



TIKKURILA DAM REMOVAL IN THE CITY OF VANTAA, FINLAND

Dam removal Europe, Hudiksvall, Sweden, September 24-26, 2018

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- Starting points and drivers for the project
- Timeline & project group
- Pre-survey & project description
- Public inclusion & opinion
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BLUE
WATER RESOURCES



GREEN
NATURAL HABITAT

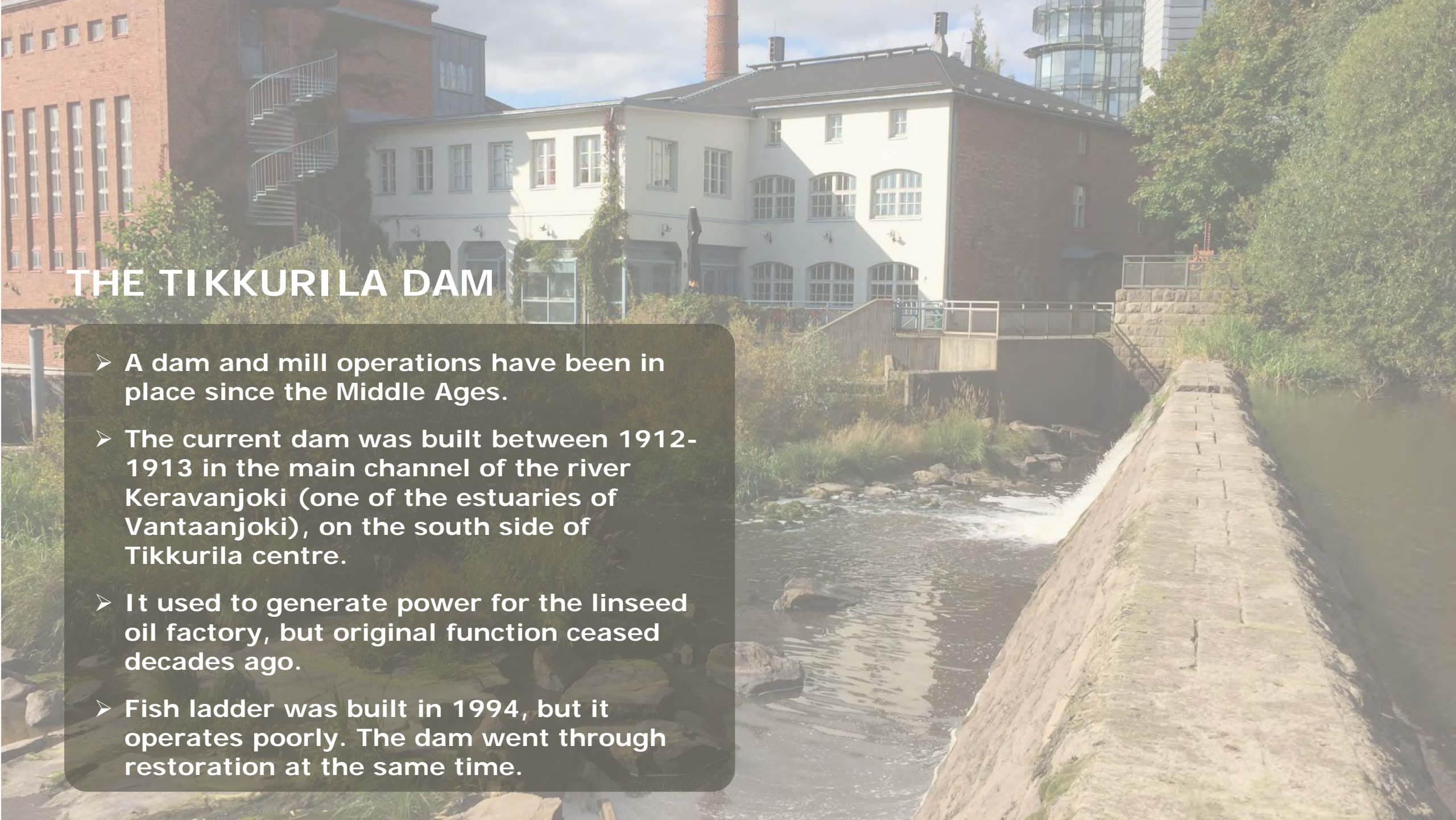


RED
PEOPLE'S WELL-BEING



THE TIKKURILA DAM

- A dam and mill operations have been in place since the Middle Ages.
- The current dam was built between 1912-1913 in the main channel of the river Keravanjoki (one of the estuaries of Vantaanjoki), on the south side of Tikkurila centre.
- It used to generate power for the linseed oil factory, but original function ceased decades ago.
- Fish ladder was built in 1994, but it operates poorly. The dam went through restoration at the same time.

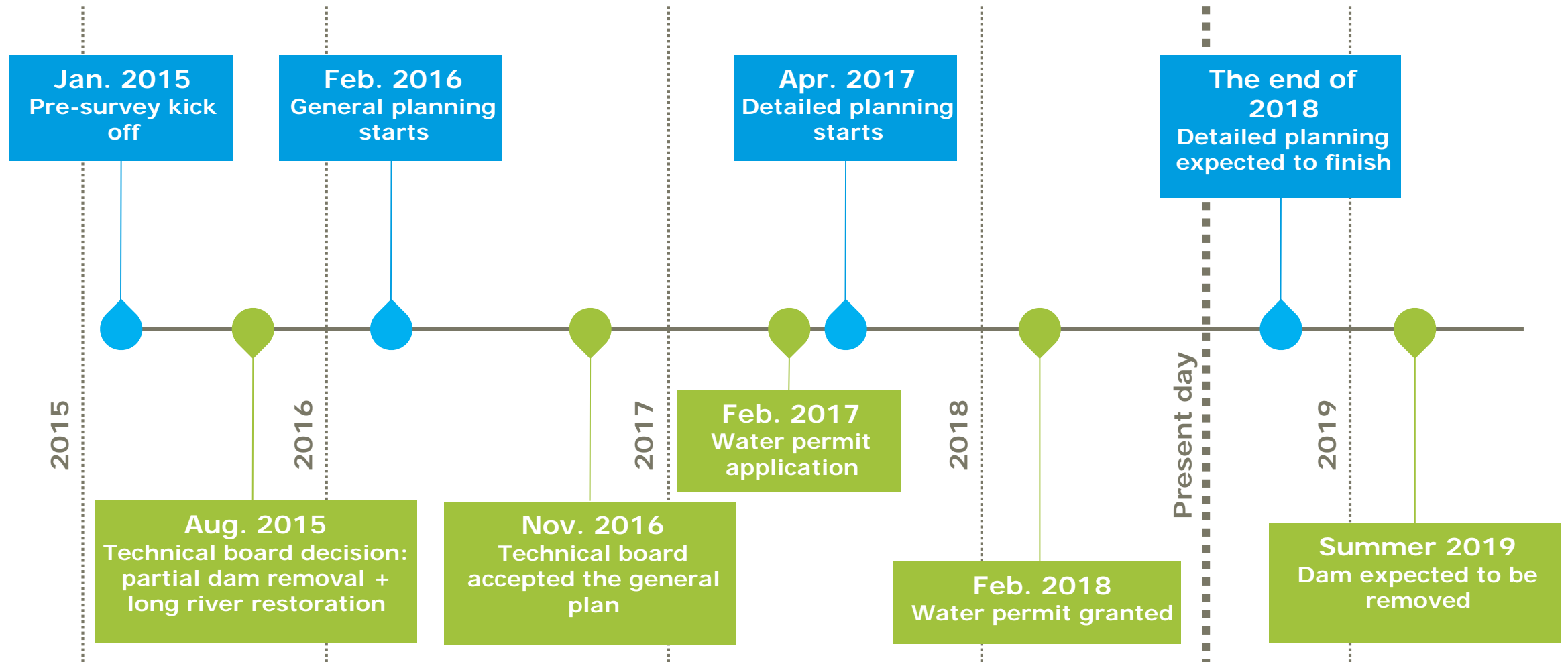




STARTING POINTS AND DRIVERS

- Refurbishment of the dam was inevitable due to the repair requirements that were presented at dam safety inspections.
- There was a strong ambition for removing the dam, both with the technical directors and politicians. Still, removal of the dam was decided only after the pre-survey had been done and approved by the technical board.
- In a larger scale, there was a drive to develop the waterfront to measure up to the increasing recreational use.

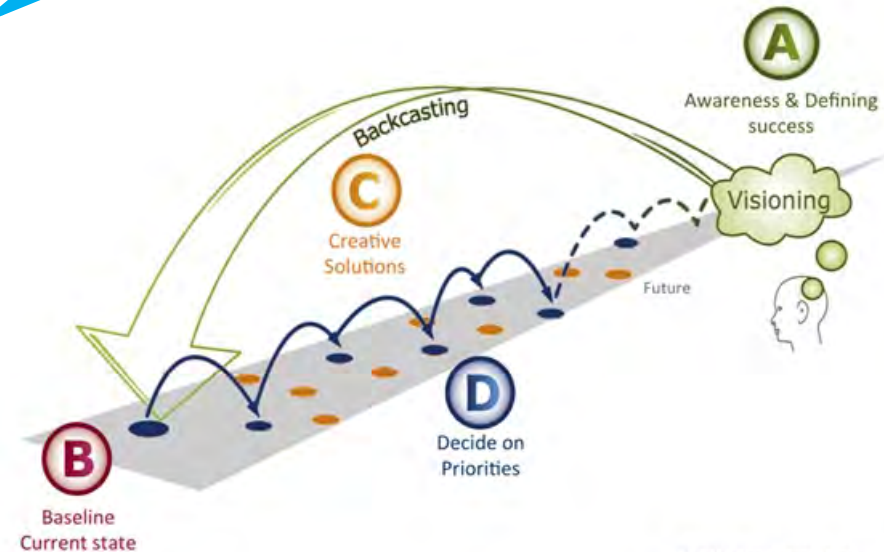
TIMELINE



THE PRINCIPALS FOR SUCCESSFUL IMPLEMENTATION OF BLUE-GREEN INFRASTRUCTURE



The change of culture
spurs from passion and
insight = **SHARED
VISION**



ROUND TABLE

Steering group

Landscape architecture
(chairman)

City planning

Fishing

Geotechnical engineering

Structural engineering

Water resources engineering

Environmental planning

City museum

Other stakeholders



Ramboll group

Landscape architecture
(project lead)

Fishing industry

Geotechnical engineering

Structural engineering

Water resources engineering

Municipal engineering

Hydrobiology

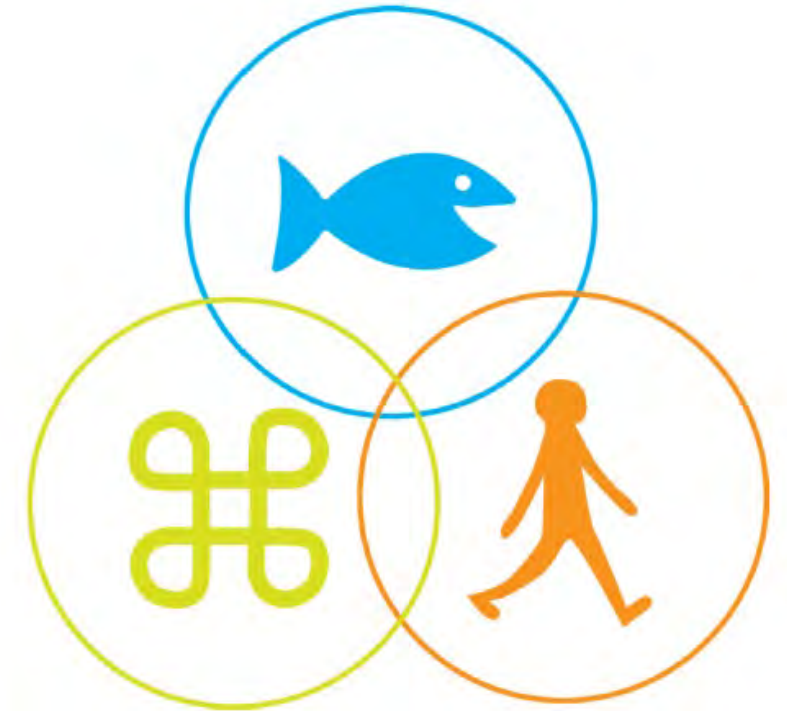
Contaminated soils

Lighting

Cost accounting

Sub-consultants (Fishway
structures, underwater soundings)

ALIGNING PERSPECTIVES



During the pre-survey, it became evident that three aspects with special importance needed to be considered and accommodated in the area: **ecology** (especially fish), **recreation** and **cultural history**.

SOURCE INFORMATION

A photograph of a riverbed filled with numerous light-colored, smooth rocks of various sizes. The water is shallow and flows between the rocks. In the background, a concrete bridge with a metal railing spans the river. To the left of the bridge, a tall, cylindrical brick chimney stands prominently. The surrounding area is lush with green trees and foliage. The sky is clear and blue.

Development goals for land use and the riverfront

Large and dialogic steering group

Old photos of the area

The City Museum's contribution

Perceptions of users and maintenance personnel

PRE-SURVEY ALTERNATIVE PLANS AND EVALUATION MATRIX

0+

Refurbishment of the fish ladder



1

Partial removal of the dam



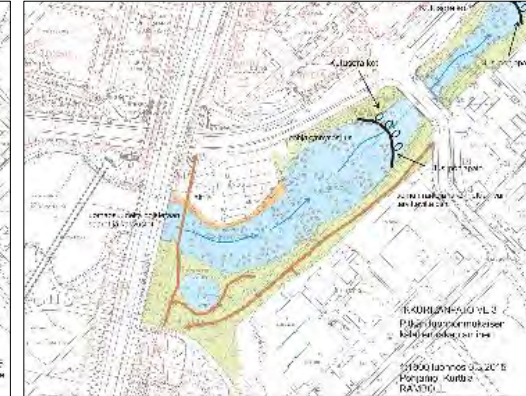
2

Complete/nearly complete removal of the riverbed section of the dam



3

Complete/nearly complete removal of the riverbed section of the dam and long natural rapids



	0+	1	2	3
Fisheries	0/+	+	+	++
Fish production	0	+	+	++
Other benthos	0	+	+	++
Fishing	0	+	+	+
Water landscape	0	?	?	?
Recreational use of waterfront and	0	+	+	0/+
Cultural history value	0	-	--	-
Construction costs	0	--	-	--
Costs for upkeep	-	-	0	0
Effects on water level	0	Low	High	Medium

FINAL PRE-SURVEY PLAN

The map displays a residential area with a central water feature and surrounding buildings. The legend identifies the following elements:

- Kiveys** (Stones)
- Puupinta** (Wood surface)
- Kutusorakko** (Gravel pit)
- Nykyinen pohjakynnyks** (Current base threshold)
- Uusi pohjakynnyks** (New base threshold)
- Kivikko** (Gravel)
- Maanpeitekasvi** (Ground cover plant)
- Niitty** (Meadow)
- Olemassa oleva puusto** (Existing tree stand)

The map also includes a scale bar from 0 to 100m and a north arrow.

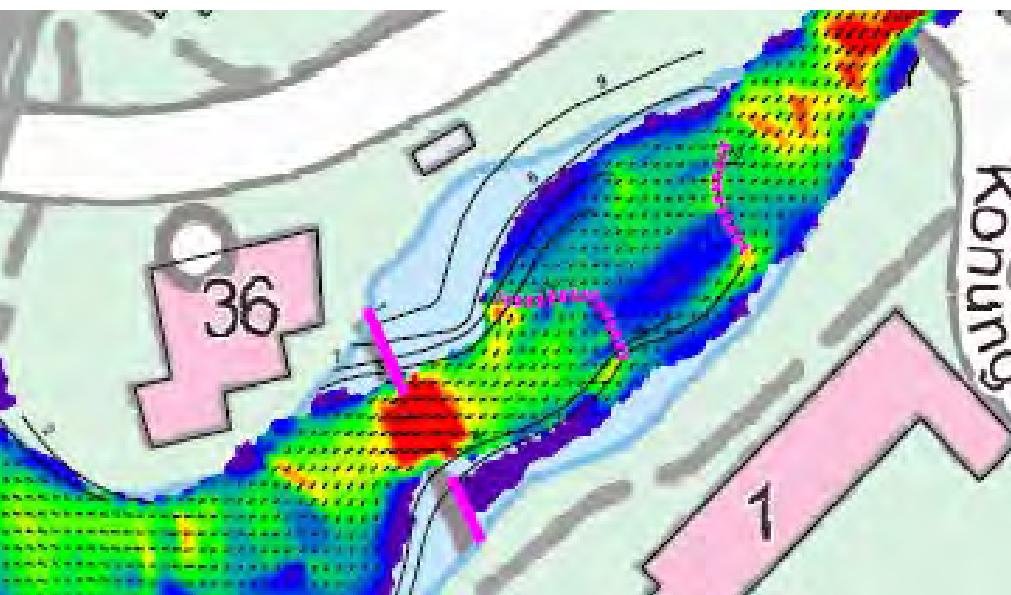
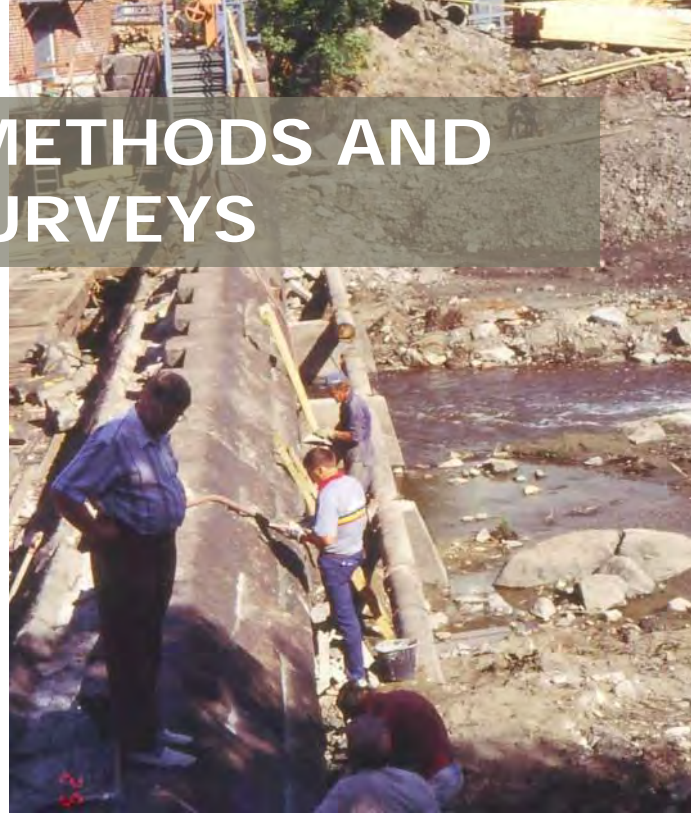
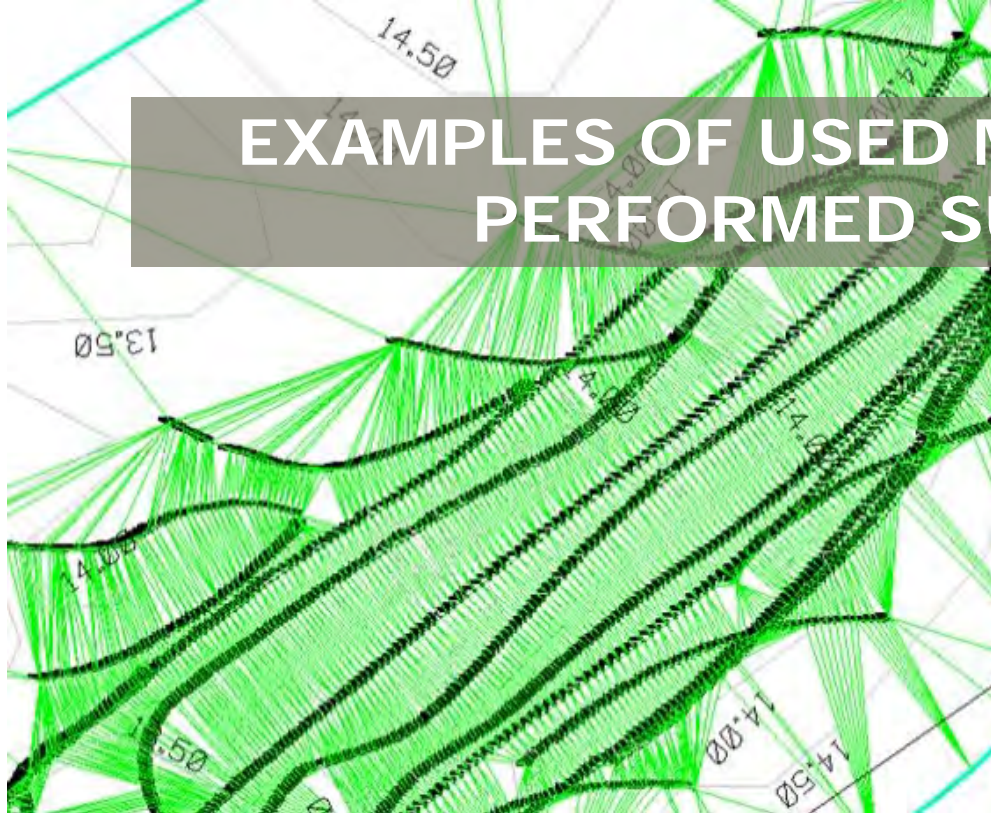


A detailed technical site plan for a water management project. The plan shows a central area with green hatched regions representing vegetation or land cover, and blue areas representing water bodies or channels. Key features include:

- Kalaporras**: A rectangular structure labeled "Kalaporras, kalasäiliöstö nro. 57245-12".
- Tikkurilantie**: A road running along the top left.
- Vermisakatu**: A road running along the top right.
- Kuninkaalantie**: A road running along the bottom right.
- Pöytälahti**: A large pond or reservoir on the left side.
- Kerävyajoki**: A channel or stream flowing through the center-right.
- Leuhonan aluekartta**: A label pointing to a specific area within the plan.
- PL 163, PL 188, PL 231, PL 276**: Various plot numbers indicating different sections of the site.
- 0+000000**: A coordinate marker at the bottom left.
- 0 10 20 30 40 50m**: A scale bar at the bottom right.
- A**: Two points labeled 'A' are marked on the plan, likely indicating specific locations of interest.


The plan includes numerous contour lines, elevation markers, and other technical details typical of a civil engineering drawing.


EXAMPLES OF USED METHODS AND PERFORMED SURVEYS



INCLUSION OF USERS AND STAKEHOLDERS AND PUBLIC OPINION

Pitäisikö pato avata Tikkurilassa?


Kyllä  96% (953 ääntä)

Ei  4% (38 ääntä)

Ääniä yhteensä: 991

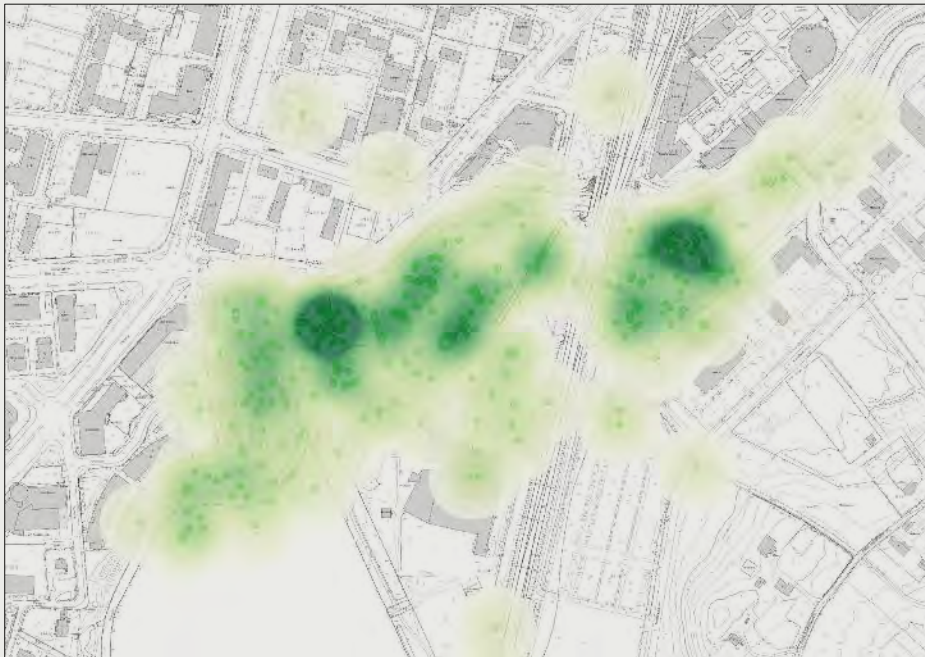
Pitäisikö Tikkurilan pato säilyttää nykyisellään?

Ei  91% (1001 ääntä)

Kyllä  9% (102 ääntä)

Source: Vantaan Sanomat

Ääniä yhteensä: 1103



"I think that the dam of Tikkurila should definitely be removed and restored as a diverse whitewater area, that would serve city dwellers as well as fishermen in the future."

"Vantaa as a brave forerunner towards a more sustainable and greener nature"

"I object the partial removal of the dam, because it is a part of the great industrial and village history of Tikkurila"

"By removing the dam, you'll create a gorgeous place to enjoy a free-running river in the middle of the growing Tikkurila, and at the same time you'll enable easy passage to upstream spawning grounds for migratory fish, for example trout."

"I and hundreds of other volunteers could be aiding in river restoration to increase fish spawning!!!"

"Vantaa would be a forerunner in the growing positive trend of removing disadvantageous water structures that impair biodiversity."







*The success of the project is mostly due to establishing a **shared**, equitable **project culture** and **vision**.*

The tools and methods used to support decision-making, have helped interaction and aligning the perspectives of different parties and users.

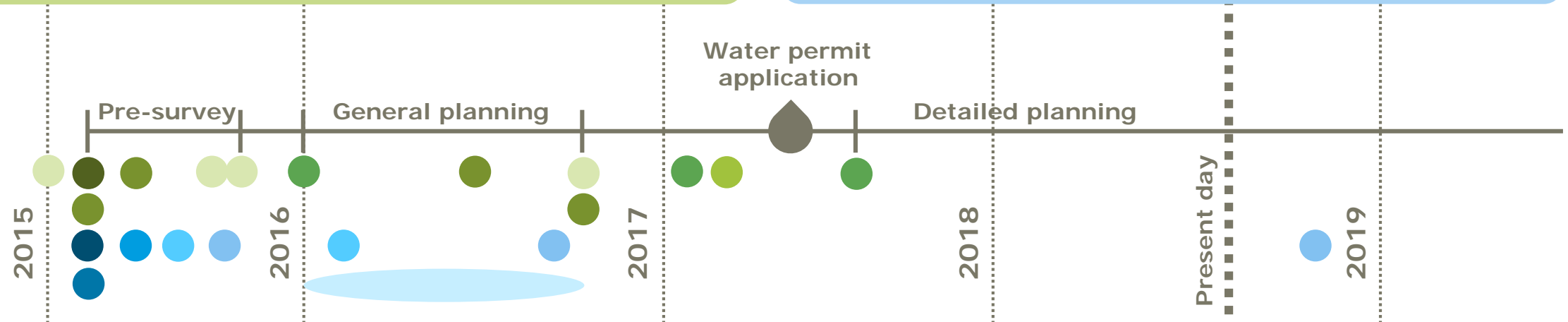
SUCCESS FACTORS

Interaction and decision-making

- Forming a multi-disciplinary project group and a shared vision
- Public inclusion
- Contacting water permit authority
- Decision-making
- Recalling original vision and evaluating topicality

Tools and methods

- Gathering source information
- Present state modelling
- Forming alternative plans & their evaluation
- Simulating occurrences
- Performing quotations
- Performing additional surveys



Throughout the project

- Sharing of knowledge and documentation
- Discussions between the steering group & consultant



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