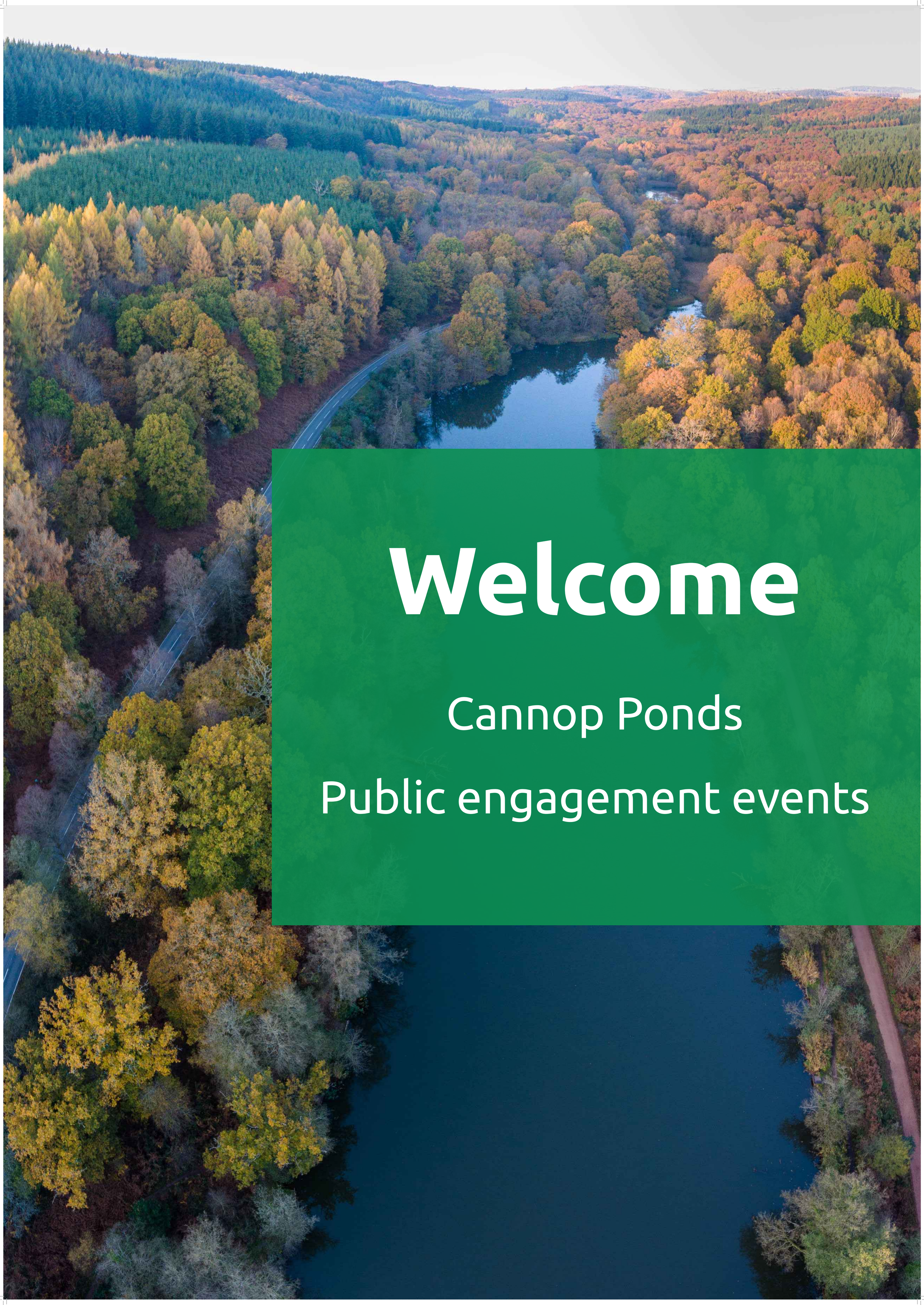


Welcome

Cannop Ponds

Public engagement events

Forestry England

Project background

Today is your opportunity to have your say about the Cannop Ponds project and see the range of options being considered.

There is a feedback form for you to leave any comments, and technical specialists available to answer your questions.

About Cannop Ponds

Cannop Ponds are two reservoirs within the Forest of Dean. The reservoirs were created in the 1820s through the construction of two dams across Cannop Brook.
The reservoirs originally provided water for industrial uses and have since become a valued part of the Forest.

Both dams have had a long history of repairs to stop leaks and fill holes to prevent failure. The dams don't meet modern requirements and now need substantial engineering work if they are to remain safe for generations to come.

The current situation

The Reservoirs Act 1975 sets out the required, independent inspection process for high risk reservoirs. The most recent inspections for Cannop Ponds identified measures that must be carried out to keep the dams in a safe condition.

Doing nothing is not an option.

The climate crisis is real. We are seeing more extreme weather events in England, which are predicted to worsen over time. We can expect more frequent and intense rainfall events. The risk of flooding along Cannop Brook is likely to increase.

We have a legal and moral obligation to protect the downstream communities from the damage which would be caused if either dam were to fail. Both dams require substantial engineering works to ensure that the risks are reduced to an acceptable level.

No decisions have been made on the way forward for Cannop Ponds. We are currently developing options for how to meet these requirements.

Reservoirs Act 1975

If the reservoirs are to be kept, the legally enforceable measures that we must carry out to ensure the safety of the dams will need to be addressed.

The MITIOS (Measures in the Interests of Safety) for the dams include the following:

Lower Cannop Pond
- The spillway be replaced

Upper Cannop Pond
- Upgrade works must be carried out to ensure that the flood capacity of the reservoir meets legal guidance
- Permanent pipework must be installed to ensure the water in the reservoir can be lowered in the event of an emergency

We are also required to improve the watertightness of the dams, as this is the cause of the dams' weakening.

The legal requirements of the Reservoirs Act 1975 would not need to be met if the dams were removed or adapted to ensure that water cannot be held back as they would no longer pose a risk to communities downstream.

Forestry England

What have we done so far?

Since appointing engineering design consultancy, Arup, we've started numerous surveys, investigations, and modelling work. These are a vital part of forming a clear picture of the constraints and opportunities of the site where the results will be used as part of the design process.

We've engaged with key stakeholders and local community representatives to gather feedback and local knowledge and will continue to engage with these stakeholders and statutory consultees throughout the design process.

Surveys, investigations & modelling

Ongoing or Completed

- Utilities checks
- Ecological Surveys covering;
  - terrestrial and aquatic habitats,
  - aquatic flora and fauna, and
  - protected species such as bats, birds, dormice, newts and otter
- Preliminary Heritage Impact Assessment
- River Channel Surveys
- Baseline Hydrological Catchment Modelling
- Topographic Survey of the dams and shoreline
- Bathymetric Survey of the reservoir basins
- Flood Studies

Planned

- Geophysical and Ground Investigations
- Further Topographic Survey
- Silt Depth Surveys
- Further Ecological Surveys

Engagement

- Meetings with the local MP and Councillors
- Stakeholder workshops and meetings with:
  - community organisations,
  - local businesses,
  - trusts and associations,
  - statutory consultees,
  - local council officers, and
  - the planning authority
- Public engagement

2020

Lower Cannop S10

Sinkhole appeared behind spillway wall of Lower Cannop Dam. Section 10 inspection led to MITIOS - 'The spillway to be replaced'.

Spillway Condition

While undertaking minor repairs, significant voiding was found and the method used for constructing the spillway was identified. Reactive works carried out.

2021

Flood Studies

Flood Studies for both reservoirs showed neither spillway had safe flood capacity.

Bathymetry Surveys

Survey carried out of the reservoir bed levels to confirm stored volume of water. Upper Cannop Pond > 25.000 m^3.

2022

Upper Cannop S10

Section 10 inspection carried out on Upper Cannop Pond leading to similar MITIOS, requiring significant works.

Options Phase

Arup appointed by Forestry England to identify available options, undertake baseline surveys, modelling, and concept designs.

2023

Forestry England

Project objective & vision

The main objective is to make the reservoirs safe. Any solutions which do not address the legal obligations of the Reservoirs Act must be discounted. It is for this reason that **doing nothing is not an option.**

Vision

We've identified four key principles for Cannop Ponds. These principles will guide our decision-making.

Climate

The safety of the dams cannot be guaranteed in extreme storms. We must find a solution that protects downstream communities by reducing the risk of either dam failing. With storms becoming more frequent and intense due to climate change, the risk of flooding is increasing. It may be possible to use the ponds to store more of the flood water in Cannop Brook to reduce flooding downstream.

We aim to protect the downstream communities from the risk of dam failure and associated threat of flooding.

Place

Cannop Ponds are part of the historical past of the Forest of Dean and provide a peaceful destination for local communities and visitors. Whatever the solution taken forward, there will be a change.

We aim to find a solution which keeps a strong sense of place and peaceful destination, which respects the heritage of the valley, and promotes the cultural understanding of Cannop Ponds for future generations.

Nature

Cannop Ponds are known to support a range of wildlife and habitats on both the surrounding land and in the water.

We aim to design a solution which benefits the wildlife of the area, enhancing habitats for both native land and water species.

People

We know that Cannop Ponds are a popular location both for local people and visitors.

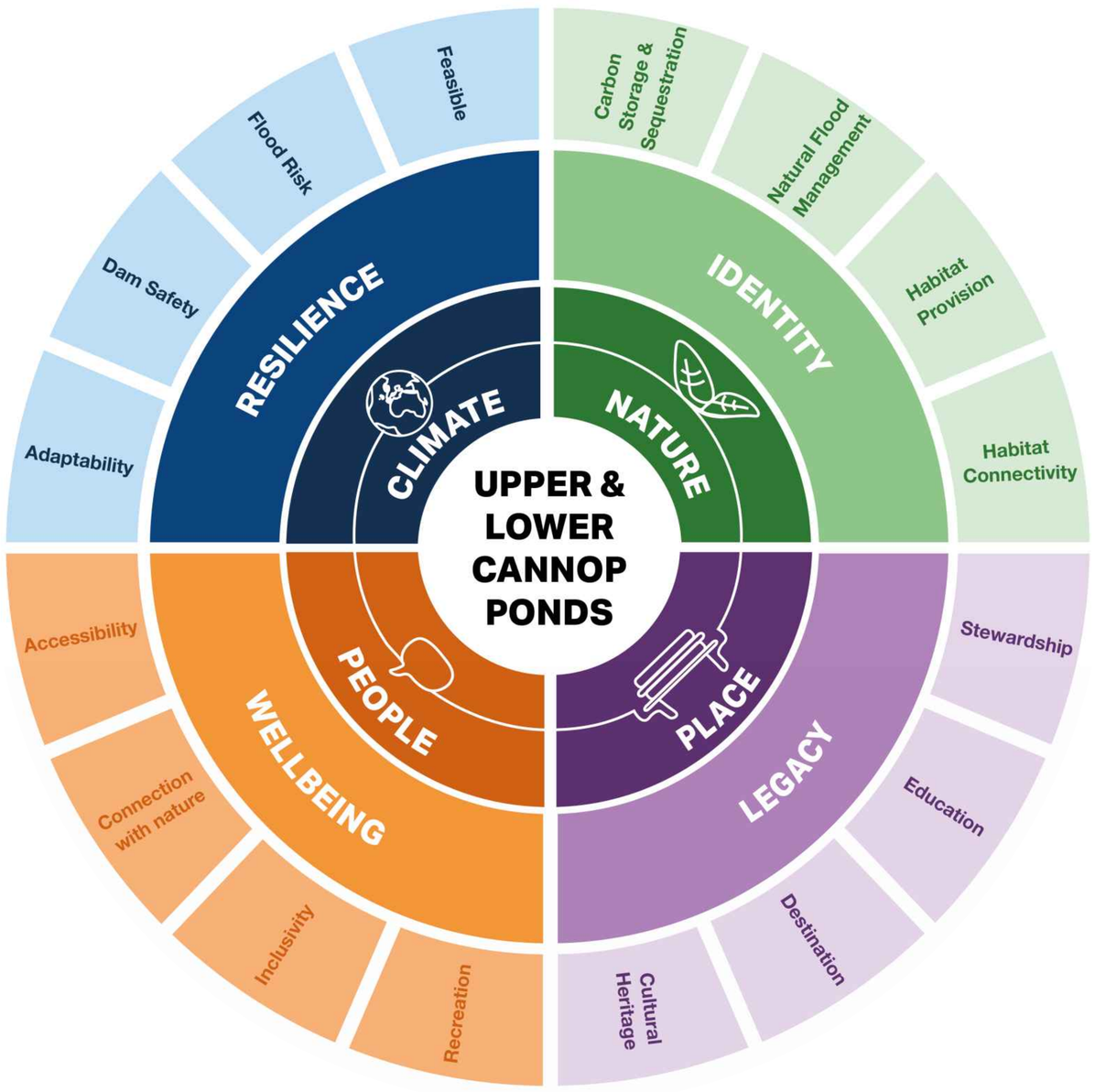
Any option will see the site temporarily closed while works take place.

We aim to design a solution which will benefit people in the long-term.

Developing the options

We are currently looking at four concept options. These are informed by data, surveys and modelling relating to the environment and the distribution and movement of water. All of the options address the legal requirements and moral obligation to ensure the safety of the dams and the downstream communities. Each of the options presented today shows the potential range of features. The "preferred solution" may be one of the options or made up from a combination of the features in these options. Before choosing a preferred solution, each of these options will be assessed against the project objective, key principles, and the following:

- Dam and reservoir safety
- Flood risk / storm water storage impact
- Social impacts
- Impacts on nature, habitats and species
- Impacts on cultural & built heritage
- Wider environmental impacts including carbon implications
- Stakeholder and community feedback



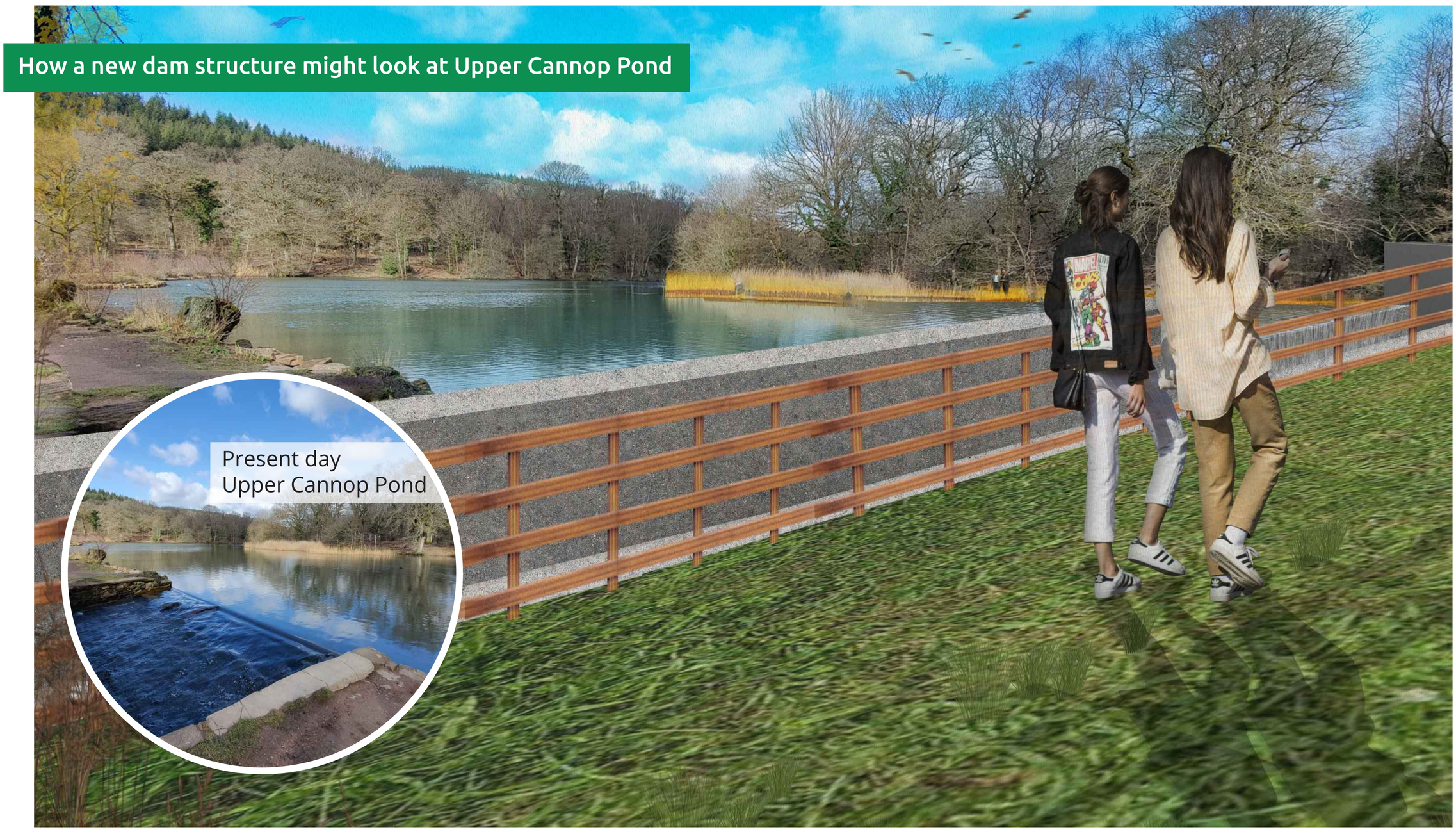
Vision wheel for Cannop Ponds

Forestry England

Option 1

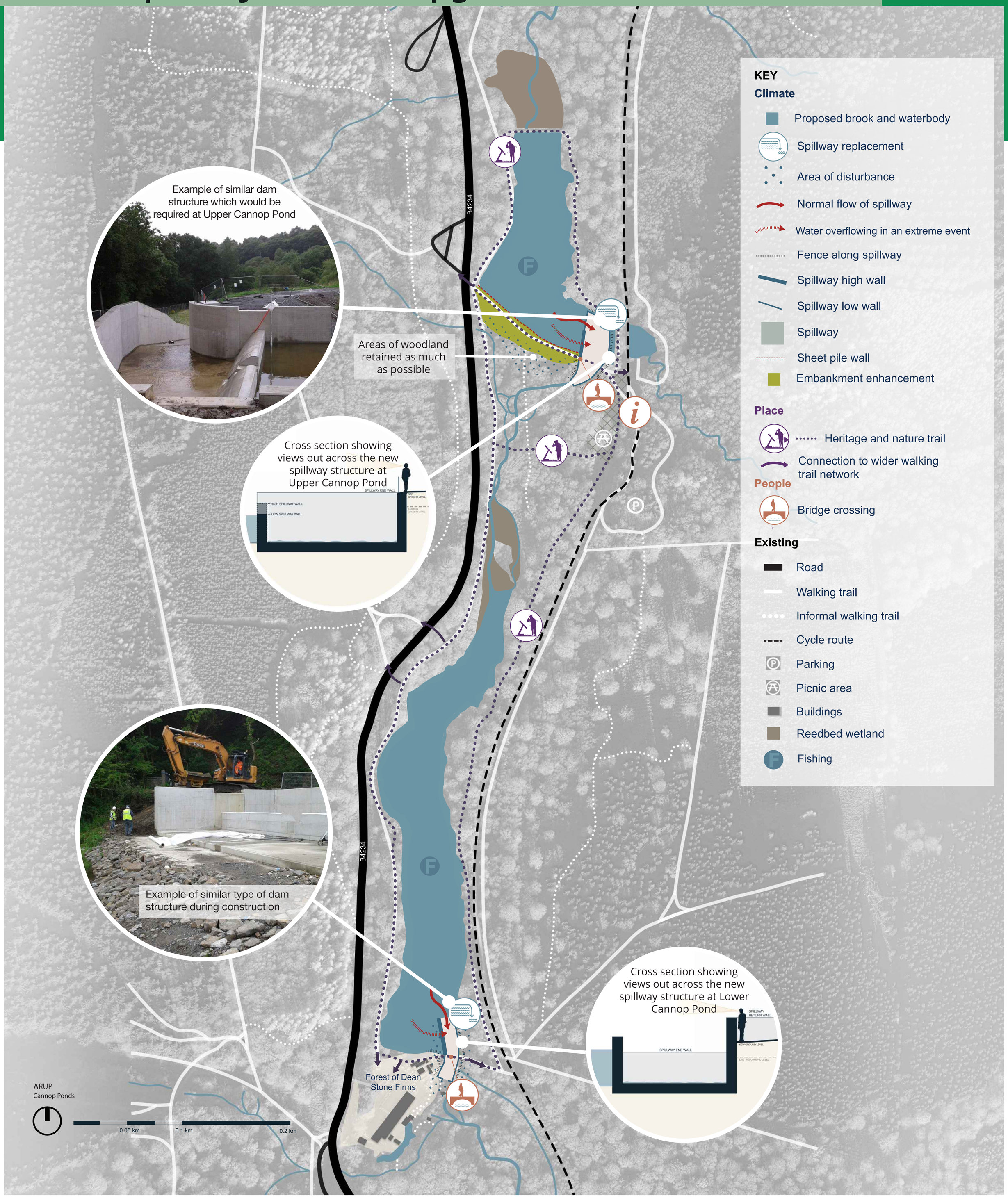
Spillway and dam upgrade

Artist's impressions



Concept plan

Spillway and dam upgrade



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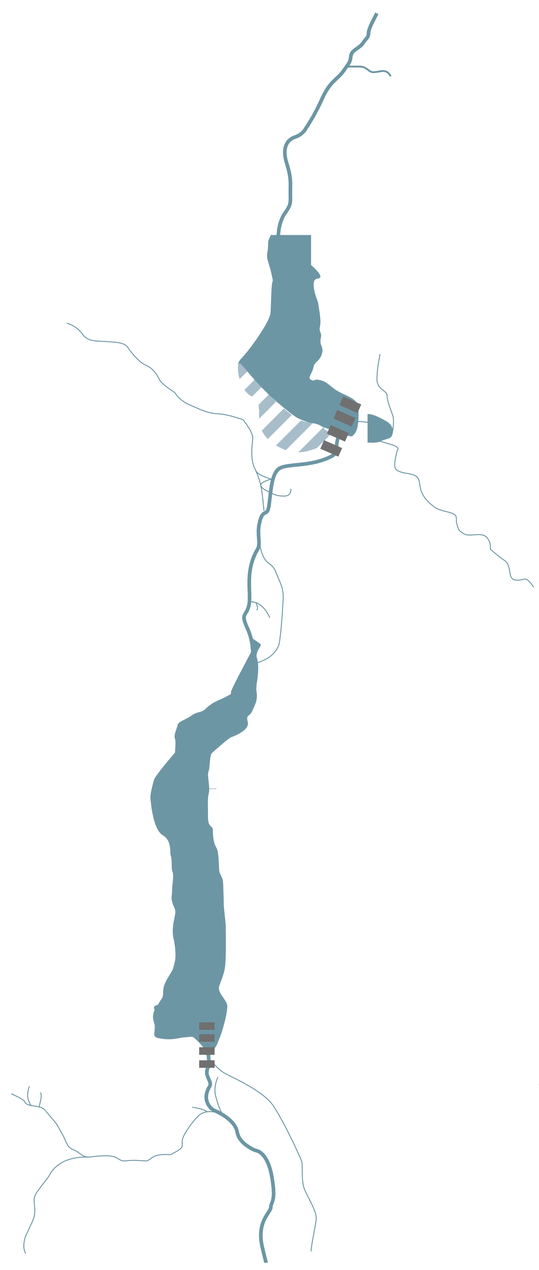
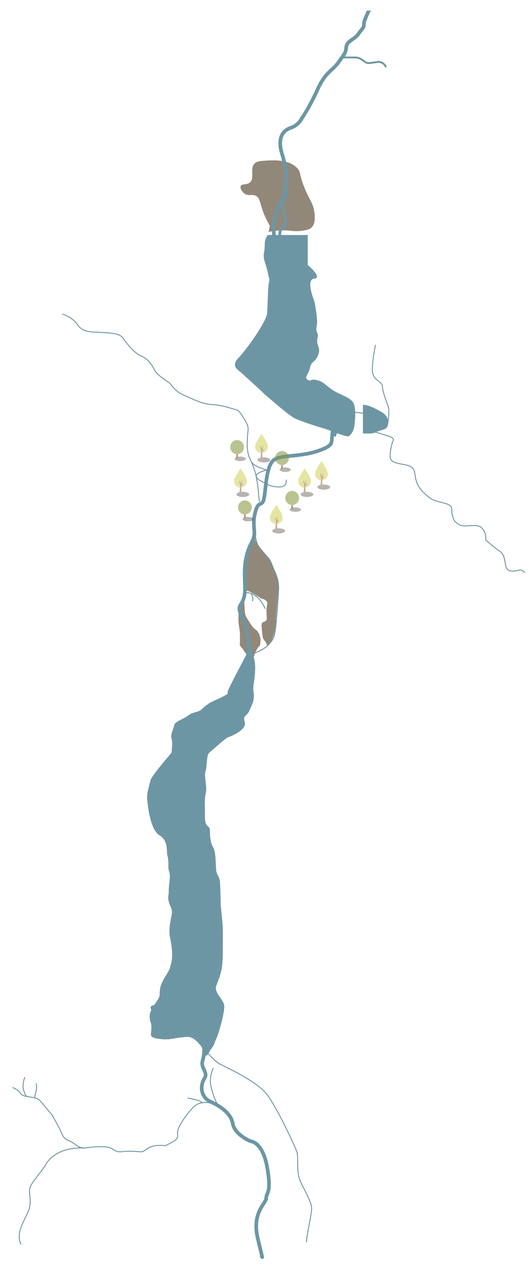
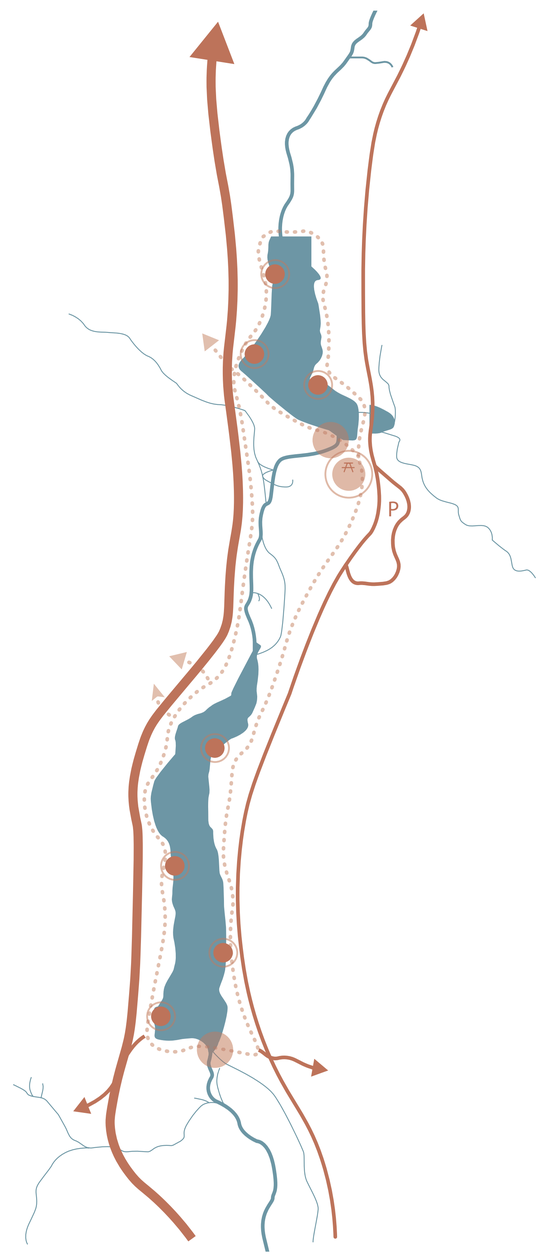
This option upgrades the dams and spillways and will allow the Ponds to remain as they are now. The new spillways will be larger concrete structures that are designed to safely carry more water in extreme storm events. The top and sides of the dams will be raised and strengthened. Works will be undertaken to improve the watertightness of the dams to reduce leakage. Downstream flood risk from storms would be similar to now.

Option 1 Spillway and dam upgrade

Option features







Climate features

- Ponds
- Replacement spillways
- Replacement embankment

Nature features

- Existing reedbeds
- Woodland retained

People features

- Arrival space with cycling dismounting and information about historic land use
- New bridge crossings to reconnect walking trails
- Existing fishing platforms retained
- Existing vehicle routes
- Existing cycling routes
- Existing walking trail
- Connections to the wider landscape

Place features

- Heritage walking trail

The water level in Upper and Lower Cannop Ponds will be unchanged. The height of the dam embankments will be increased to prevent water overtopping the dams in extreme flood events. There will be a slightly reduced pond area to accommodate the new larger spillways and larger dams.

There would be minimal change in open water habitat once the works are complete. There would be few opportunities to enhance the habitats for wildlife. The construction of the dams and spillways will impact existing habitats, including the wet woodland at Upper Cannop, although habitats will be restored where possible.

Fishing would be maintained in the Ponds once construction of the new spillways is complete. Walking trails would be impacted by the new spillway structures. Opportunities for new walking trails could retain the existing loop trail around the pond and improvements made to the connection with the cycle trail and car park.

Cultural heritage associated with the Ponds would be retained. The built heritage associated with the spillways would be impacted by removal and replacement of the physical structures. Opportunities for a heritage trail along existing walking trails could provide interpretation of the site's history.

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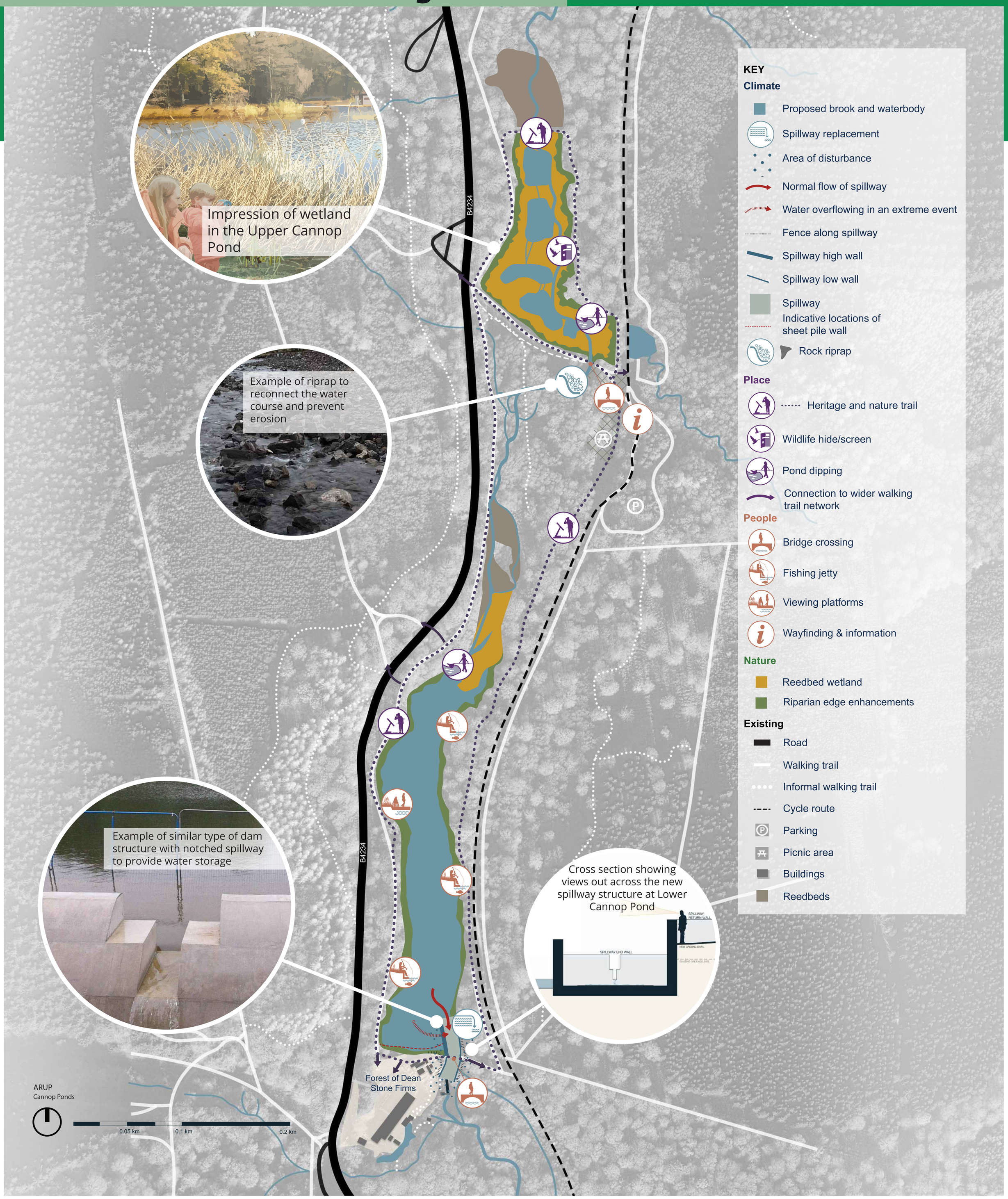
Option 2

Storm water storage

Artist's impressions

Concept plan

Storm water storage



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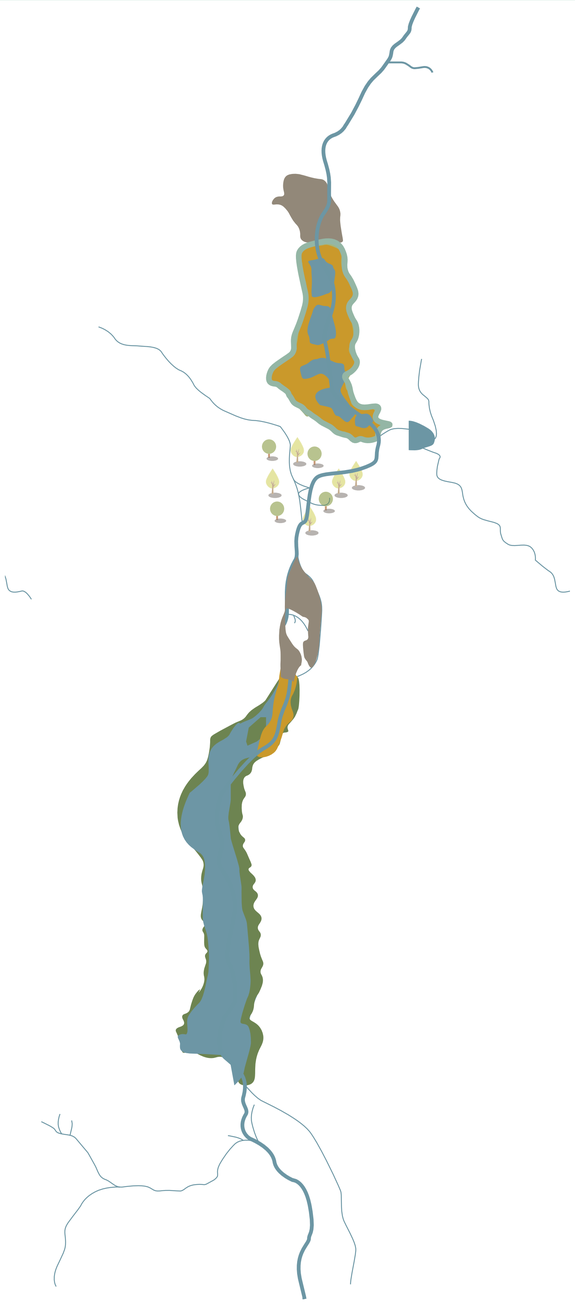
This option provides additional water storage in storm events. The water level in Lower Cannop Pond would be dropped by 1 to 2 metres retaining it as a smaller reservoir. A new larger spillway would be required. The Upper Cannop Pond spillway would be removed. This will reconnect the watercourse and allow creation of a series of smaller ponds. This option reduces the risk of downstream flooding and dam failure.

Option 2
Storm water storage

Option features



Climate features

- Re-naturalising Cannop Brook
- Ponds
- Riprap (rock and boulders)
- Replacement spillway

Nature features

- Existing reedbeds
- Created reedbeds and wetlands
- Wet meadow grassland
- Riparian edge enhancement
- Woodland retained

People features

- Arrival space with cycling dismounting and information about historic land use
- New bridge crossings to reconnect walking trails
- Dipping ponds
- Fishing platforms
- Viewing platform and resting spaces
- Existing vehicle routes
- Existing cycling routes
- Inclusive walking trail for all users

Place features

- Bird hide/screen
- Heritage walking trail

The water storage during a flood event is increased at Lower Cannop Pond through a reduction in the normal water level by 1 to 2 metres. A new spillway would be constructed which restricts flow out of the pond in storm events so that water is held back. A series of smaller ponds would be created in the Upper Cannop Pond, providing floodplain water storage and reconnecting the watercourse between the Ponds.

There would be a reduction in open water habitat. Lower Cannop Pond and the series of smaller ponds would provide suitable habitat for the native aquatic species currently present. There would be an opportunity to create a mixture of open water, wetland, grassland and wooded habitats which have the potential to improve the biodiversity value of the site.

Fishing would be maintained in Lower Cannop Pond. The lower water levels provide opportunities to design new accessible walking trails to the water's edge linking new wildlife hides, dipping ponds and accessible viewing platforms with seating over looking the Ponds. Connectivity with the car park and cycle trail can also be improved.

Cultural heritage of the site would be impacted by the loss of Upper Cannop Pond and removal of the spillway structures. Opportunities will be created to link people to nature and explore both the industrial and natural history of the Ponds and wider valley.

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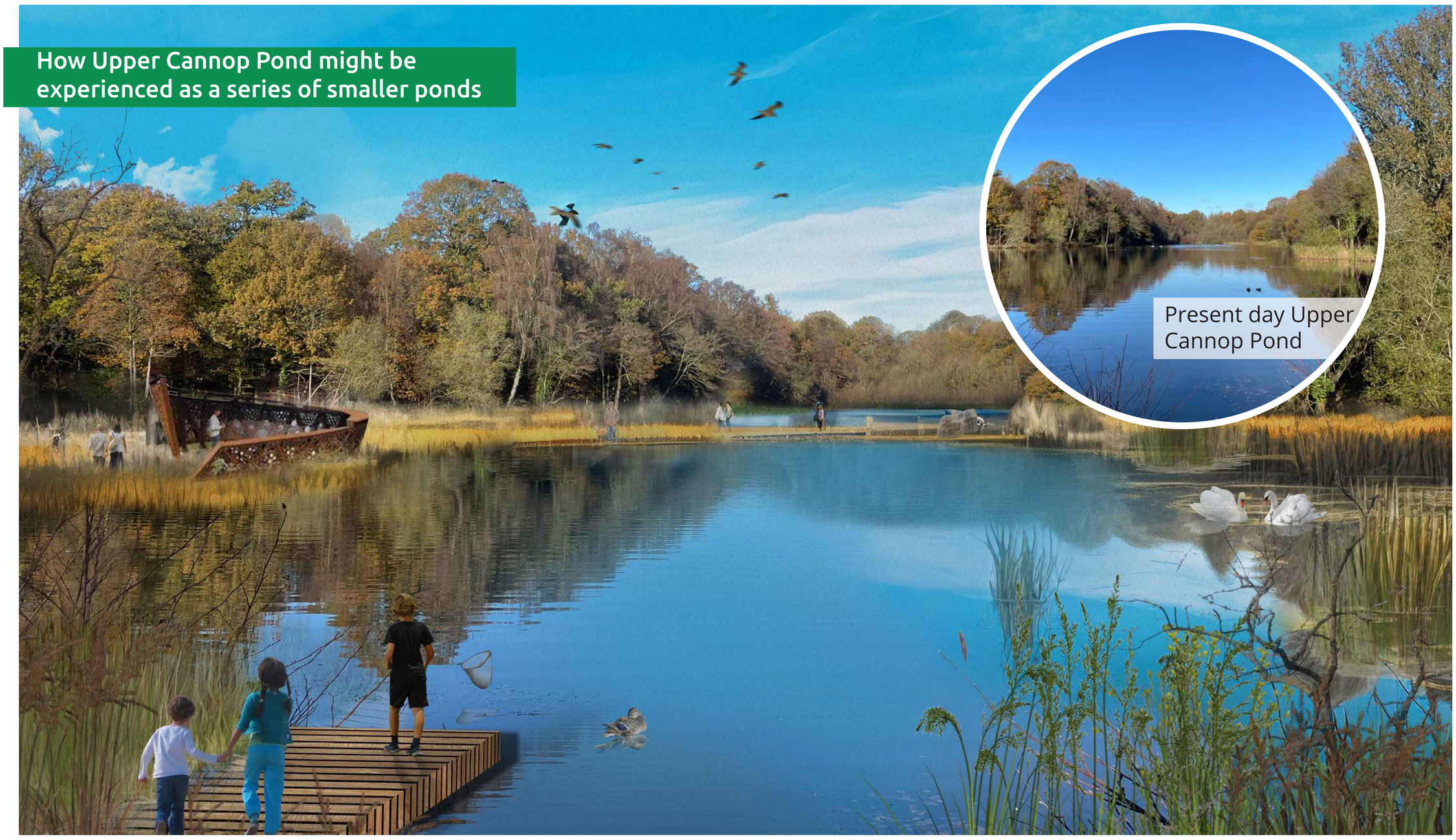
Option 3

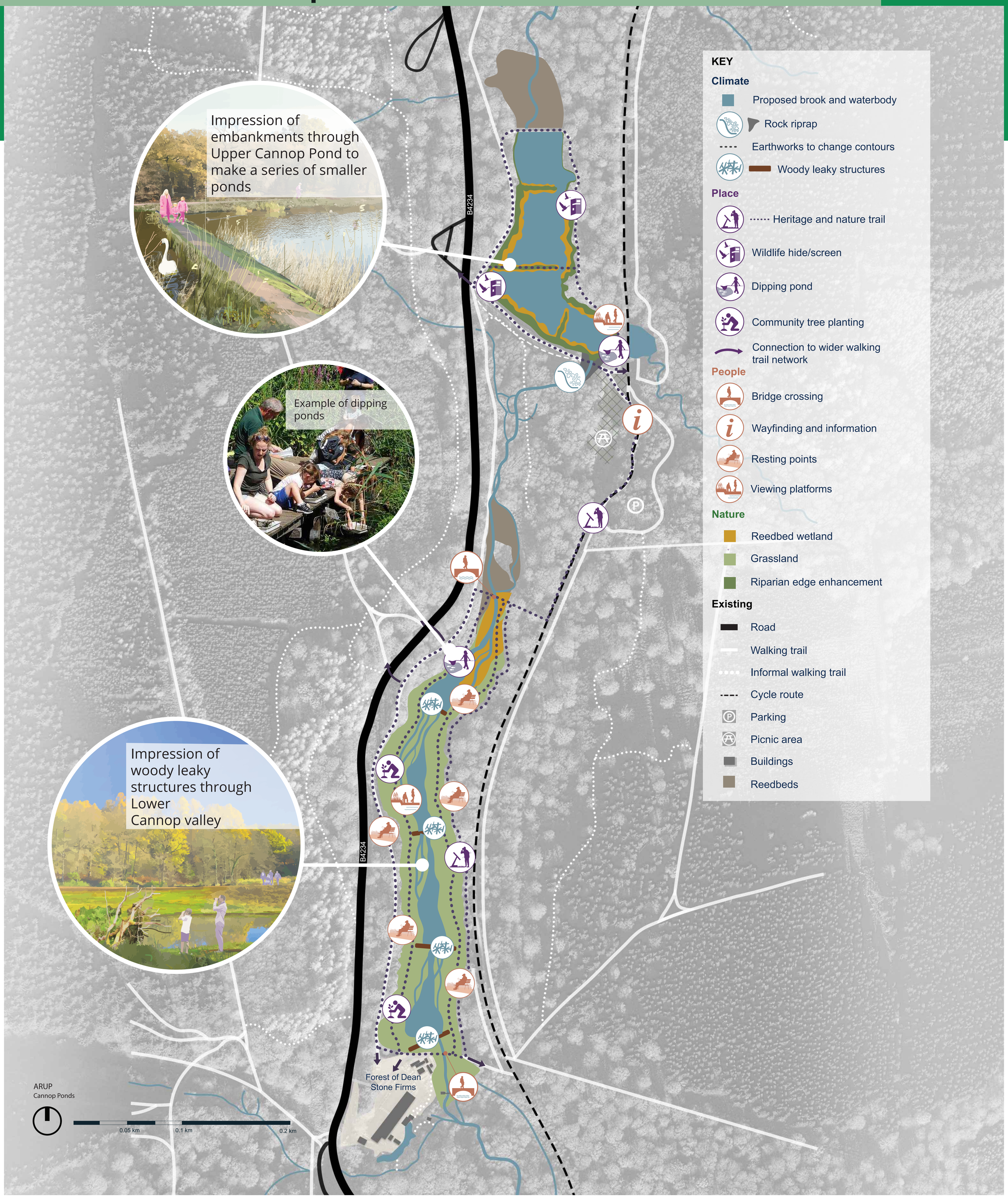
Cascade of ponds

Artist's impressions



Concept plan

Cascade of ponds



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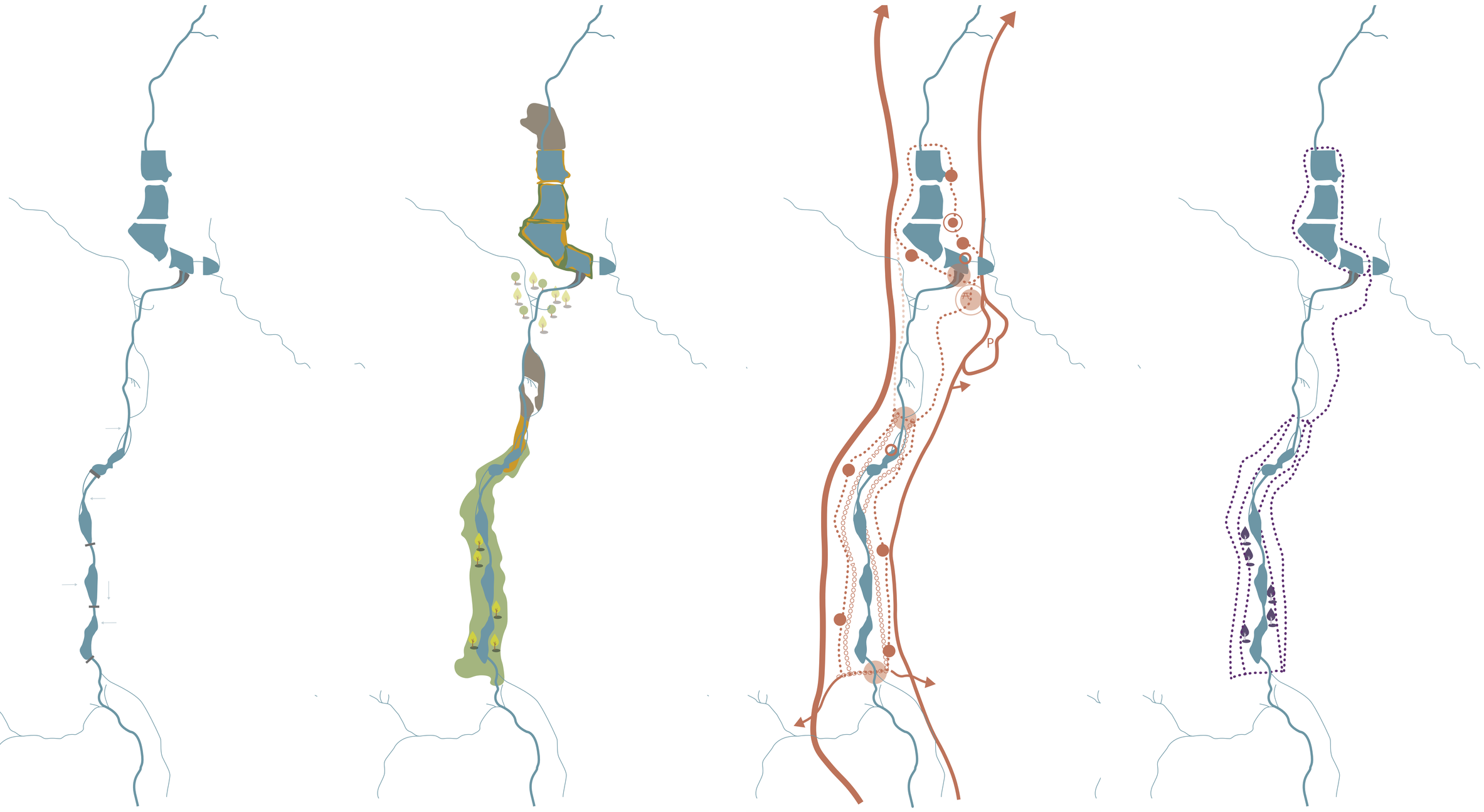
This option removes both spillways and creates a series of ponds through the valley. The cascade of ponds would be achieved through the construction of embankments, or 'leaky' woody structures across the valley to hold water. The risk of future dam failure would be removed and the creation of ponds through the valley would re-connect the floodplain.

Option 3
Cascade of ponds

Option features



Climate features

- Re-naturalising Cannop Brook
- Ponds
- Riprap (rock and boulders)
- Leaky woody structures

Nature features

- Existing reedbeds
- Created reedbeds and wetlands
- Species rich grassland
- Riparian edge enhancement
- Woodland retained
- Community tree planting

People features

- Arrival space with cycling dismounting and information about historic land use
- New bridge crossings to reconnect walking trails
- Dipping ponds
- Fishing platforms
- Viewing platform and resting spaces
- Existing vehicle routes
- Existing cycling routes
- Existing walking trail
- Inclusive walking trail
- Nature trail

Place features

- Community tree planting
- Heritage walking trail

Areas of open water would be provided through a series of smaller ponds in both Upper Cannop Pond and Lower Cannop Pond. This would reconnect the brook watercourse between the Ponds and Cannop Brook. Water storage would be provided naturally. However, this would be difficult to quantify.

There would be a reduction in open water habitat. The series of smaller ponds would provide suitable habitat for the native aquatic species currently present. There would be an opportunity to create a mixture of open water, wetland, grassland and wooded habitats which have the potential to improve the biodiversity value of the site.

The mix of habitats and increase in open space provides opportunity to improve access to the water's edge and link with wildlife hides, dipping ponds and places to sit and rest. Connectivity with the car park and cycle trail could be improved. Some of the large pools may be fishing, but otherwise the fishing interest is lost.

Loss of the ponds as open water features and the removal of the spillways will impact the cultural heritage of the valley. Opportunities will be created to link people to nature, and explore both the industrial and history of the Ponds and wider valley.

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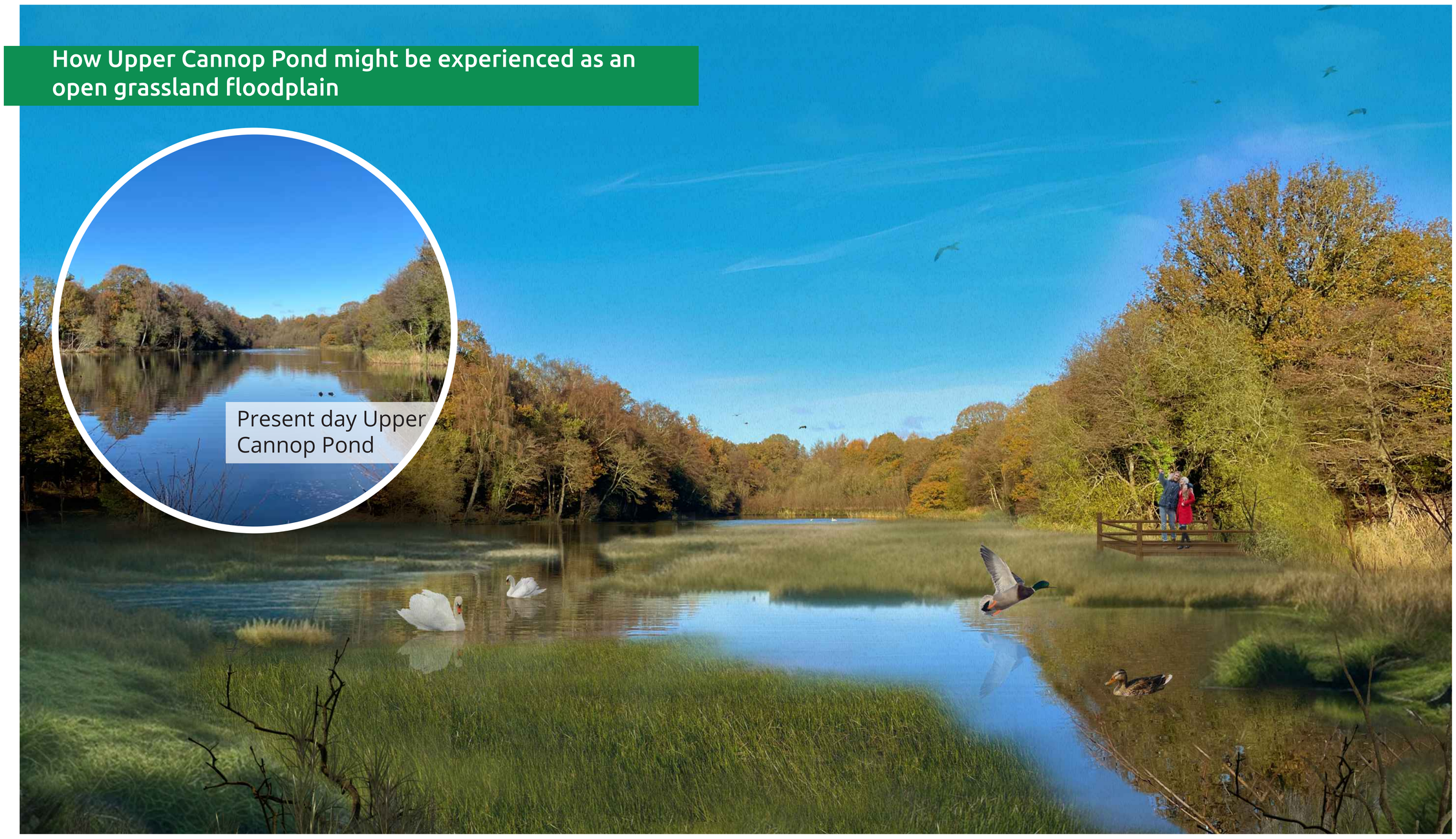
Option 4

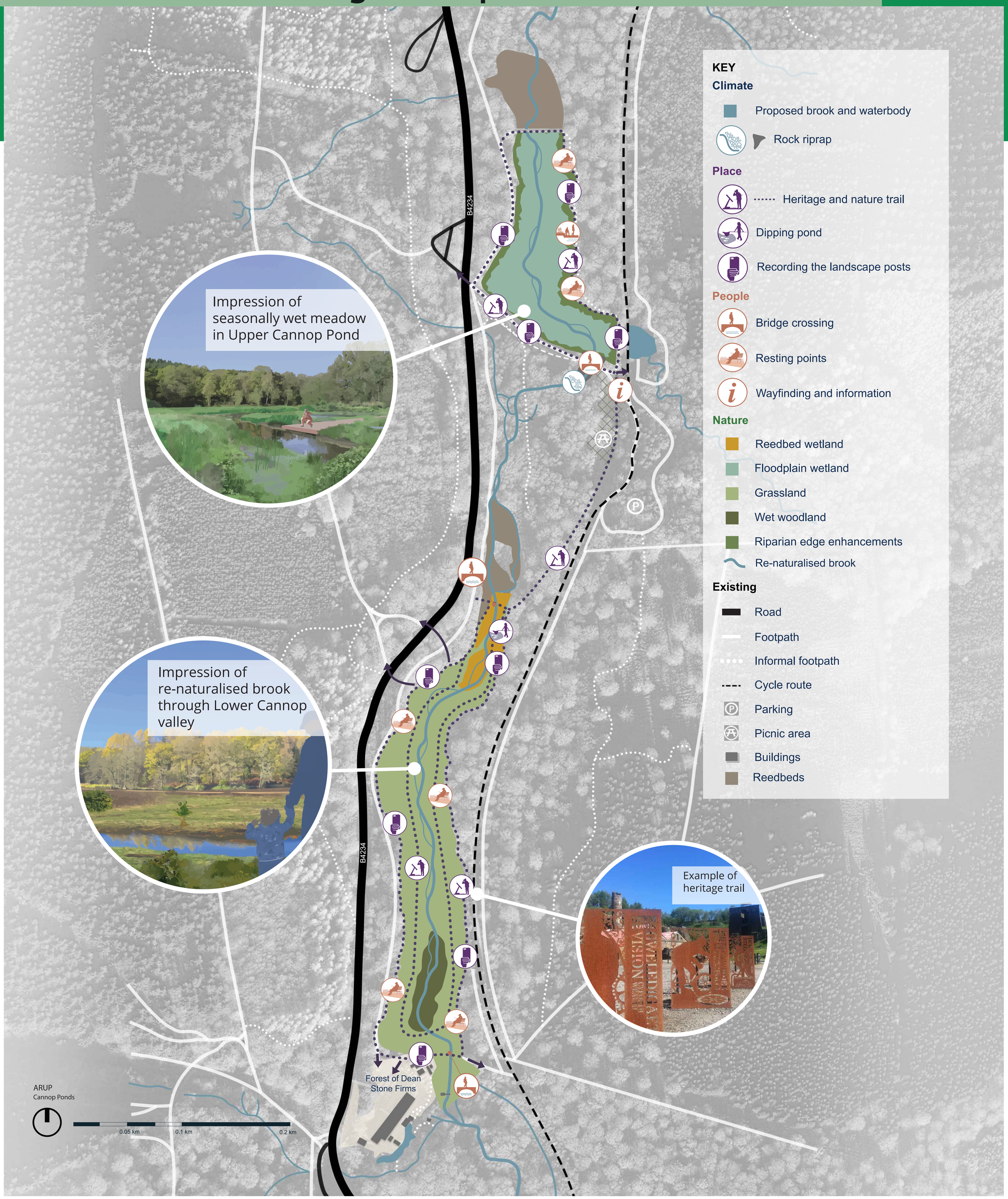
Re-naturalising Cannop Brook

Artist's impressions



Concept plan

Re-naturalising Cannop Brook



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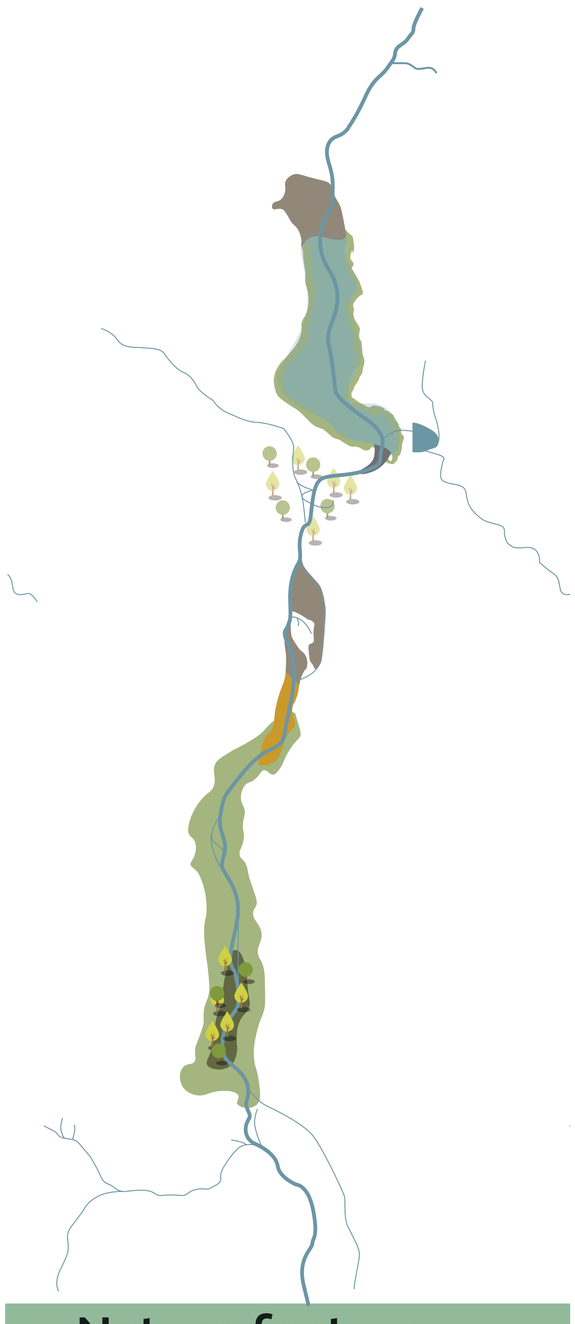
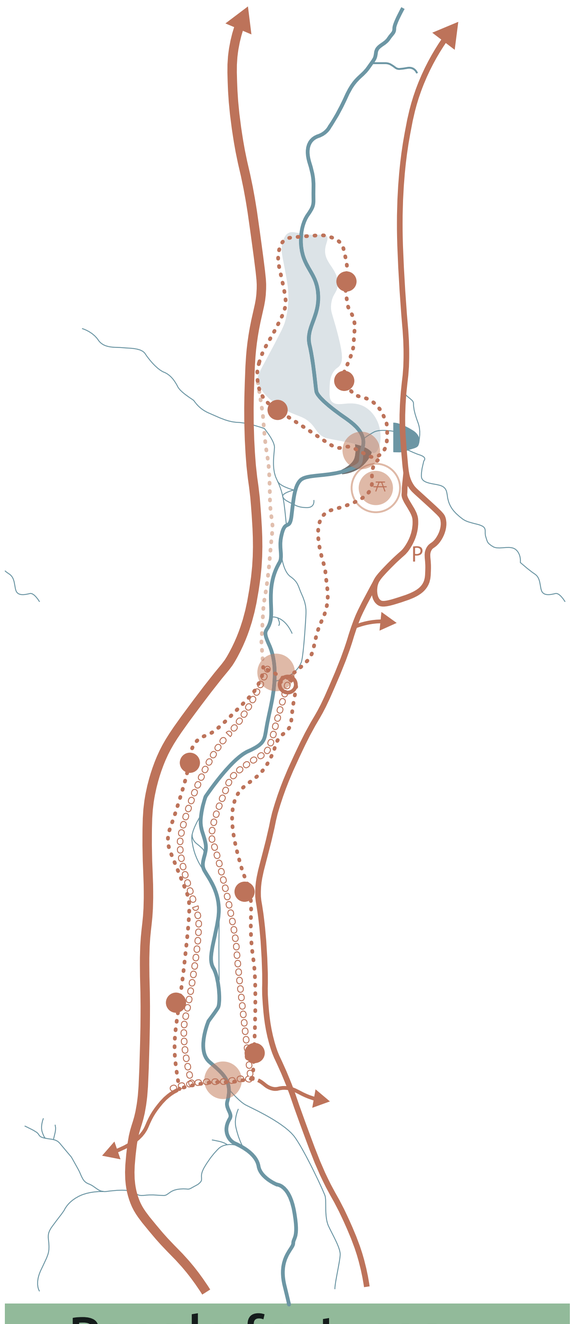
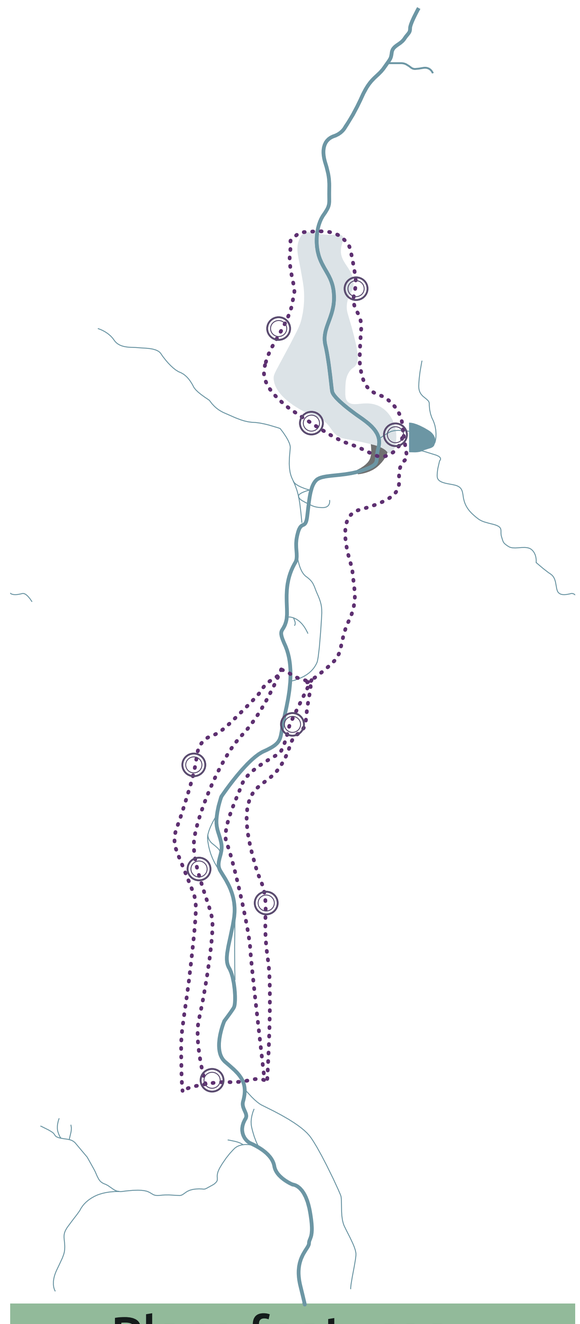
This option removes both spillways and reinstates Cannop Brook. The risk of future dam failure would be removed. Natural processes would shape the valley creating a mix of grassland and woodland habitats. This option will result in the loss of both Ponds.

Option 4 Re-naturalising Cannop Brook

Option features







Climate features

- Re-naturalising Cannop Brook
- Floodplain
- Riprap (rock and boulders)

Nature features

- Existing reedbeds
- Created reedbed and wetlands
- Wet meadow grassland
- Wet woodland
- Species rich grassland
- Woodland retained
- Wet woodland trees

People features

- Arrival space with cycling dismounting and information about historic land use
- New bridge crossings to reconnect footpath
- Dipping pond
- Viewing platform and resting spaces
- Existing vehicle routes
- Existing cycling routes
- Existing walking trail
- Inclusive walking trail
- Nature trail
- Connections to the wider landscape

Place features

- Recording in the landscape posts
- Heritage walking trail

Floodplain water storage would be provided and there would be reconnection of the Cannop Brook watercourse between the Ponds. There would be reduced water storage through the valley.

There would be a loss of open water habitat by removing the Ponds. This provides opportunities to create a mix of grassland and wetland habitats and associated species to be present.

Recreational fishing would be lost from the site. Opportunities could include new accessible walking trails to the water's edge, dipping pond and viewing platforms with seating overlooking the Ponds. Connectivity with the car park and cycle trail could also be improved.

Loss of the ponds as open water features and the removal of the spillways will impact the cultural heritage of the valley. Opportunities for a heritage trail along existing walking trails could provide interpretation of the site's history. This could include recording posts to chart how the landscape has changed over time creating a visual record for future generations.

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Have your say

Thank you for taking the time to join us today and view the concept options. Your views are important to us and will help shape the preferred solution.

How to share your views

To share your views, send us your feedback by **11 April 2023** by:

Online: http://cannop-ponds.virtual-engage.com/

Email: cannopponds@forestryengland.uk

Post: The Cannop Ponds Team, Forestry England, Bank House, Bank Street, Coleford, Gloucestershire, GL16 8BA

For more information about the project, please visit the Cannop Ponds project webpage at: **bit.ly/Cannop-Ponds**

You can find a copy of all the information you have seen today in our online Virtual Engage room.

Any remaining questions you may have, please send to **cannopponds@forestryengland.uk**

What happens next?

Our next step will be to assess the options and decide on a preferred solution. Your feedback will be part of this process along with the results of the surveys, investigations and modelling work underway.

The next phase will be the design development phase, and we will continue to ask for your feedback. This will be prior to the submission of a planning application.

Information and details about further engagement events will be released closer to the time.

Timeline:

March 2023 (now)	Public engagement on concept options
Spring 2023 - Winter 2023	Develop the preferred solution using results of completed surveys, modelling, investigations and engagement feedback
	Planning pre-application consultation
2024	Planning application submission