was proposed that would result in the loss of only one Plane tree at the Hampstead No. 2 causeway.
20. Further refinement of the modelling of the Probable Maximum Flood on the Highgate chain of ponds enabled Atkins to discount the 3m dam option at the Boating Pond, this information was presented to the Stakeholder Group at its meeting on the 30th September 2013.
21. A log of all questions that have been raised relating to the project, together with responses from Atkins or the City Corporation have been captured and these are included at Appendix 3 of this report.

Preferred Options

22. Atkins Preferred Options Report which is appended to this report (Appendix 1) meets the following key objectives of the project as they:
 - ensure City of London compliance with current and expected reservoir legislation;
 - improve dam safety on all the dams in the chains;
 - preserve as far as possible the Heath’s natural aspect;
 - focus major works at the middle of each chain of ponds (see earlier paragraph 14);
 - introduce a passive system (no reliance on mechanical or human intervention);
 - maintain (or increase) the standard of protection downstream in other flooding scenarios (where there is no dam failure);
 - do not increase the rate of flow discharged from the last dam in any flood event, compared to the flows expected in the existing scenario.
23. In addition to the works set out below all ponds require works to install new spillways. The provisional size of these spillways is indicated on page 10 and page 34 of the Preferred Options Report.

Highgate Chain

	Option 4	Option 6
Stock Pond	Crest Restoration by 0.5m maximum	Crest Restoration by 0.5m maximum
Kenwood Ladies Pond	Crest restoration by 0.2m maximum	Crest restoration by 0.2m maximum
Bird Sanctuary Pond	Crest restoration by 0.1m maximum	Crest restoration by 0.1m maximum
Model Boating Pond	2m	2.5m
Highgate Men's Bathing Pond	1.5m (wall)	1m (wall)
Highgate No. 1 Pond	1.25m (wall)	1.25m (wall)
Standard of Protection	1 in 1000 year	1 in 1000 year

Hampstead Chain

	Option M	Option P
Vale of Health Pond	Crest restoration 0.6m maximum	Crest restoration 0.6m maximum
Viaduct Pond	Crest restoration 0.2m maximum	Crest restoration 0.2m maximum
New Catchpit dam	5.6m high new earth embankment	5.6m high new earth embankment
Mixed Bathing Pond	1m	2m (embankment or wall combination)
Hampstead No. 2	3x3m box culverts	0.5m wall, 1x4.5m box culvert
Hampstead No. 1	1x4.5m box culvert	1x4.5m box culvert
Standard of Protection	1 in 1000 year	1 in 10,000 year
Plane tree loss on Hampstead No. 2	2	1

24. Although not a design objective, as a consequence of the dams being designed to pass the PMF safely, there is an improved standard of flood protection for people living downstream of the ponds where there is no dam failure. In other words, more floodwater from higher return period events would be temporarily stored below the spillway level. Less water would therefore be flowing overland towards Brookfield Mansions from the last pond, and more water would be slowly passed through the overflow pipes into the sewer system after the storm has passed.
25. The Preferred Options Report demonstrates through the suggestions that have now been incorporated in the design options how vital the Ponds Project Stakeholder Group has been in influencing the options that have been developed. It also sets out which suggestions have been discounted.

Feedback on the Preferred Options Report

26. Following the issue of the Preferred Option Report on the 4th October members of the Stakeholder Group were asked to provide their formal views in writing by Sunday 20th October 2013. These responses are all appended to the Preferred Options Report (see Appendix 1). At the Ponds Project Stakeholder Group meeting on the 21st October 2013 each Group was asked to provide its view on the Preferred Options Report. The Note of this meeting is also appended to this report.

27. There were a number of specific issues that were raised at the meeting:

Legal Position – following a meeting between the Heath & Hampstead Society and the City of London, including their respective counsel, it was hoped that a joint statement could be issued setting out the differences of opinion. At the time of drafting this report the release of the joint statement is imminent.

Spillways – serious concerns were expressed that whilst the size and depth of proposed spillways had been set out, their location and impact on the Heath landscape was not at all clear.

Raising of the Mixed Pond - one member was particularly concerned that with the installation of the proposed Catchpit dam no works to Mixed Pond should be required. It was confirmed that the downstream catchment still delivered significant amounts of water into the Mixed Pond. The two metre raising was a trade-off for the reduction in tree loss at Hampstead No. 2 pond.

Early Warning – the view was expressed that with Early Warning systems communities downstream could be given adequate warning of potential flooding risks. The City has previously invested in an “early-warning system” which monitors weather conditions locally and water levels in some ponds.

The Meteorological Office cannot however guarantee to provide the City Corporation with sufficiently robust forecasts to be able to predict a convection storm and thus the City cannot warrant that in a flood event such an early-warning system will mitigate potential loss of life. Post-completion of the works the City will still need an Emergency Plan to deal with potential flooding events.

The City Corporation also has to meet its obligations to satisfy the Panel Engineer that the PMF event can be passed safely without risk of failure of a dam.

Disproportionate Nature of the Works - There are concerns among the stakeholders that the proposals are disproportionate to the scale of the problem; however the City Corporation is following standard industry guidelines to achieve a design solution that can pass the PMF event without risk of dam failure and therefore avoid the need for the supervising engineer to call for a formal statutory inspection.

Volume of PMF versus Introduction of New Pipes – a view was expressed that insufficient consideration had been given to the use of pipes to pass water through the chain of ponds. As an example on the Highgate chain of ponds the volume of water in the PMF event passing over or around the dam

in the current situation is 38 tonnes of water per second. The size of pipes to accommodate this volume of water would need to be enormous.

In January 2012 the Stakeholder Group received a presentation from Thames Water who advised that the flood alleviation scheme installed under the Heath in the 1990's was only designed to accommodate a 1:70 year storm, this is significantly less than the design standards required to "virtually eliminate" the risk of dam failure. If the PMF event were to occur in this part of London then the sewer system would already be operating at capacity with sewers surcharging water.

Treatment of Margins of Ponds – concerns were expressed that the changes proposed at the Boating Pond would deprive users and particularly fishermen of access to the water's edge. It was explained that access around the pond would still be possible. Concern was also raised that the treatment of ponds appeared to be fairly generic and not specific to the respective ponds and that this could ultimately lead to ponds losing their intrinsic characteristics. An example was the introduction of floating islands that many considered inappropriate for the Heath environment.

Need for a Passive System - the use of valves was raised by several stakeholders as a means of potentially lowering water levels, however, placing City Corporation staff into a situation where they may be at risk in terms of operating valves is unacceptable.

Maintaining Access for Users - West Hill Court have identified that maintaining access around ponds, particularly for people with disabilities will be essential. There is also the need to ensure that opportunities for angling on the Heath are retained, particularly at the Model Boating Pond.

Strategic Landscape Architect - the SLA advised that he had prepared a Review of the process undertaken to date, this is also appended to this report (see Appendix 5).

28. Given the disparity of views expressed at the Stakeholder meeting, it seems increasingly unlikely that there will be a consensus reached from the various groups represented on the Stakeholder Group.

Non-Statutory Public Consultation

29. The City Corporation has appointed Resources for Change, a specialist engagement organisation to offer expert and independent advice on the non-statutory consultation process. Resources for Change have previously worked with the City Corporation; they managed the extensive consultation on the Heath's management plan in 2006/7, where over 1000 detailed responses were received on this strategic document.
30. The primary purpose of the public process is to inform the public about what is being done and why and also to give them the opportunity to inform the City of London's choice from the preferred options for the Hampstead and Highgate pond chains. The information giving aspect will need to address:

- Who are the City of London Corporation, what is their remit as a responsible body (managing some 12,000 acres of public open space), with responsibility as landowners for the dams on Hampstead Heath.
 - The legal context about why the project is required, in terms of current and anticipated reservoir legislation and the City Corporation's potential liability in the event of dam failure, and how this relates to the Heath's foundation legislation.
 - The hydrology and design standards that underpin dam safety and the societal risks associated with dam failure.
 - The work the City Corporation has undertaken engaging with the Ponds Project Stakeholder Group over the past 18 months and how this has influenced the design principles and philosophy. It will need to address why a "passive" solution rather than one that involves human or mechanical intervention as a design solution is essential.
 - Early contractor involvement and the need to engage collaboratively with the building contractor to help inform the options development and to seek to minimise impact of traffic movements both within the Heath and for the surrounding residential/business community.
31. Given that all options achieve the underlying design objectives, principles and philosophy, this consultation will be seeking to understand what preference consultees have on the Preferred Options, rather than a full options consultation to influence the design of the scheme, since its detailed aspects are only at an early illustrative stage.
32. There has been significant involvement already with key stakeholders. The purpose of this process, both its information giving and consultation, is therefore to 'reach out' to others who may be affected, with a focus on those with a defined interest in the issues raised by the Ponds Project work. These people are identified as:
- Users of the ponds and immediate surrounds
 - Those living within the vicinity of pond chain areas
 - Users of the Heath
 - Those having a specialist interest in the Heath e.g. birdwatchers
 - Schools and youth groups
 - Heath volunteers
 - Local businesses
 - Off site - those potentially impacted in the situation of a dam breach
 - Those who may potentially (or have reason to think they will) be impacted by the Ponds Project works
 - Wider public (considered beyond scope apart from information sharing)
33. A more detailed summary of the consultation process is appended to this report.

Next Steps

34. At its meeting on the 21 October 2013 the Stakeholders requested more detail on the next steps:
- During the consultation process the design team and Stakeholders will receive information on the views being expressed by people as part of the non-statutory consultation.
 - The appointment of the main contractor will enable further essential site investigations to be undertaken to consider issues such as where “borrow pits” might be located. This will help to inform the options development that will continue to be pursued during the consultation process, given the advice that the City Corporation needs to move towards a design solution and implementation of works “with all deliberate speed”.
 - At the end of the non-statutory consultation there will need to be an evaluation and analysis of the results, together with the information from the building contractor that will inform a decision on the “Preferred Design Solution”.
 - This information will then need to be presented to the Ponds Project Stakeholder Group, your Committee and ultimately the Management Committee during April 2014, who will then need to determine whether these solutions form the basis of a detailed planning application.
 - The City Corporation is looking to submit a detailed Planning Application during early June 2014.
 - There will then be a period of “Statutory Consultation” and another opportunity for the public to express their views on the proposed scheme.

Resources

35. At this stage the estimated overall project costs remain unchanged at £15.12m (+/- 20% at Q4 2010 prices). As part of the production of the options report the Design Team have undertaken a preliminary “overall order of costs of works”. At this stage of the project process the figures are commensurate with the estimated costs previously reported (despite the inclusion of the additional fees incurred resulting from the wider consultation process and the building of an additional dam on the Hampstead chain of ponds). The preliminary overall order of cost figures still, however, require significant refinement and will be influenced by the ground investigation surveys.

Corporate & Strategic Implications

36. The works support the strategic aim 'To provide valued services to London and the nation'. The scheme will improve community facilities, conserve/enhance landscape and biodiversity and contribute to a reduction in water pollution whilst meeting the City Corporation's legal obligations. The risk of any dam breach leading to serious downstream flooding of communities (and consequent exposure to potential claims and reputational damage) is mitigated.

Conclusion

37. Through its engagement with the Ponds Project Stakeholder Group championed by the independent Strategic Landscape Architect, the City Corporation has through an extensive iterative process arrived at the "Preferred Options" of its appointed designers, Atkins. All of these options meet the design objectives, principles and philosophy to pass the PMF event and as far as possible preserve the Heath's natural aspect.
38. The City Corporation is commencing a non-statutory consultation with the wider public to advise them on what is being done and why, and also giving users and other interested parties the opportunity to inform the City of London's decision on the "Preferred Design Solution". Members of the Consultative Committee are asked to provide their views on the consultation methodology.

Appendices

- Appendix 1 – Atkins Preferred Options Report and Feedback on the Preferred Options Report Received from the Ponds Project Stakeholder Group/West Hill Court
- Appendix 2 – Responses to Shortlist Option Report from Ponds Project Stakeholder Group/Others together with Responses.
- Appendix 3 – Log of all Questions and Responses relating to the Ponds Project to date.
- Appendix 4 - Notes of the Ponds Project Stakeholder Group meeting 21st October 2013
- Appendix 5 - Strategic Landscape Architect – Review of the Process to Date
- Appendix 6 – Consultation/Information Giving Methodology

Contacts:

Simon Lee

020 7332 3322

simon.lee@cityoflondon.gov.uk

Paul Monaghan

020 7332 3122

paul.monaghan@cityoflondon.gov.uk