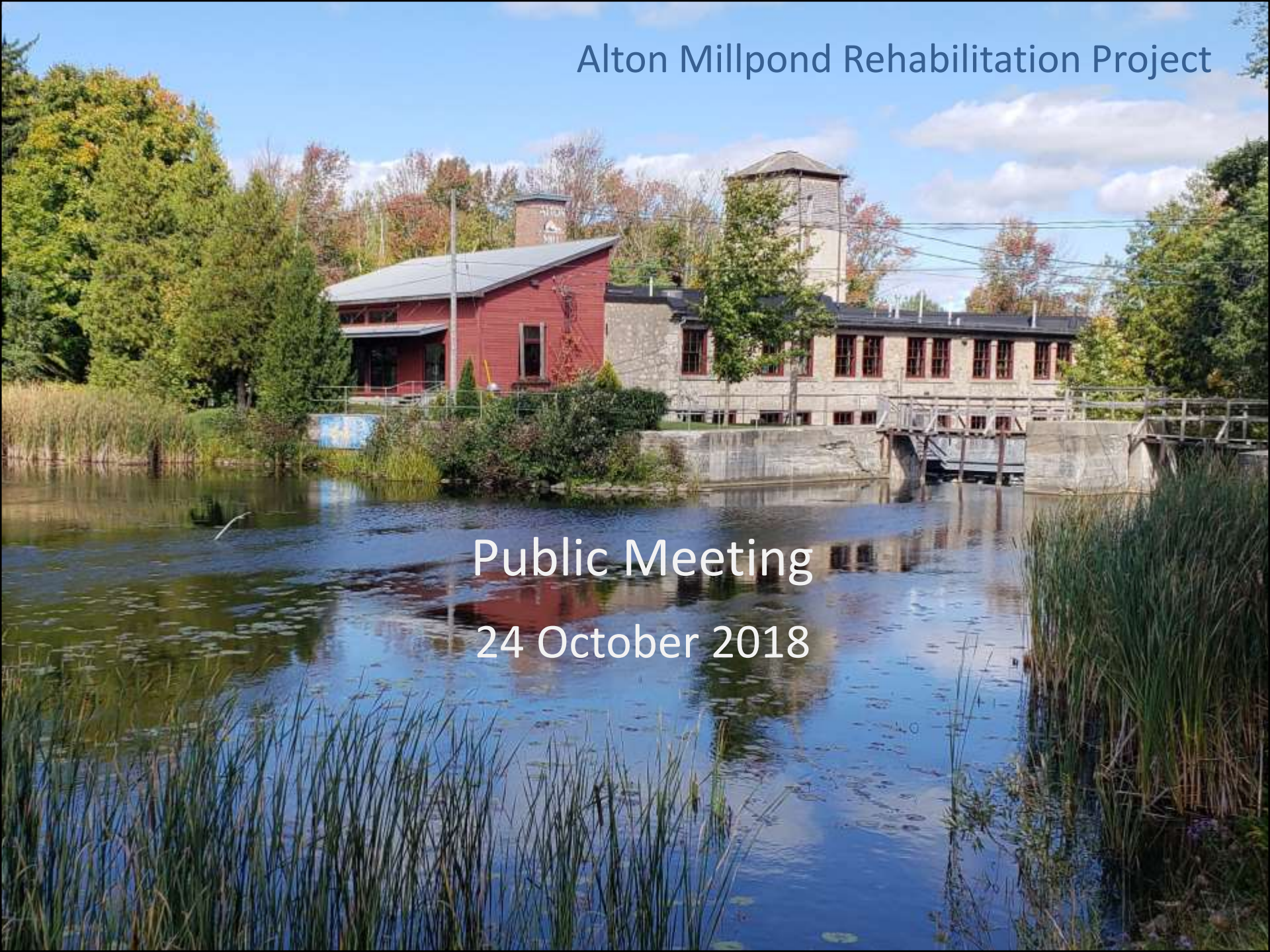


Alton Millpond Rehabilitation Project

Public Meeting
24 October 2018



Agenda:

- Introductions / project team
- Project background
- Review of Master Plan objectives & results
- Acknowledgement of Ontario Trillium Foundation support
- Engineering & design development
 - Regulatory process
 - geotechnical, hydrologic and hydraulic studies
 - Hazard Potential Classification & Inflow Design Flood
 - Dam alignment & pond elevation
- Landscape and Public Art Features
 - Landscape architecture
 - Public art & “curatable spaces”
- Project timing
- Comments & Questions

Introductions & Project Team:

- Alton Millpond Association Board & Executive
- Collaborating Organizations
 - Alton Mill Arts Centre (Alton Development Inc.)
 - Credit Valley Conservation Stewardship Group
 - Trout Unlimited
 - Headwaters Arts
- Core Technical Team
 - Landscape Architecture: DTAH
 - Public Art: Noel Harding & Bill Pechet
 - Aquatic & Terrestrial Ecology: Natural Resource Solutions
 - Engineering: HydroSys / CIMA+
 - Project Manager: Bill Touzel, TBSi
- Regulatory Agencies
 - Ministry of Natural Resources & Forestry
 - Credit Valley Conservation Authority – Planning & Permit Group
- Funding Partner
 - Ontario Trillium Foundation, an agency of the Government of Ontario

Project Background

- Project has been ongoing since 2009
- The *Vision* is to create a beautiful and publicly accessible “park-like” space, reintroduce natural ecological functions of the creek, while ensuring that the pond remains as a significant landscape feature within the village, and ensure that the aging dam is safe and appropriate for a changing climate
- Alton Millpond Association (AMA) / Alton Development Inc (ADI)
 - ADI owns the Alton Mill Arts Centre property including the dam & pond
 - AMA was created to direct the pond rehabilitation project and determine how best to manage & maintain the publicly accessible pond area in future

Review of Master Plan

- MP conducted 2013 - 2015
- Objectives included:
 - Replace the dam in accordance with modern design criteria & safety practices
 - Reintroduce natural stream functions for sediment transport & fish passage
 - Create publicly accessible recreational opportunities
 - Introduce public art works and spaces
 - Develop opportunities for education (art, ecology, renewable energy)
 - Generate waterpower / hydroelectricity
 - Reduce pollution entering the pond



Alton Millpond Rehabilitation Project

Public Meeting – 24 October 2018

MP results presented at public meeting September 2015



Acknowledgement of Ontario Trillium Foundation Support

- Remarks by Sylvia Jones, MPP for Dufferin Caledon
- Remarks by Crista Renner, OTF volunteer
- Presentation of the OTF plaque



Priority Outcome:

- More ecosystems are protected & restored

Grant Result:

- Conservation & restoration efforts are better planned & more sustainable

Engineering & Design Development

Regulatory Process

Ontario Ministry of Natural Resources & Forestry

- Dams in Ontario are regulated under the *Lakes & Rivers Improvement Act* administered by the MNRF
- MNRF / LRIA Approval is required prior to construction of any dam
- Canadian Dam Safety Guidelines are the basis for all engineering
- Hazard assessment and flood expectations are influenced by climate change

Credit Valley Conservation Authority

- Permit under O-Reg 160/06 for *Regulation of Development, Interference with Wetlands and Alterations to Shorelines and Watercourses* is required prior to construction
- This permit addresses requirements during construction for sediment and erosion control, ecosystem health, rescue of potentially stranded animals, etc.

While it has been determined that an Environmental Assessment process overseen by a regulator is not required for this Project, the AMA is willingly conducting public consultations as a central part of its planning process.

Engineering & Design Development

Geotechnical, Hydrological and Hydraulic Studies

LRIA Approval

To inform the team and the regulatory decision-makers, technical assessments have been undertaken by CIMA+ engineers

- Geotechnical – to determine the capacity of the rock under the pond to act as a foundation for the new dam
- Hydrological – to determine the likelihood of occurrence of flows of various magnitudes in Shaw's Creek at Alton
- Hydraulic – to determine the Hazard Potential Classification (HPC) and the appropriate Inflow Design Flood (IDF) for the design of a new dam



Engineering & Design Development

Hydrological Study – Flood Frequency

<u>Return Period</u>	<u>Proposed Flow for</u>
Years	<u>Dam Design</u> m ³ /s
2	13.1
5	19.0
10	24.1
20	28.5
25	30.1
50	34.6
100	39.2
1000	70
10,000	90
Regional	112.4
PMF	200

The “Regional” storm / flood is Hurricane Hazel equivalent transposed to Shaw’s Creek watershed at Alton

“PMF” is the Probable Maximum Flood, the largest flood that could conceivably occur at a particular location, estimated from probable maximum rain occurring coincident with snow melt

Engineering & Design Development

Hazard Potential Classification (HPC) & Inflow Design flood (IDF)

As there is the potential for inundation of some dwellings and other structures downstream of the dam under certain conditions, incremental consequences are assessed with respect to life safety, property losses, environmental losses and cultural - built heritage losses under dam-break (failure) conditions for various flood flows, and under a “sunny-day” (earthquake) dam break scenario.

HPC was ultimately determined to be Very High, particularly due to the potential for loss of life

Guidelines then require IDF to be the lower of:

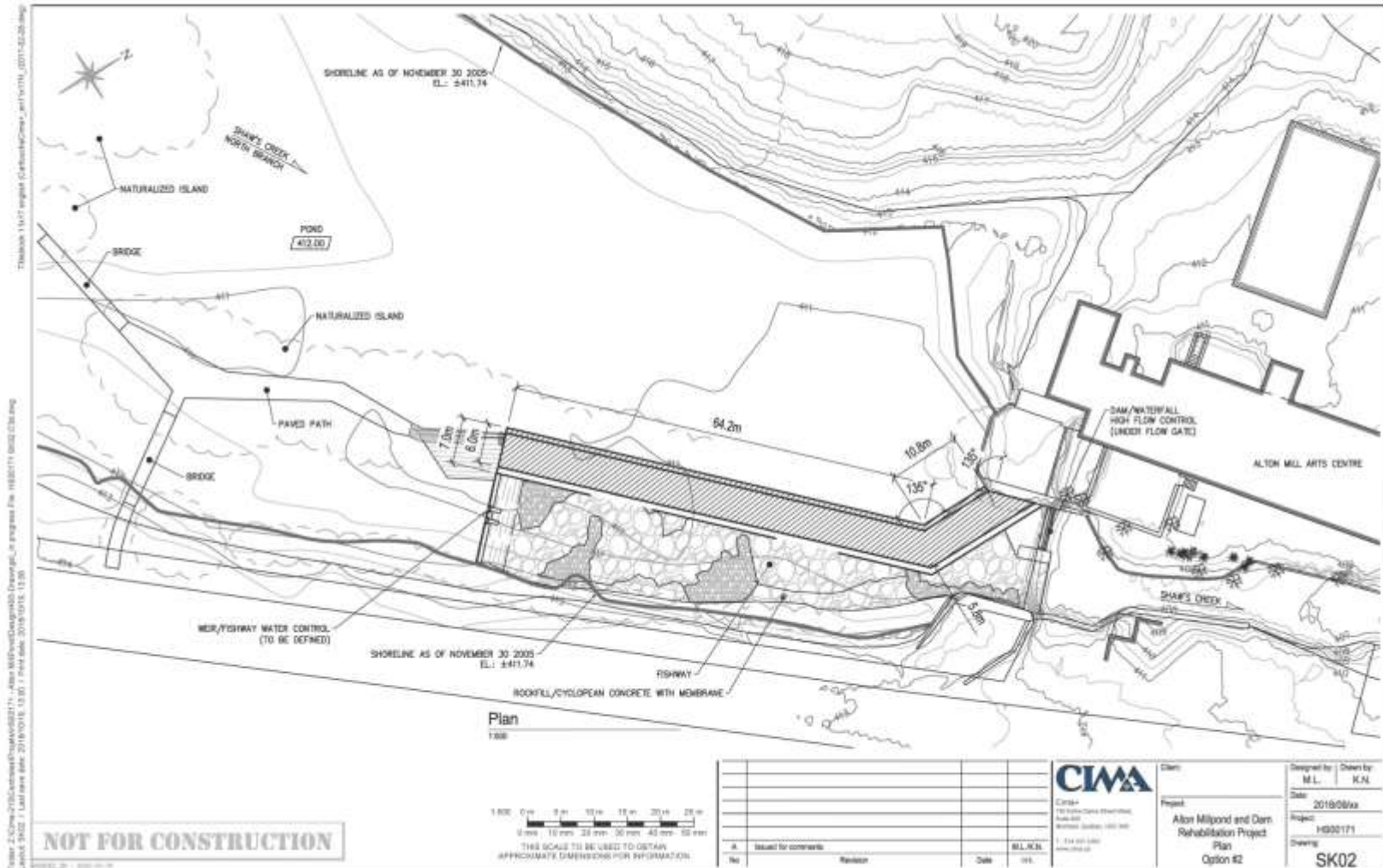
- 2/3 between 1000-yr flood and PMF, and

- the flood flow at which there are no incremental consequences of failure

Applying this guideline, IDF was then determined to be 140 m³/s (the flow at which there are no incremental consequences of a dam failure during flood)

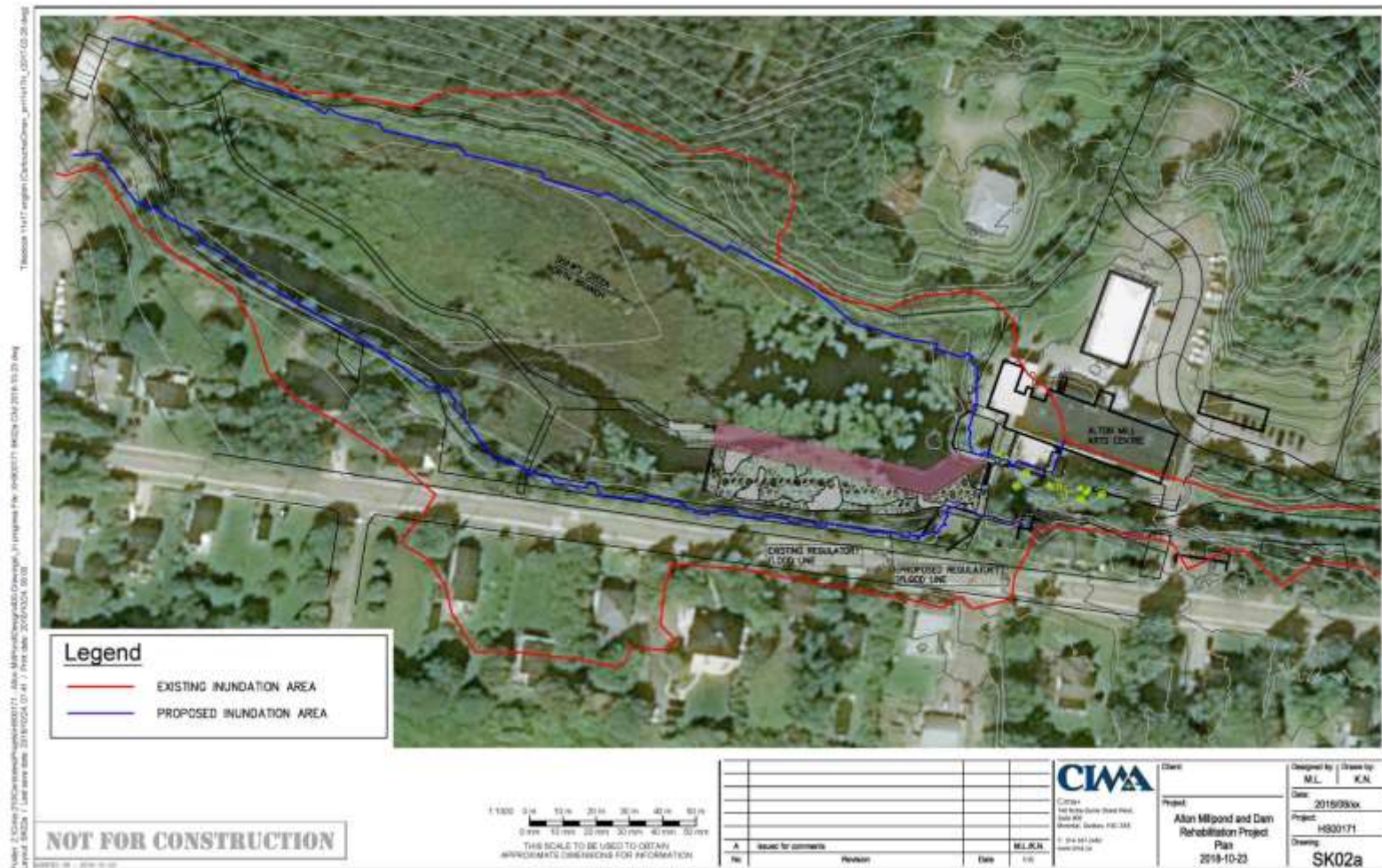
Engineering & Design Development

Dam Alignment & Pond Elevation



Engineering & Design Development

Flood Map



Landscape & Public Art Features

Key Plan Developments

Pedestrian Circulation Modifications:

- Crossing from Mill west terrace at existing dam to Queen Street removed
- Access to Queen St. remains at top of fishway
- Shoreline access towards north trails and west to Millcroft Inn removed
- New path links relocated further west from pond islands

Dam Structure

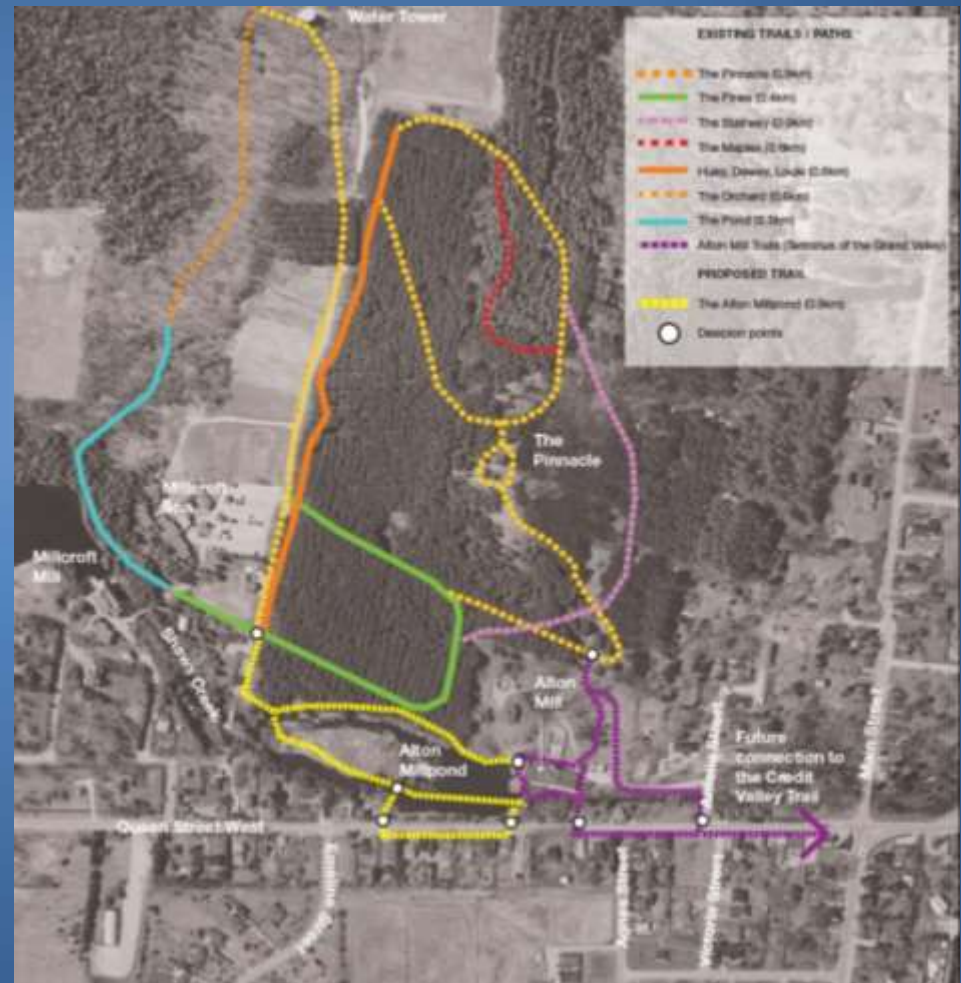
- Repositioned to widen fishway and open up dam area at the Mill
- Scale of concrete dam reduced by utilizing timber stop logs at top

Art Venues

- Curatable Places
- Dam finishes and water features
- Floating and moveable gathering / performance platform

Landscape & Public Art Features

Purposeful connection to the regional / local trail network



Landscape & Public Art Features

2018 Site Plan Update

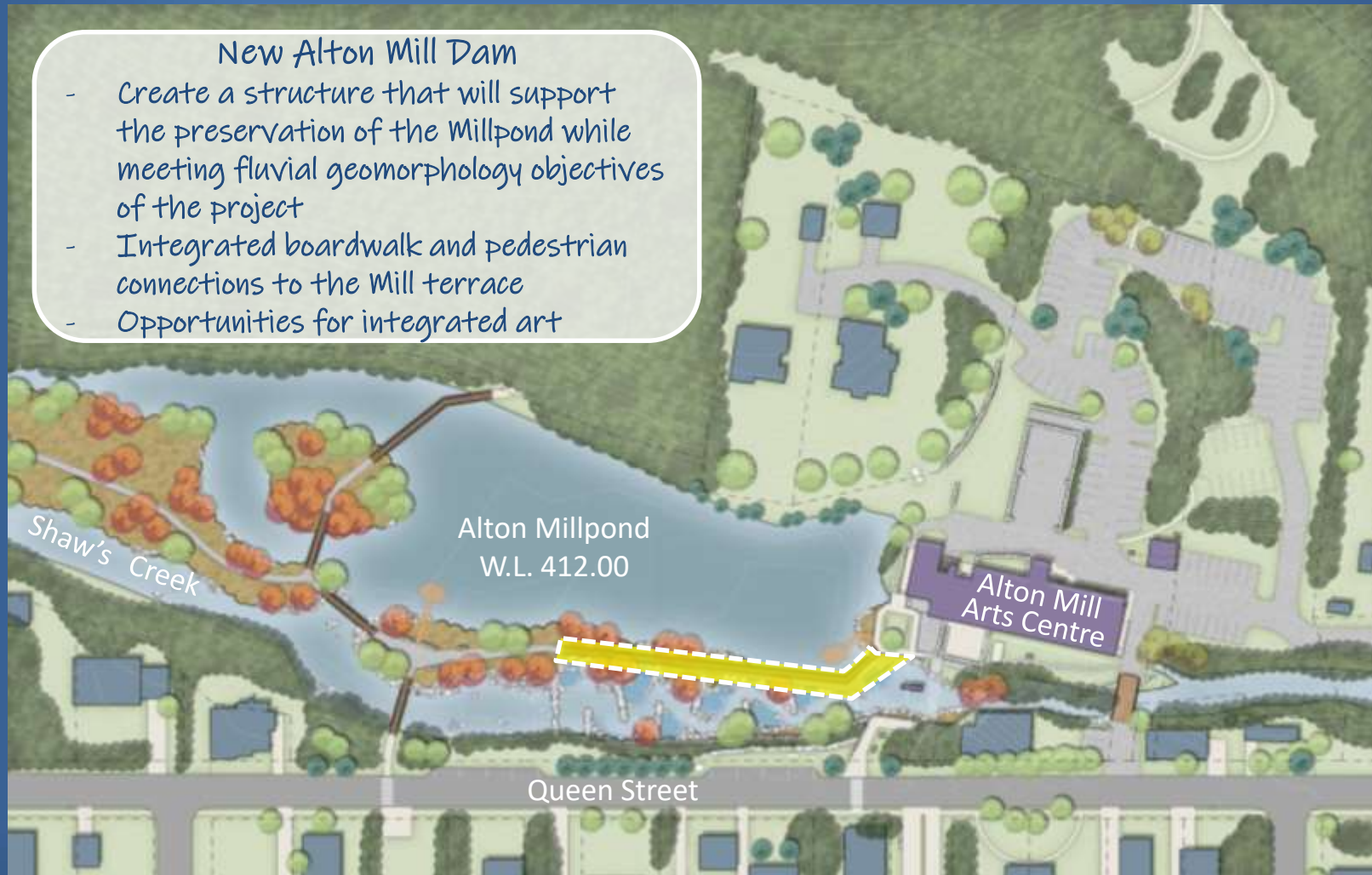


Landscape & Public Art Features

2018 Site Plan Update – Landscape Features

New Alton Mill Dam

- Create a structure that will support the preservation of the Millpond while meeting fluvial geomorphology objectives of the project
- Integrated boardwalk and pedestrian connections to the Mill terrace
- Opportunities for integrated art



Landscape & Public Art Features

2018 Site Plan Update – Landscape Features



Landscape & Public Art Features

2018 Site Plan Update – Landscape Features

Rehabilitated Shaw's Creek and New Fishway

- Eliminate barriers to fish migration & optimize conditions for fish passage
- Well vegetated streambanks, riffle/pool sequences and resting habitat
- Silt and sediment control
- Increased tree cover and native vegetation communities



Landscape & Public Art Features

2018 Site Plan Update – Master Plan Features



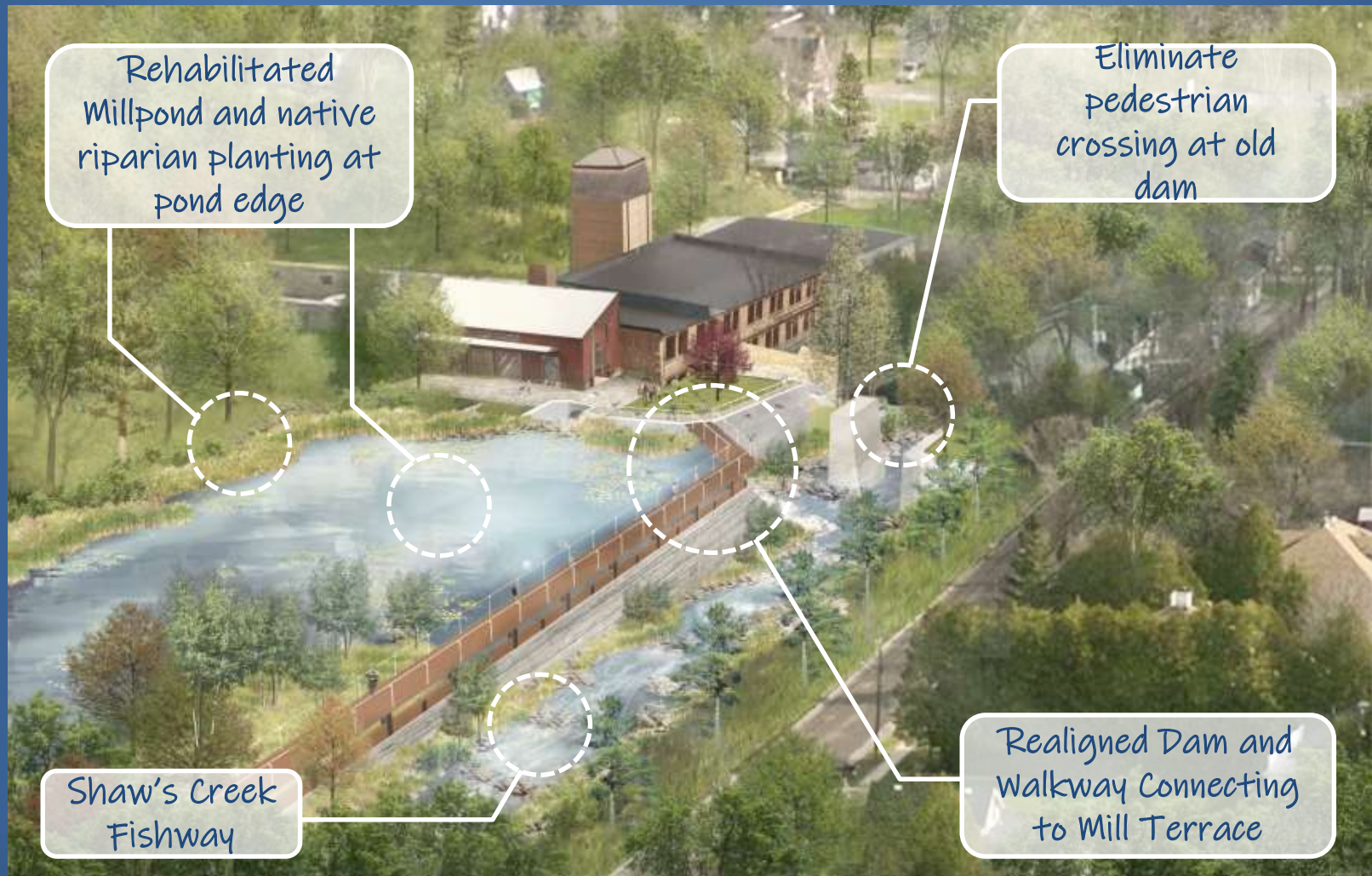
Landscape & Public Art Features

Updated rendering looking downstream



Landscape & Public Art Features

Updated rendering looking downstream



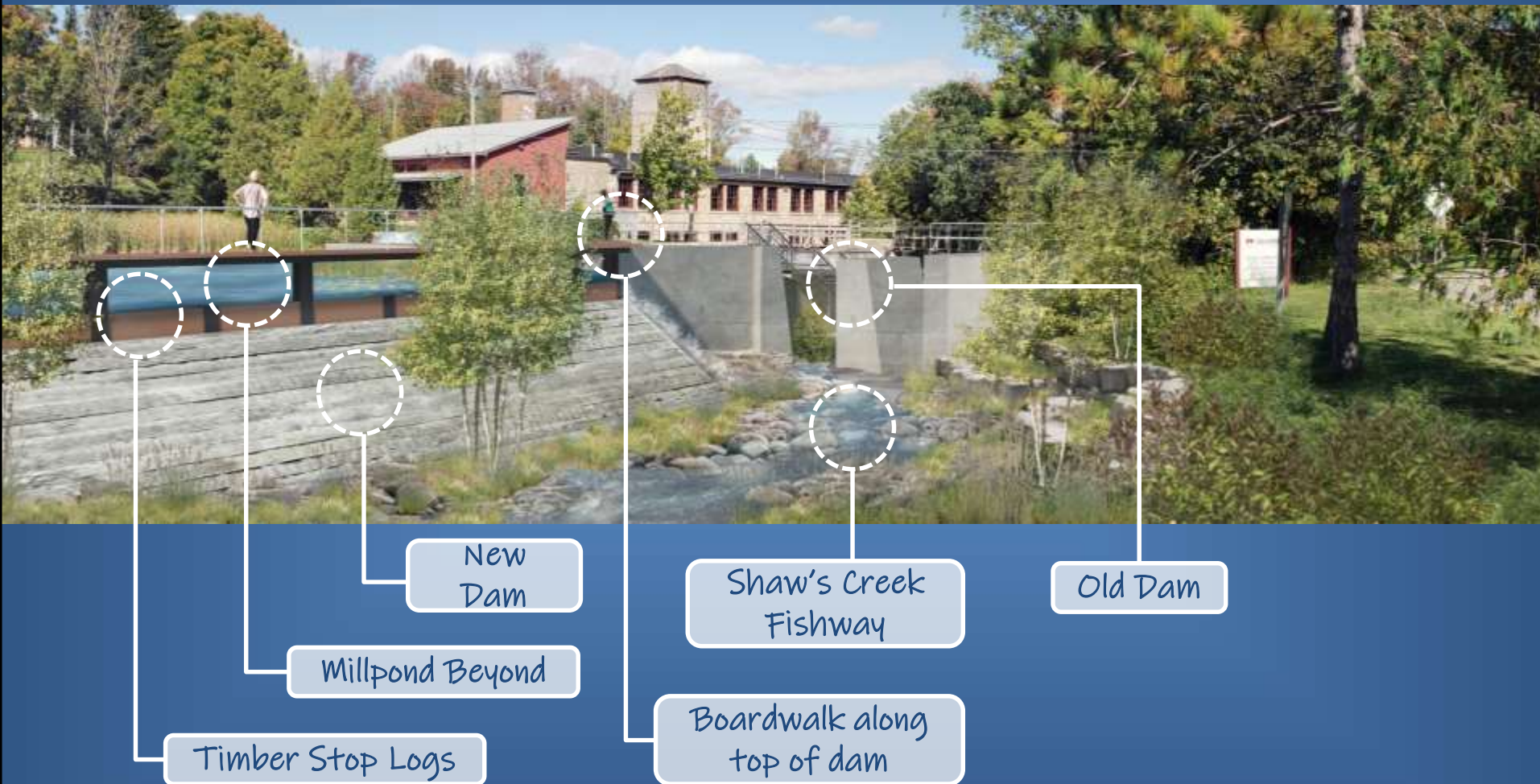
Landscape & Public Art Features

Landscape concept rendering looking downstream at street level



Landscape & Public Art Features

Landscape concept rendering looking downstream at street level



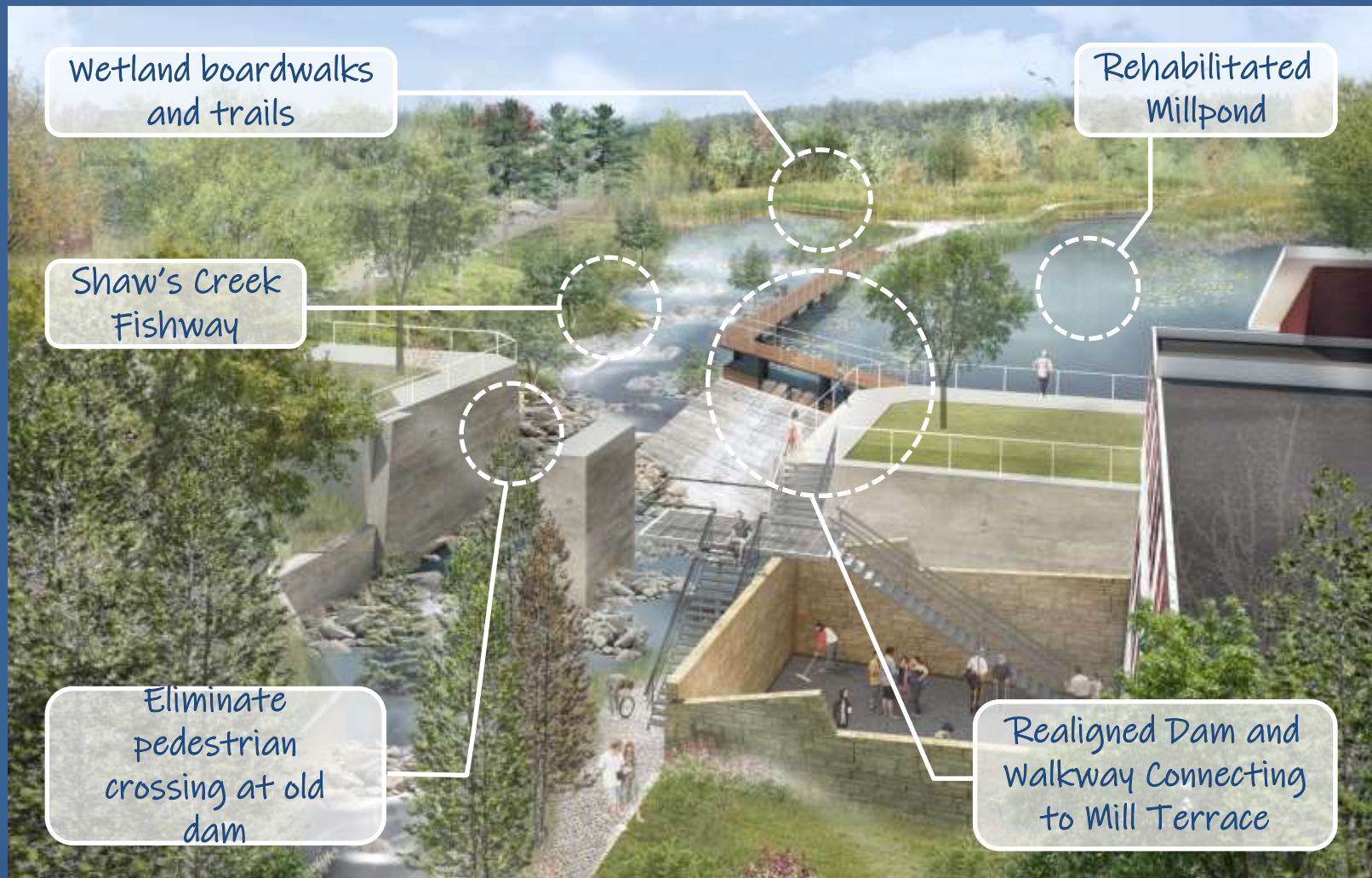
Landscape & Public Art Features

Updated rendering looking upstream



Landscape & Public Art Features

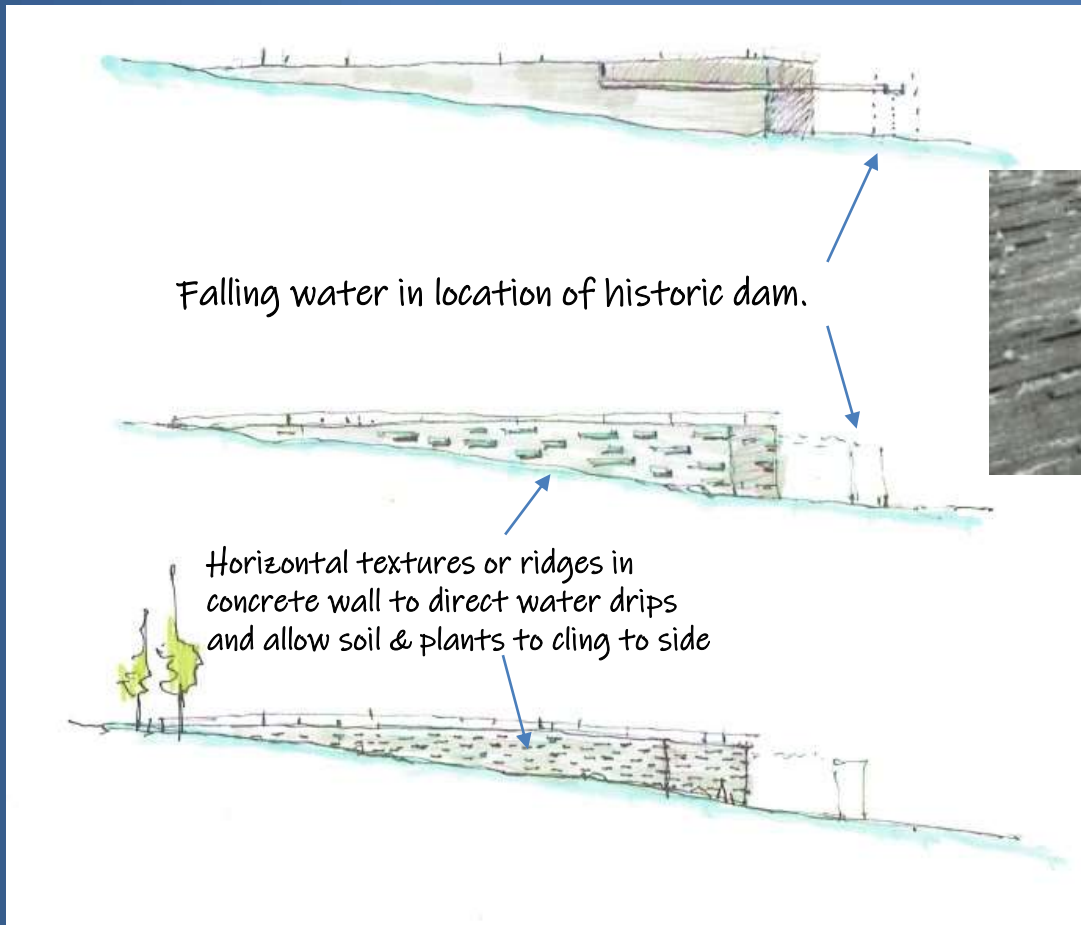
Updated rendering looking upstream



Landscape & Public Art Features

Concepts under consideration

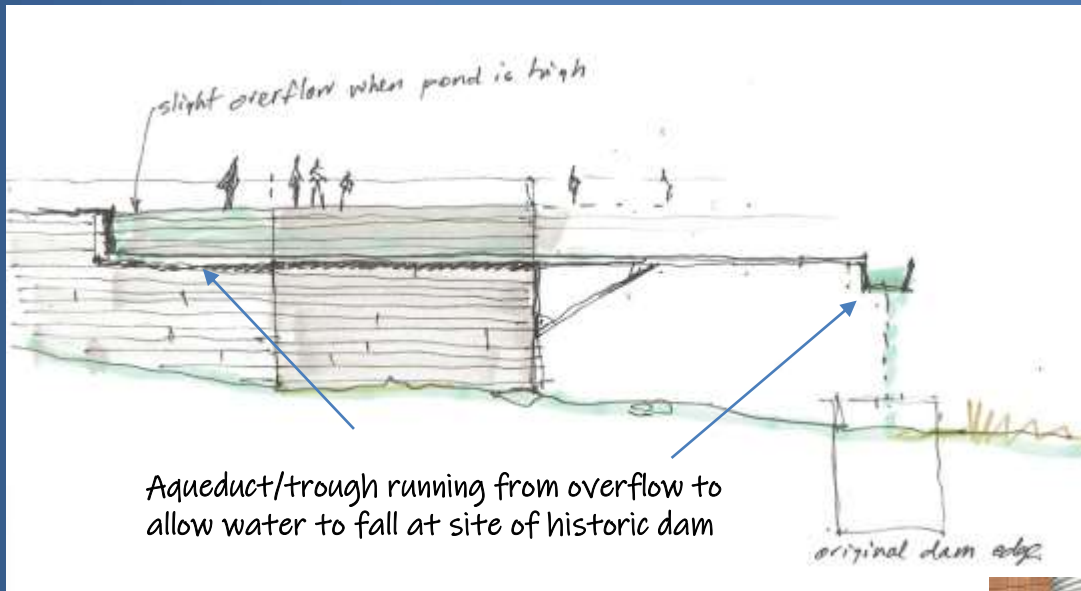
Water features, and softening the “look” of the dam



Landscape & Public Art Features

Concepts under consideration

Water features, and softening the “look” of the dam



Landscape & Public Art Features

Concepts under consideration

Art Sites & “Curatable Spaces”

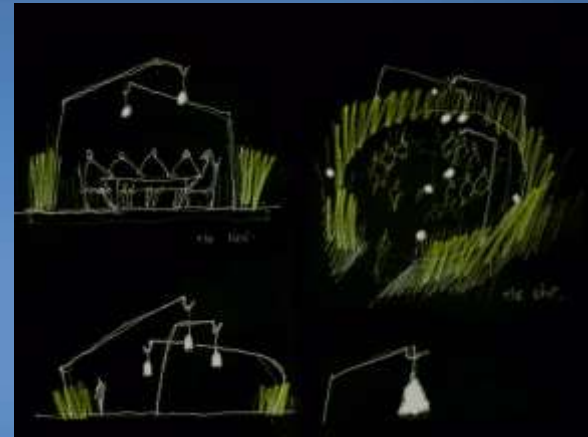


Curatable spaces throughout the site to allow changing or permanent art installations along trail network.

Landscape & Public Art Features

Concepts under consideration

Boardwalks and “nests”



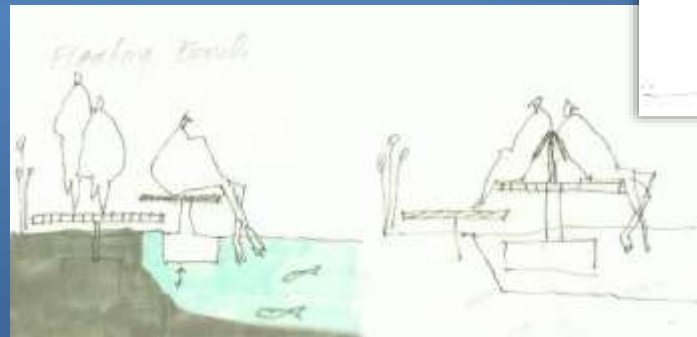
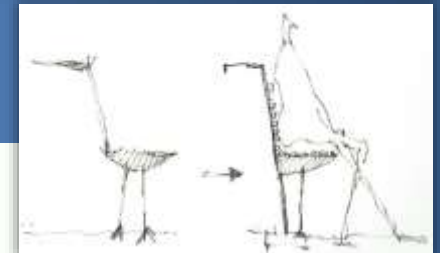
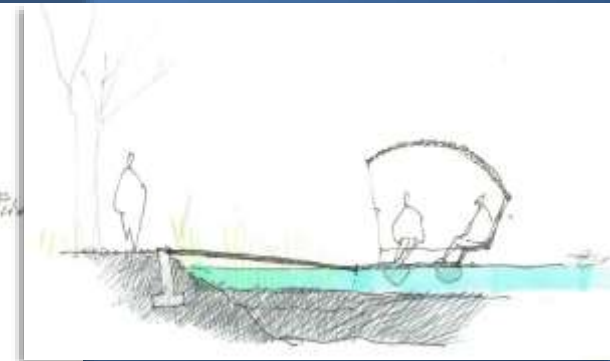
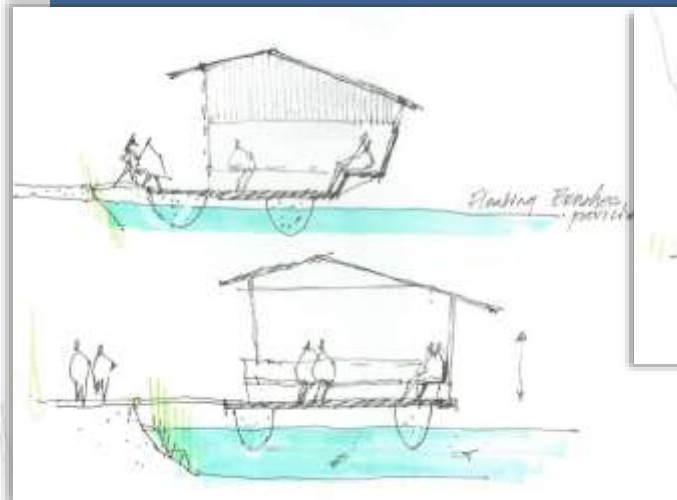
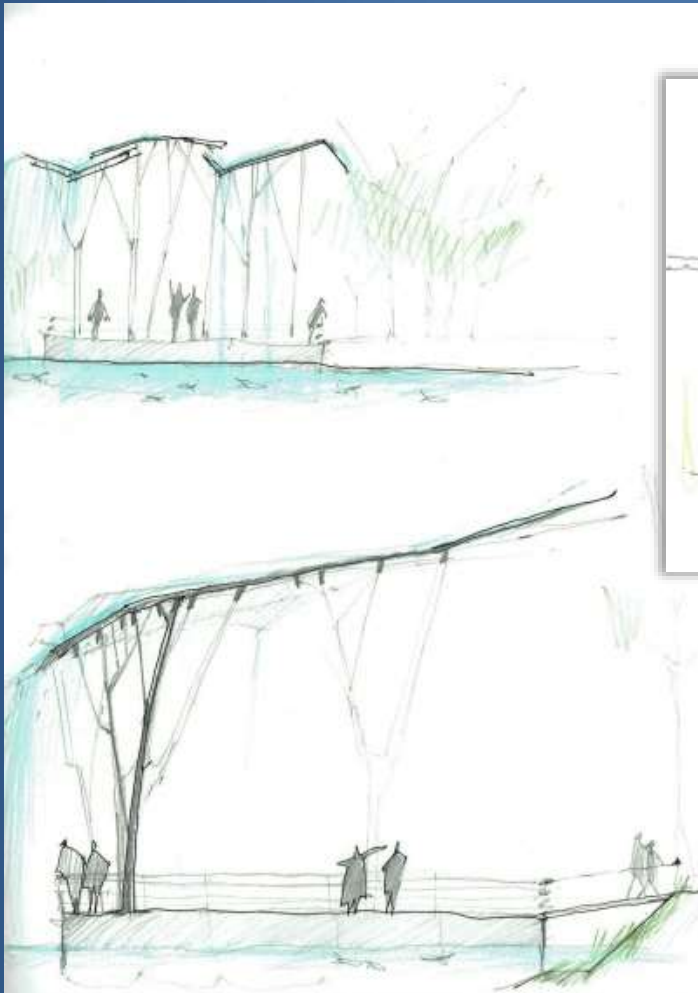
Discover a
gathering
space.



Landscape & Public Art Features

Concepts under consideration

Floating or waterside gathering places



Floating performance platform with solar-powered waterfall backdrop from roof.

Landscape & Public Art Features

Concepts under consideration



Floating or waterside gathering places



Landscape & Public Art Features

Public Art concepts under consideration

“En plein aire” easels permanently placed to frame views of the landscape, making it the work of art.

En Plein Aire

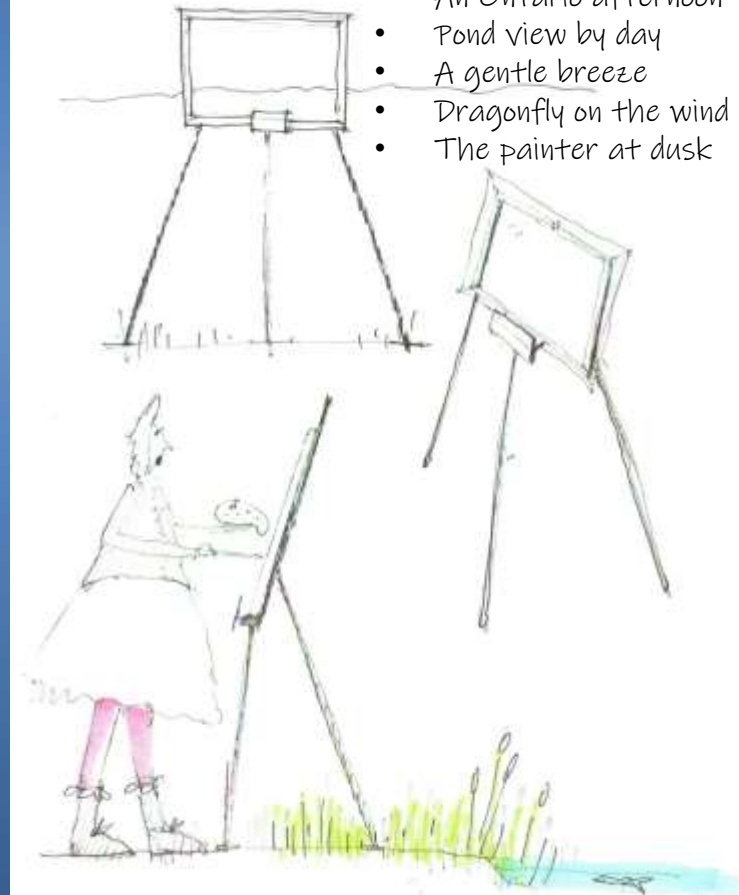
- An Ontario afternoon
- Pond view by day
- A gentle breeze
- Dragonfly on the wind
- The painter at dusk



Easels can also hold canvasses for artists to do outdoor landscape painting.

En Plein Aire

- An Ontario afternoon
- Pond view by day
- A gentle breeze
- Dragonfly on the wind
- The painter at dusk



Landscape & Public Art Features

Concepts under consideration



Project timing & execution considerations

- We hope to achieve MNRF/LRIA approval by late summer 2019
- After that will be a fundraising period of ~2 years
- Construction may begin in 2021 (entirely funding dependent)
- Construction of the dam may be accomplished in one construction season (June – November), however we do not yet have a construction sequence plan
- AMA intends to keep the neighbours and the general public informed of progress as the Millpond Rehabilitation Project moves ahead

Questions & Comments



info@altonmillpond.org
www.altonmillpond.org