Meeting Notes

Meeting Title	Poynton Pool Spillway Improvement Scheme		
Meeting purpose	At the Economic and Development committee meeting, held on 6th June 2023, a commitment was made to hold a face to face meeting, to include representatives of Friends of Poynton Pool, with the technical expert responsible for the Poynton Pool Spillway Improvement scheme proposals.		
Venue	Macclesfield Town Hall - Room ES2		
Date	Wednesday 26/7/23	**Time**	15:00 – 17:00
Attendee			
Cllr Mark Goldsmith	CEC Economy and Growth Committee representative - Chairperson		
Cllr Nick Mannion	CEC Economy and Growth Committee representative - Vice - Chairperson		
Cllr Jos Saunders	CEC member for Poynton East and Pott Shrigley		
Cllr Hayley Whittaker	CEC member for Poynton East and Pott Shrigley		
Cllr Laurence Clarke	Poynton Town Council representative – Town Councillor		
Haf Barlow	Poynton Town Council representative - Town Clerk		
Mike Ellison	Friends of Poynton Pool representative		
Mark Buttle	Friends of Poynton Pool Technical Advisor		
David Massingham	Friends of Poynton Pool representative		
Alan Brown (AB)	Jacobs - All Reservoir Panel Engineer (*Technical Expert*)		
Jon Berry	CEH - Project Manager		
Fay Price	CEH - Project Liaison Leader (*Chairperson*)		
Peter Skates	Acting Executive Director – Place & Director of Growth and Enterprise (*Decision taker for Pool*)		
Andy Kehoe	Head of Estates (*Undertaker for Pool*)		
Phil Windsor	Property Operations Advisor, Facilities Management (*Pool maintenance and management responsible officer*)		
Apologies			
Cllr Michael Beanland	CEC member for Poynton West and Adlington		
Peter Ding	Friends of Poynton Pool representative		

Item	Notes	Actions
1	Presentation of 30 slides given. It sets out the legislative context and guidance (7 slides) and specifics on Poynton Pool (copy attached but redacted for officially sensitive material)	
2	Questions were taken at the end of the presentation. This ensured the information in the presentation is given first.	

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3	FOPP noted it is not a political or protest group nor are they objectors to reservoir safety and acknowledge that works are needed to meet safety standards. FOPP wish to see measures that are proportional to the risk. Their concern is that the risk has been over stated as FoPP consider there are a number of inconsistencies in reports which impact on the flood modelling.	
4	Noted JBA (Jeremy Ben Associates) have undertaken the reservoir flood mapping for the EA. This information has been used in the Options report. This is nationally procured work and it is normal for this work to be used when considering reservoir risk. It was noted JBA have also provided advice to Poynton Town Council on the matter of Poynton Pool.	
5	**Question raised** – Is the precedent for safety of reservoirs greater than anything else? *(The question relates to slide 9 of presentation*) **Response** – Slide shows this to be the case	
6	**Question raised –** Aren't all legal cases taken on their own merit? **Response –** They are but precedent has been set. The slide highlights this	
7	**Question raised –**Have CEC consulted Stockport Council on the impacts of flooding on Bramhall? **Response** – There is no legal requirement as part of planning to tell owners up or down stream of the proposed changes at the pool. This is planning processes and law matter and not for the project team working on the pool proposals (or the Council as a reservoir undertaker) to change or address.	
8	Explanation that the 1:10000 year chance per year of a flood occurring is equal. If that flood event happened the dam failure would be catastrophic. If it occurred there is a projected total loss of 2 lives plus 3500 people at risk of flooding (with associated costs). The 1:10000 figure is the standard of safety set by the Institution of Civil Engineers for Category B dams. The probability of the dam failing is less than this	
9	Proposal being brought forward would see the lowest points along the embankment being raised by up to 18 cm. (*slide 24*) The scheme will regulate the crest to remove the low points to spread out overflow in extreme dam safety floods, and thus reduce the risk of concentrated local overflow leading to dam failure. Intention is to keep vegetation at waters edge to support screening. Where practicable Trees are being retained by locally reducing the width of, or realigning, the path	
10	Slide 21 shows that the pool currently sits near the 'unacceptable risk' area. The proposals would see that risk reduced to nearer the 'broadly acceptable' level. Taking a risk-based approach is appropriate and proportionate. Since incident at Todbrook a review of reservoir safety has moved towards a risk-based approach	
11	**Question raised –** What is proposed doesn't reduce the risk to broadly acceptable. How confident are we (CEC) won't be required to get the risk below the line in future years?	

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	Response – There is no guarantees that future changes won't see a more risk averse approach being required. Should an incident at a reservoir result in a national review of dam safety standards this could identify a need for greater risk reducing measures being needed. This will have a national impact not just at Poynton. Additionally, a different Panel Engineer could request different measures in future years.	
12	**Other Options considered –** Noted that the only option that would see no impact on trees is to permanently drain the pool (but this would impact trees in a section of dam that would need to be removed to achieve this), plus the undertaker would need to decide vegetation type in drained reservoir bed. It was also noted that all flood attenuation would then be lost, with water flowing directly downstream. This option was discounted early on as it loses the amenity value of the pool and would have a significant environmental impact.	
13	**Question raised –** There has been a planning application for housing in Stockport, does this make the risk is greater as there is more housing that could8 be affected? **Response –** This could change the dam category to Flood Category A, which means the safety check flood would increase to PMF. There is no legal obligation for the planning authority to inform upstream reservoir owner. However, as the Poynton Pool scheme is a planning matter EA is a statutory consultee and they can comment if the risk has changed. (**Note**: post the meeting PTC provided the Council (as undertaker) with information about the proposal. This is currently being considered, by the Council as a reservoir undertaker, but does not impact the need to progress with the works.)	
14	**Question raised** – Can the scheme be put on hold to allow water levels in the pool be recorded / to allow residents to feel engaged with – say for 6 - 12 months? **Response –** This is not at all likely to give meaningful information to support decision making. The type of event that the Council is advised it needs to protect against is an extreme event. Normal fluctuations in water level will not give any information that would be of use to determine whether or not the works needed to be done, unless one of these events occurs. It is clear that the Council as a reservoir undertaker would not want experience such an event without the protections needed. Based on the information presented, it is not clear what benefits would be given by delaying the process. It is clear that work needs to be done, and that delay would just increase the cost of the works, but not by so much that would prevent the works needing to be done.	
15	**FOPP Concerns** The are main points of concern are:	

	a) Jacobs model of estimated inflows in dam safety floods b) Failure risk that is based on the catchment model. c) Model not calibrated using actual flow data. d) drainage on farm land has not been considered e) the open cast mining pits which drain to Norbury Brook have not been considered in the modelling of flood inflows (thereby reducing risk) **General response to FOPP concerns –** What is set out by FOPP doesn't change the principles of reservoir safety and that works are needed at Poynton Pool to make it safer. **(Response Note –** From the above points of concern raised by FoPP point a is addressed in the response in item 16 of these notes point b, d and e are addressed in the response in item 20 of these notes point c is addressed in the response in item 14 of these notes	
16	**Question raised -** Noted there is a difference in inflow predictions in reports for the 1:1000 year event (6.9m^3/s In Jacobs report compared to 2.64m^3/S in Motts report) why is this 2.5 times higher now? **Response –** The modelling undertaken follows the recommended methodology for calculations. AB has undertaken his own checks using rapid method which FRS4 gives. This calculation agrees with Jacobs modelled and reported data. AB undertook to check the reason for this difference. **Post meeting Note**: The 2005 section 10 report where the 2.64m3/s is given has been located but this report does not provide a copy of the calculation. The 2005 report stated that "the rapid method" was used but attempts to replicate the 2005 estimate gives the same output as the Jacobs 2019 flood study. It is concluded that there must have been an arithmetic error in the 2005 estimate of floods	
17	**Question raised-** There is confusion in the flood study on AEP and return period The AEP is 1.5% for 150yr return period but in conclusions and recommendations it compares 1:50 vs 1:100. Which is correct? There are different versions with upper and lower limits on the graph. If the lower level is correct this suggests there is less need to do something at the pool **Response -** AB noted the comments and has reviewed them. A 2nd edition of the flood study will be issued to correct these discrepancies, but there is no material change in the conclusions	**AB** to review the reports and consider the points noted and either update reports or supplement with additional information as needed
18	**Question raised-** The likely loss of life (a) assumes there is no warning downstream. This would be easy to set up and would reduce risk. (b) The societal risk graph has also been displayed incorrectly giving a mis	

	calculation of the risk. Have points on the graph been copied onto boundaries incorrectly*? Checks done by FOPP Technical Advisor suggest the risk should be lower in current situation than the graph shows.* **Response –** a) Warning is not practicable, as at times of flood which could lead to dam failure the Emergency services will already be occupied dealing with flooding incidents and have no resources available to carry out evacuation of 3500 people. b) An updated edition of the options report will be published for planning application to address these discrepancies, but there is no material change in the conclusions c) The Risk assessment incremental damage is indeed 1.04, whereas the total damage due to floods and dam failure is 1.97. However, if the dam failed it is likely that everything would be blamed on CEC (not just the incremental damage due to dam failure).	
19	**Question raised-**it is assumed that the current spillway is coping but from modelling and regulations it suggests this level will regularly overtop and therefore the negative consequences will sit with CEC. If the levels are allowed to rise by 75mm over the crest Anglesey Drive could flood regularly. Have CEC considered this additional cost? **Response –** Further information on levels at Anglesey Drive needed to comment **Post meeting Note**: A site visit has taken place following the raising of this question. It is very apparent that the houses in this area are above the levels discussed in the question. In addition, Jacobs have obtained the publicly available LIDAR survey for the area, and used this to assess the risk to houses. This shows there is no risk of property flooding due to the proposed works. An additional chapter will be added in the FRA submitted for planning to cover this.	
20	**Question raised-** The environmental statement for open cast mining gave a detailed hydrological Statement. The pitts drain to Norbury Brook. This statement suggests that the catchment period for extreme storms will overtake the smaller catchment and normal drainage paths won't manage this sufficiently leading to them being overwhelmed. What is correct- the Jacobs flood study report or the Hydrology model? *(FOPP shared a plan showing the structures discussed in the question)* **Response –** Extreme storms overwhelm drainage systems in any case. A 1:5 yr storm uses a different catchment area than an extreme weather event. In the event that the Council is seeking to mitigate against water would overwhelm the structures discussed and water would flow downhill and into the Pool.	

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	Residents of Poynton are familiar with this mechanism from previous floods in Poynton where drainage systems are overwhelmed, and water then flows down the contours of the land.	
21	**General response to FOPP questions –** What is proposed doesn't change the principles of reservoir safety and that works are needed at Poynton Pool to make it safer. However, if there are inconsistencies in any Jacobs report these will be addressed, or additional information given to help explain the inconsistencies	
22	**Question raised**- the incremental damage is not consistent 1.04 and 1.97. How can this be correct? **Response** – The incremental damage is 1.04 but in reality, the Council is likely to be 'blamed' for all damage and loss of life in a dam failure event not just the incremental damage hence why 1.97 is being quoted in ALARP.	
23	**Question raised** – What about the reduction in risk using a warning system? **Response** – These are not acceptable as a mitigation solution. One location noted that where warning sirens were installed, they were later removed due to fault and false alarms. A Draw Down plan is useful for leakage, for example, but not catastrophic events. Draw down plans are legislative led by DEFRA and consist of on and off-site plan. (The latter is required under Civil Contingencies act 2004, to plan evacuation of 3500 people, associated road closures, measures to deal with flooding of key infrastructure such as sub-stations etc) Should a leak become a 'gusher' the draw down plan becomes redundant and an emergency off site plan then needs to be implemented. It is noted that the instillation of a level kerb on the top of the dam is a passive solution. In the event of over topping, it would mitigate the risk of dam collapse (and the subsequent uncontrolled release of water) without intervention. A warning system would not, and interventions of some form would be required to protect the public. If there was a flood, it is likely other areas would also be affected and both Council and emergency services would be very stretched.	
24	**Question raised** – Wouldn't a severe storm be known in advance and thus warnings could be used? **Response –** These events are very difficult to manage with emergency services stretched and possibly the event occurring at night, over a weekend or in a holiday period, when resources are at their lowest and difficult to mobilise. This presumes that the Council would be able to obtain all the resources needed to enact a plan to address the risk of overflow. The Council does not hold the level of resources needed to do this, nor would it be at all likely to obtain them in a timely manner in the event of an over topping incident. If this approach was adopted the	

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	Council would have to stand by for each and every significant storm event. It would have to divert its meagre resources away from other areas to focus on the reservoir. Weather forecasts can be wrong. Installing a passive system, as set out in the proposal addresses these issues. These events are not something anyone wants to see or have to live through. the 2016 and 2019 events were not on this scale.	
25	**Questions Raised-** How close are we to EA taking action on CEC? **Response –** The Supervising Engineer (and the Council as Reservoir Undertaker) have statutory responsibilities under the Act. . We are keeping the Supervising Engineer appraised on where we are, and the progress being made. Should the Council choose not to act or delay progressing the matter it is likely that the Supervising Engineer would have to consider acting. This would ultimately place an obligation on the Council to act.	
26	**Question Raised –** Is it possible to lower the level of the pool to give an improved freeboard? **Response –** This option would need a new spillway, cost would be higher and have a greater impact on the lake and local environment (including trees). An extreme of this option would be to completely draw down the pool. A full engineering standard was also discounted for cost and impact on trees on the dam crest. The current risk-based option which involves the raising of the crest to a consistent level increases the storage capacity, is cost efficient and has the lowest impact on trees whilst reducing the risk of an overtopping event	
27	**Question Raised –** So this option does not prevent over topping? **Response –** The proposal would see a level crest installed along the top of the dam. It is correct that it would not stop overtopping, but it offers greater protection against an extreme event. Water would flow over the whole crest at the same time reducing the force of the water. If this happened and the works were not done the dam would be eroded at the lowest point during an extreme event. This then could lead to the collapse of the dam, and the uncontrolled release of water. The uncontrolled release of water is the issue that we are seeking to mitigate against.	
28	**Question Raised –** Could the length of the raised crest be reduced in length? **Response-** No**.** The original S10 indicated 100m needed improvement but detailed surveys showed this would not address all low points. The proposal does not cover the whole of the dam, nor does it completely enclose the whole of the pool. The reason for this is it only covers the low points and to undertake the work elsewhere is not required at this time.	

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29	**Question Raised –** Has the suggested option of a new wall, supported by piles on the back of the (highway) footpath, been considered as suggested by FOPP? **Response –** Yes. It is noted that the Council has previously considered a similar proposal in the past as well. The proposal does not satisfy the principle of improving dam safety. A wall would need to be watertight to hold back water and structurally able to do so including not allowing water to flow underneath it. The visual impact of this proposal means the wall would be the height of the existing embankment, impacting a greater number of trees. Piling needs a sealant including which has the potential to have a structural impact on the existing embankment as the pile may go through the roots of trees resulting in destabilisation and further overall tress loss. Water flowing over such as wall and dropping onto the pavement below rather than down an embankment slope could lead to erosion of the path which may therefore need additional reinforcement.	
30	**Question Raised** – The Council is not taking the value of trees into account in its assessment of the costs. **Response – T**here is no requirement to take this into account as part of the planning process. However, the Council (as a planning applicant) proposes environmental mitigations, which include BNG benefits. Irrespective of this assessment the work needs to be done. Unfortunately, this does mean in the proposal that some trees need to be lost.	
31	**Question Raised –** Trees provide benefits to the structure of the dam. **Response –** AB referred to the documents in the presentation that set out the reasons that this is not the case. AB also cited his own direct experience where he has seen water flow along the root system of a tree.	
32	**Question Raised –** Have you considered making the crest resilient using plastic beams, screw piles or in situ reinforced concrete beams cast in short sections so there would be less impact on trees? **Response** – Yes. The Council has considered a similar option previously. A Screw pile option would be more expensive and can be easily undermined by water. Tree roots would be left in place which would allow flow under the beam, which is likely to cause internal erosion and is another potential failure mode of the dam. The option put forward has clay in intimate contact with the kerb, tree roots removed, and a buffer area included – this is to prevent transmission of water through the structure of the dam, and to prevent water flowing under the kerb, negating the protection that the solution it would offer. The proposed solution would not achieve this.	
33	**Question Raised** – when would the Council progress with the planning application?	

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	Response – As set out earlier in the meeting the Council has general obligations as a landowner around safety as well as obligations as an undertaker under the Reservoirs Act. It is in receipt of information which is clear about the Council's obligations and what steps it needs to take and therefore it does have to act.	
34	**Meeting closed 17:10**	