

High Tide

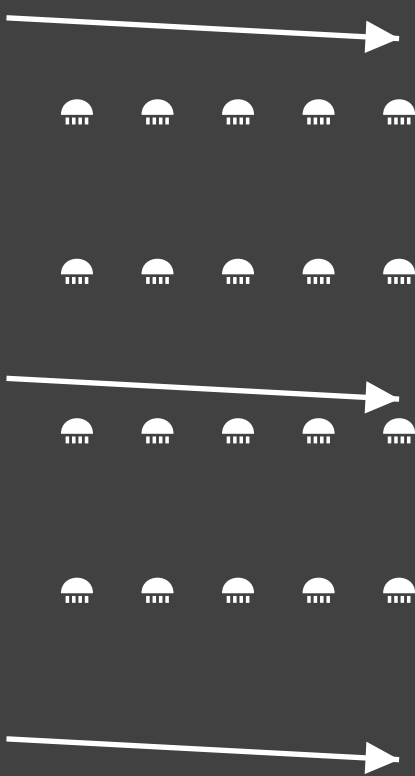
Keep water flowing.
Give jellyfish an exit.

A controlled diversion corridor starts after the existing offshore alert. Segmented water movement guides arrivals toward a checked open exit.

PROPOSAL + WORKING DIGITAL MODEL

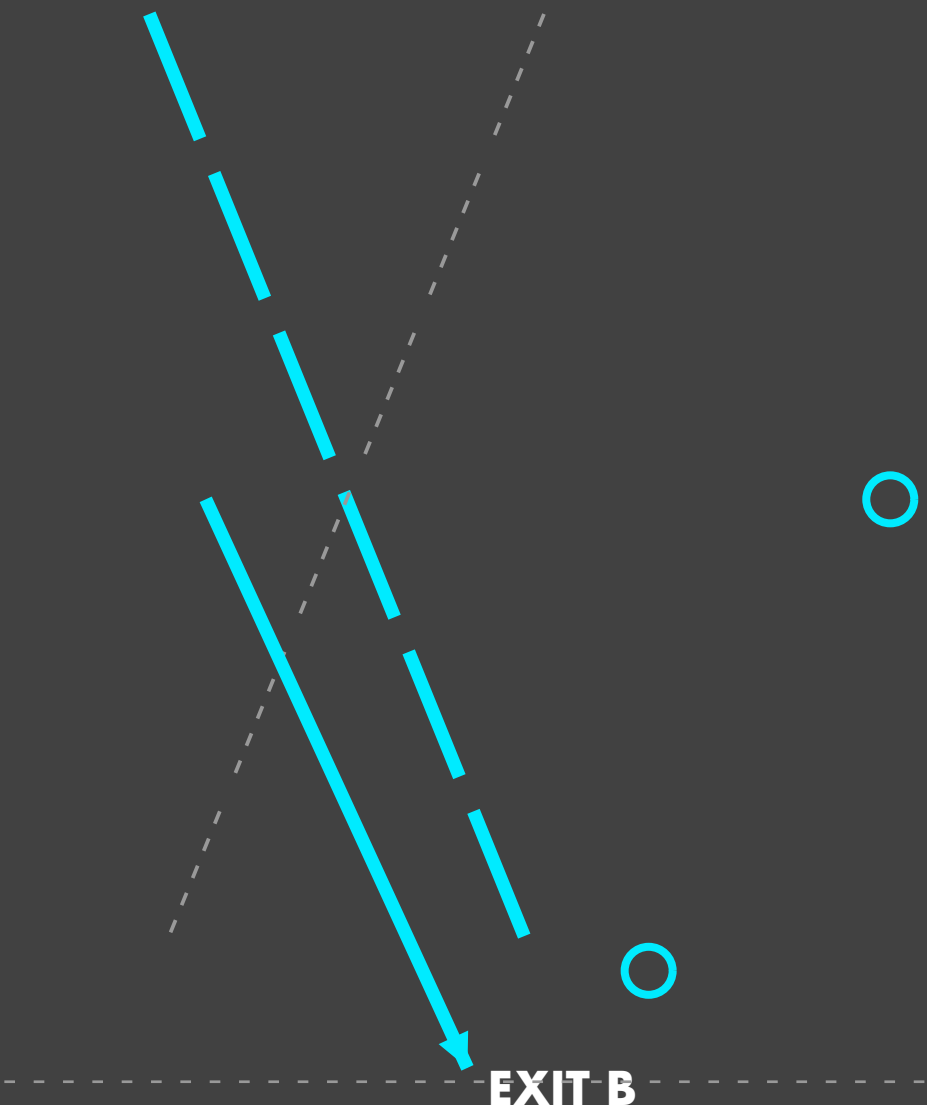
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ARRIVALS



ILLUSTRATIVE GEOMETRY

EXIT A



EXISTING
INTAKE

Continuous arrivals can restrict water flow.

01

Arrival

Current carries animals toward screens.

02

Coverage

Bodies cover openings.
Resistance rises.

03

Response

Cleaning and field support increase.

04

Operations

Restricted seawater supply can interrupt production.

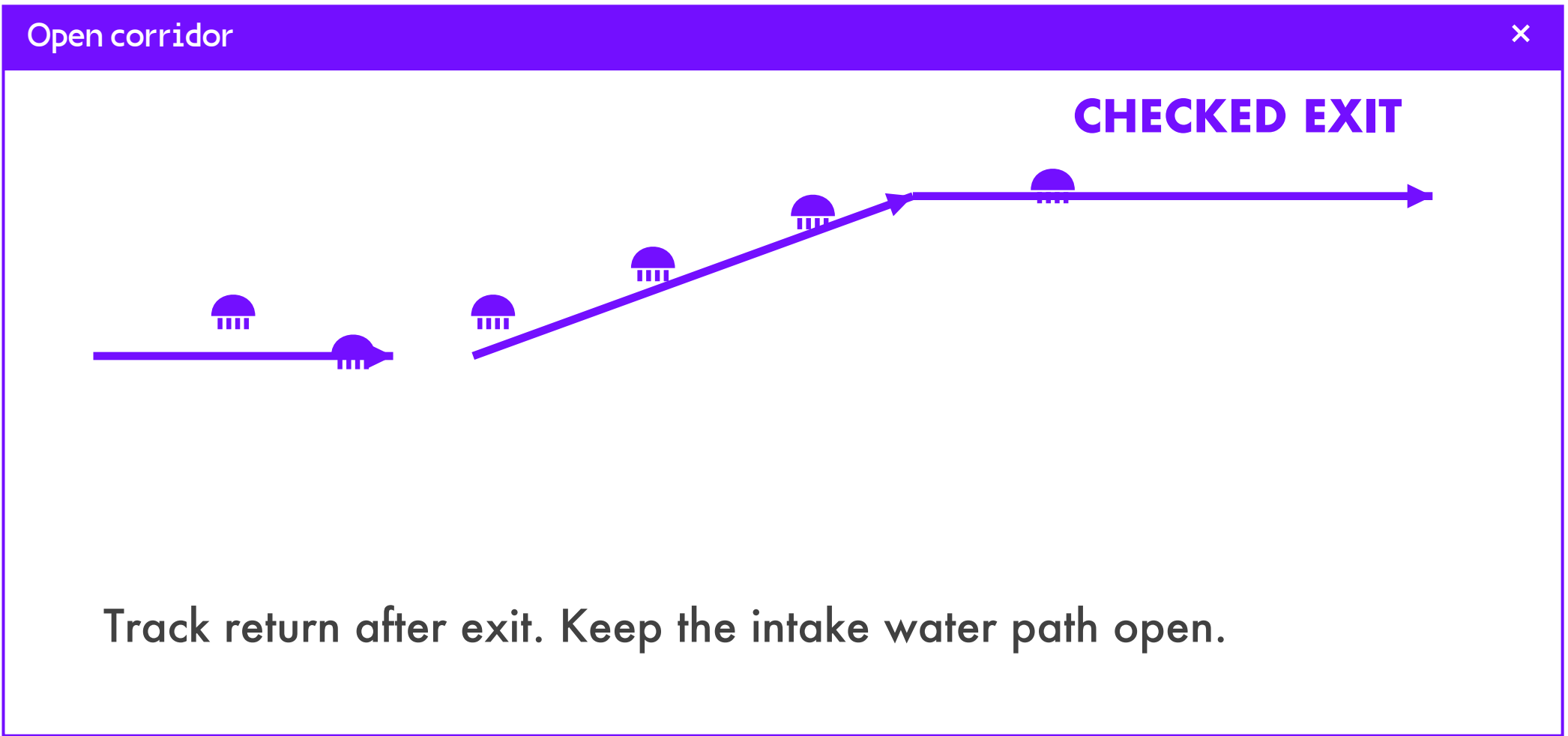
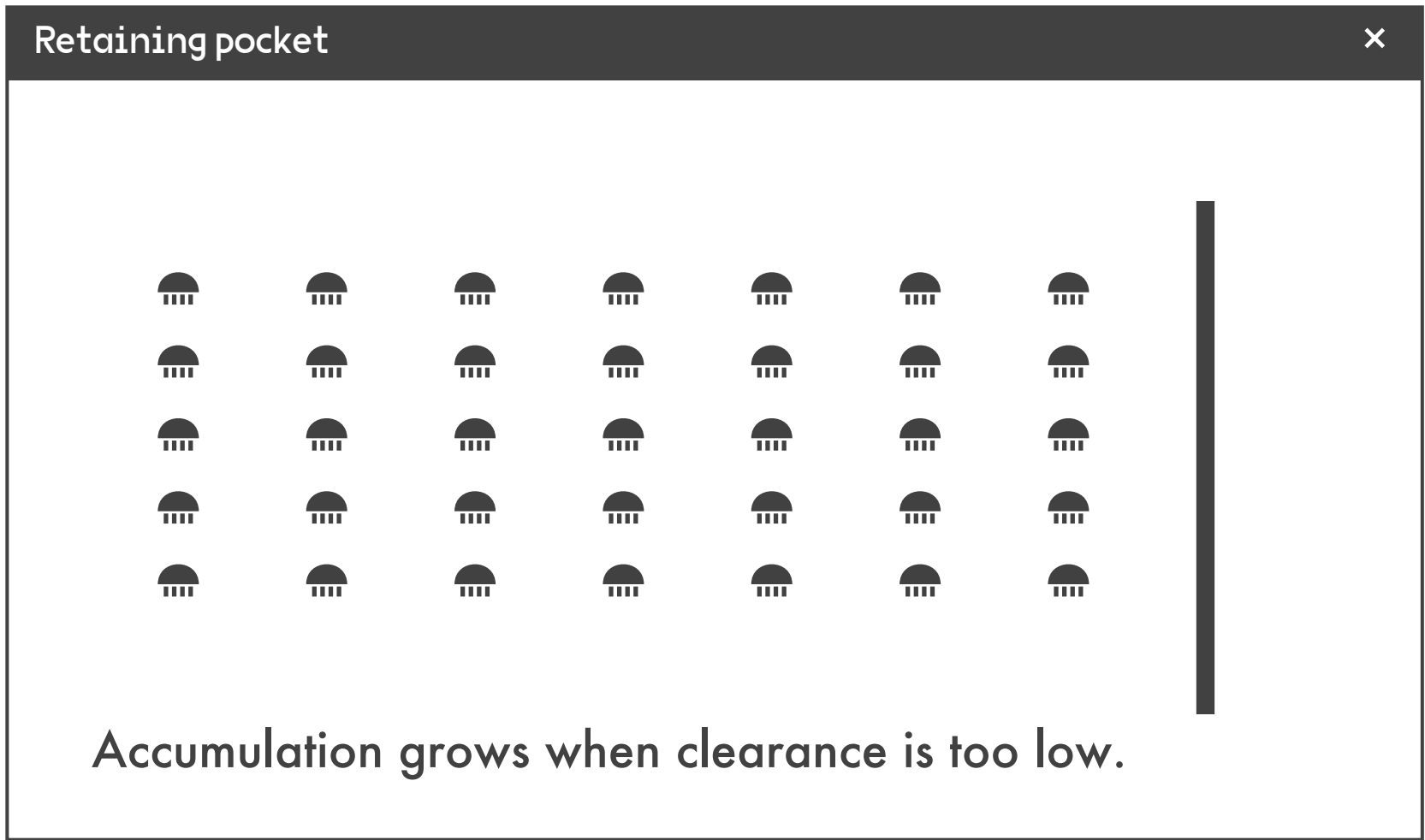
INTERNATIONAL OPERATING EXAMPLE

EDF reported four automatic unit stops at Gravelines on 10–11 August 2025 after jellyfish partially blocked filtration.

Source: EDF, 29 June 2026. No Barakah event or loss estimate is claimed.

A low intake count can hide a trapped group.

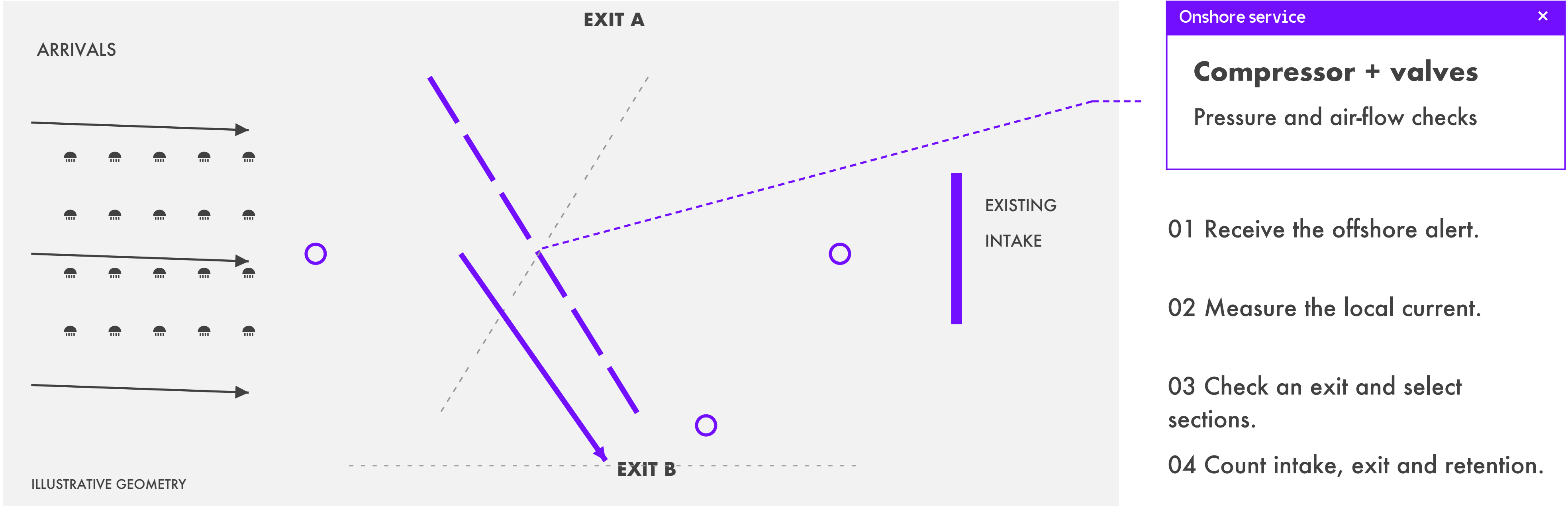
The design requirement is continuous clearance. Track animals that remain and return.



$$\text{Arrivals} = \text{intake} + \text{outside exit} + \text{retained} + \text{other boundary}$$

Conservation counts unique animals. Return events are a separate history. Diagram: original design proposal.

One corridor. A checked exit.

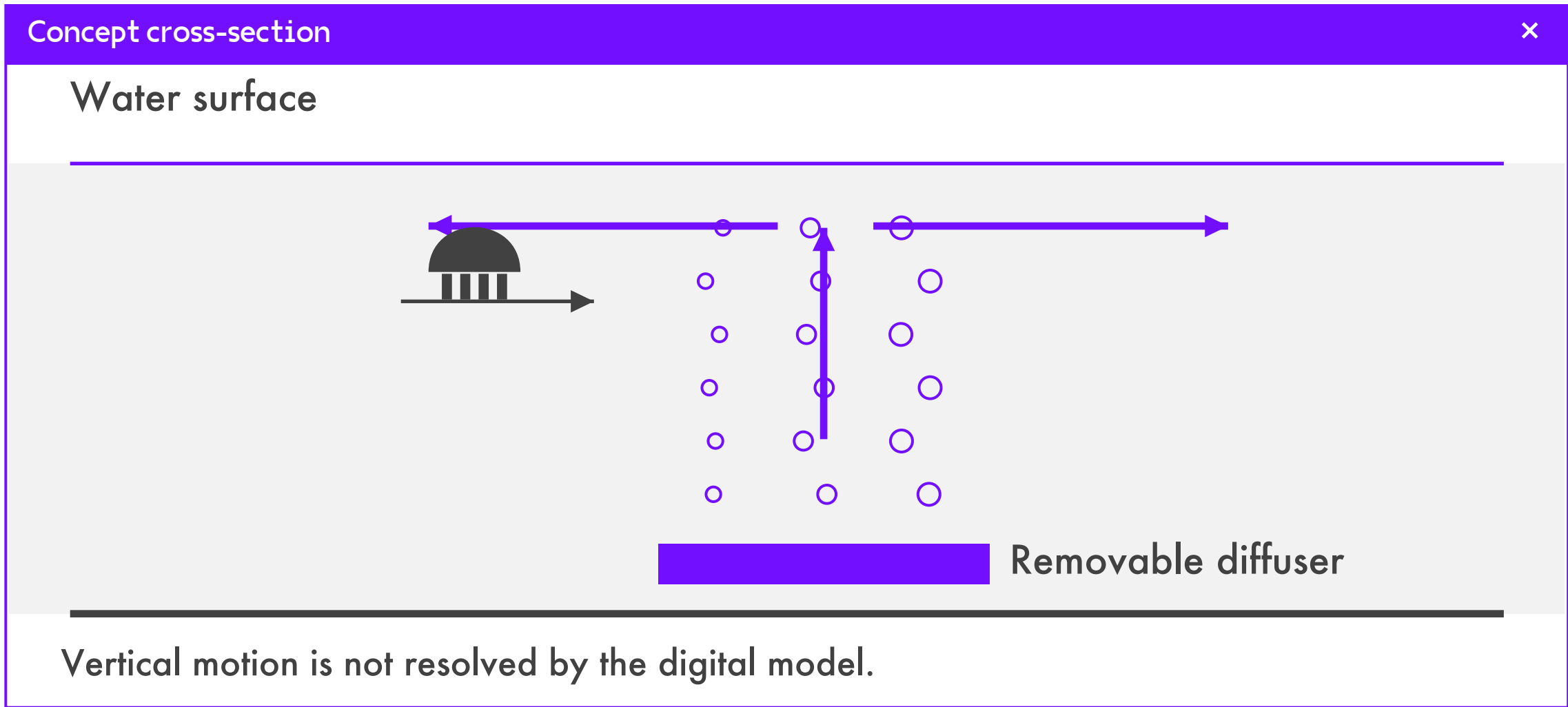


Observation points check movement. Fixed submerged sections connect to accessible valves. Equipment stays outside plant systems.

Design proposal. No facility geometry or plant operating data is used. Scope: ENEC challenge statement.

Bubbles move water. The curtain stays permeable.

Rising air entrains water. Surface spreading and the current may guide animals along an angled array.



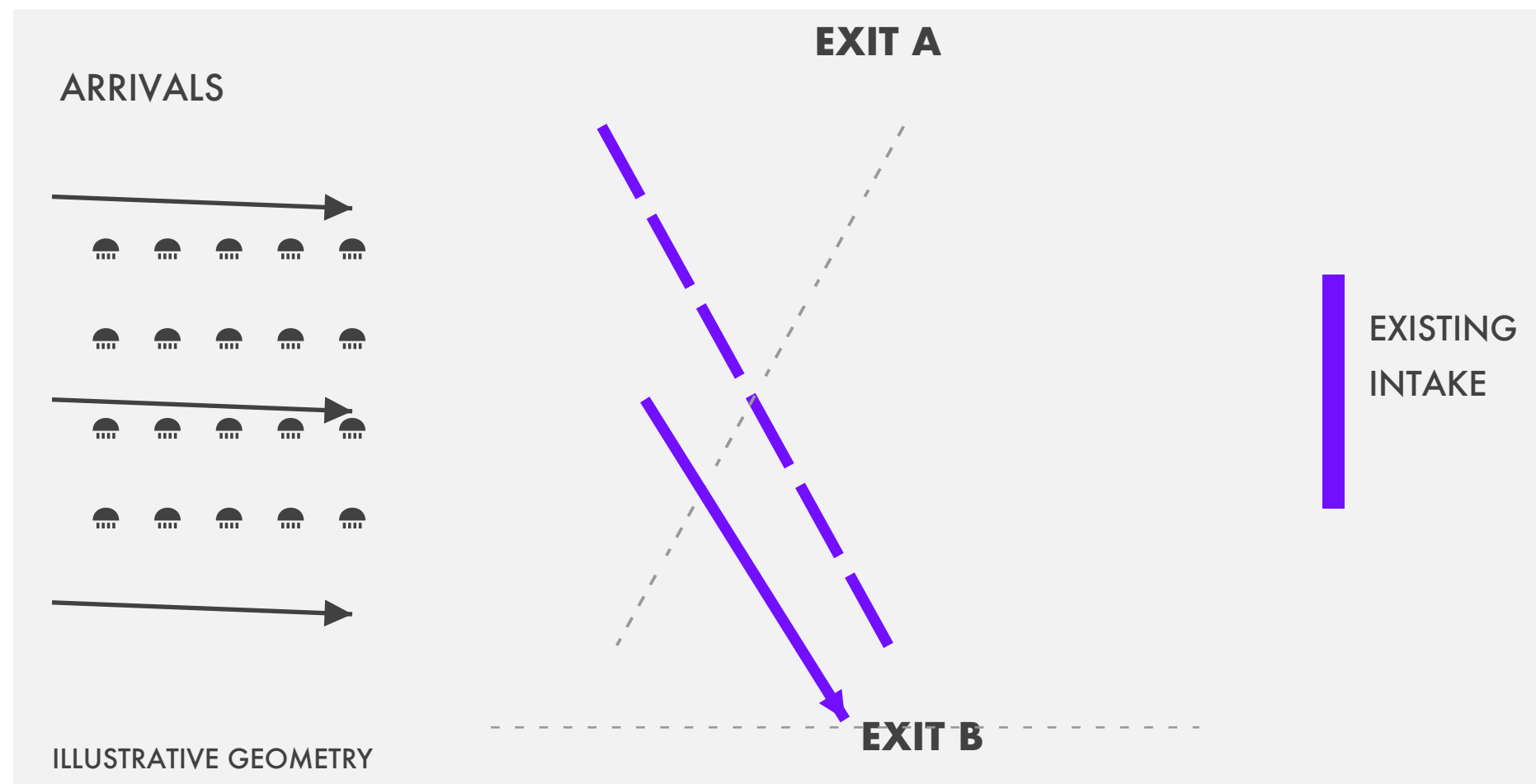
Published evidence

Field results were mixed. An 8 m high-flow curtain deflected compass jellyfish. A longer low-flow system did not reduce small hydromedusae.

Waves increased crossing in flume tests. Adult *Catostylus mosaicus* response and welfare remain unvalidated.

Haberlin, McAllen & Doyle (2021), *Aquaculture* 531, 735915. Evidence concerns other species and conditions.

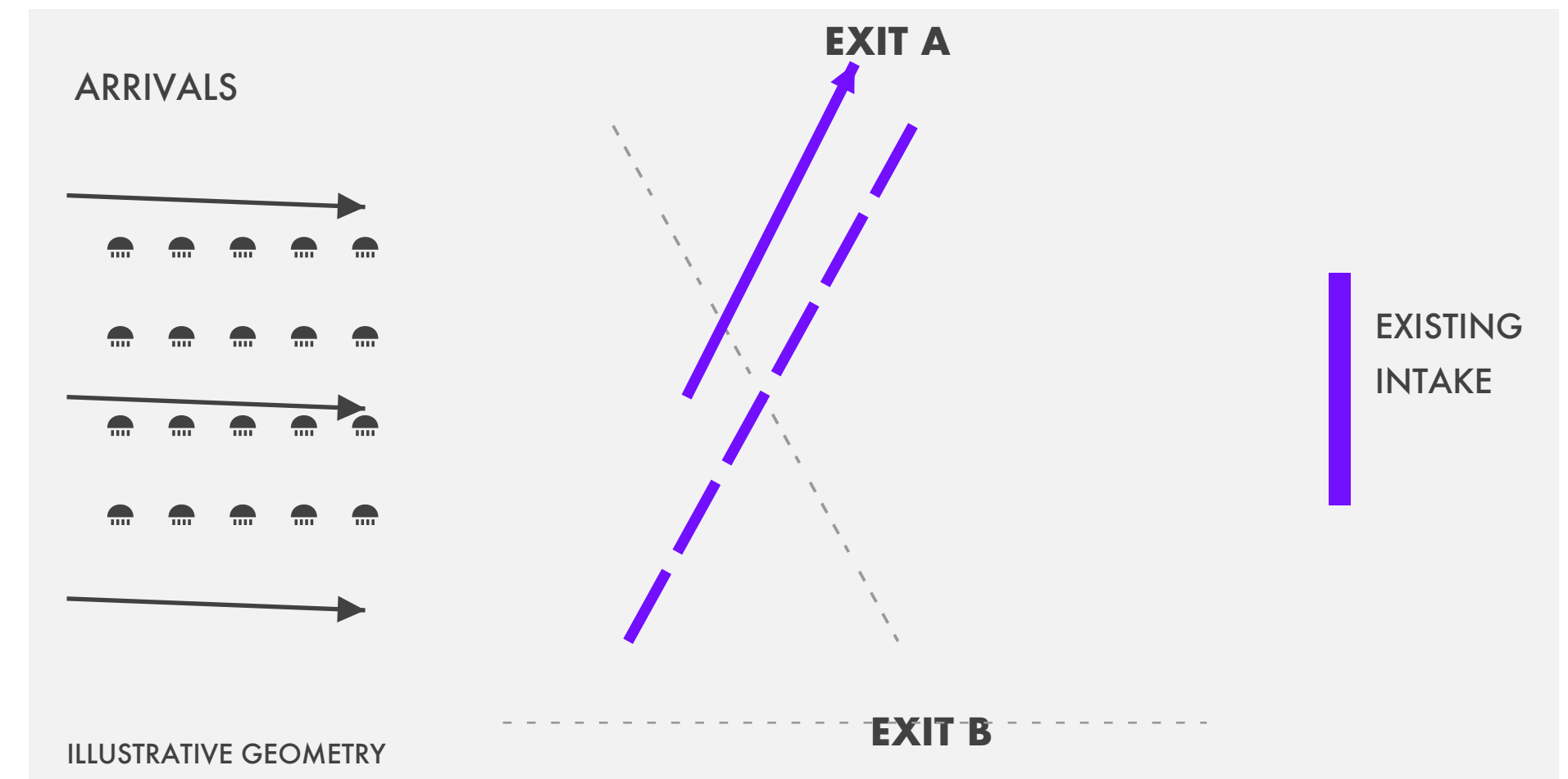
Change the route when the current changes.



01 / Divert to Exit B

Select a tested fixed arrangement. Activate nearby sections. Verify the actual flow and exit.

Control proposal. No suitable exit: unsuitable conditions. Loss of air supply: equipment fault.



02 / Divert to Exit A

Allow for switching delay. Track animals through reversal. Call for operator response outside limits.

Model result: read every outcome.

900 arrivals. 15-minute horizon. Cross-current reverses at 450 s. Same seed and geometry.

Configuration	Intake	Outside exit	Retained	Other	Returned*
No diversion	338	0	456	106	0
Fixed bubbles	0	33	722	145	360
Controlled sections	78	266	390	166	128
Angled porous guide	200	0	558	142	70
Distributed water flow	0	77	512	311	616

Fixed bubbles show zero intake entries but retain 722 animals. Switching reduces retention here, while 78 enter the intake.

Simplified transport model. Assumed actuator response. *Returned overlaps outcomes. "Outside exit" is not verified safe release.

Design for retrieval, cleaning and repair.

01

Onshore equipment

Service the compressor, receiver, valves and control enclosure where site access permits.

02

Submerged sections

Retrieve diffuser frames. Inspect fouling, hose leaks, pipe level and anchor movement.

03

Whole-life cost

Compare installation, power, vessel access, labour, replacement and cleaning frequency.

3 m illustrative depth

≈30 kPa hydrostatic pressure

Add line and diffuser losses. Use compressor ratings at the required pressure and flow.

Calculation: seawater density $1,025 \text{ kg/m}^3 \times 9.81 \text{ m/s}^2 \times 3 \text{ m}$. No supplier quote or maintenance saving is claimed.

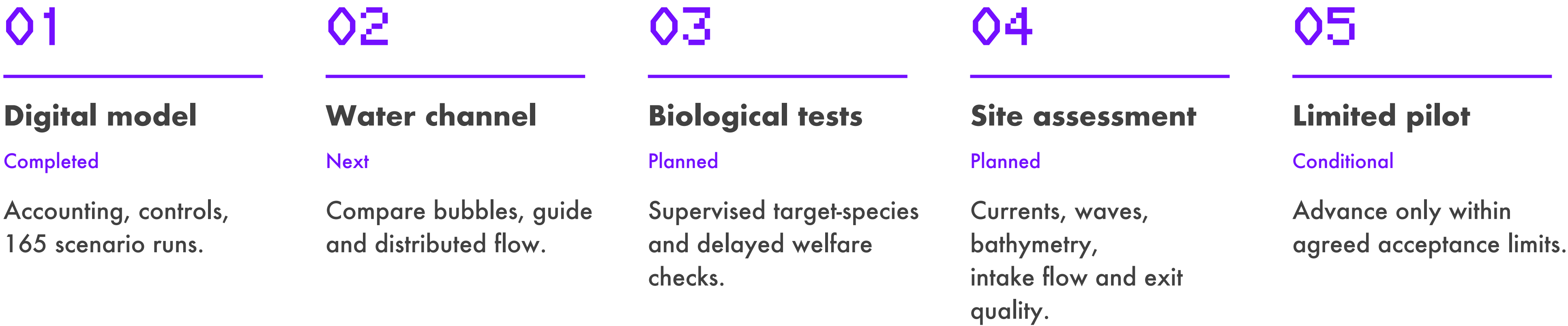
Protect the exit and the ecosystem.

Channel	Place upstream of strong capture flow.	Reject if sideways travel is too slow.
Sheltered coast	Check corners and return currents.	Reject a retaining pocket.
Exposed coast	Test waves, moorings and depth coverage.	Stop beyond the tested operating range.
Discharge area	Check temperature and water quality.	An outfall is not automatically a safe exit.

Biological tests must assess shear, bubbles, crowding, contact and delayed injury. Include non-target organisms.

Environmental design requirements. No survival rate, ecological approval or safe full-scale performance is claimed.

A testable route to a coastal pilot.



Reject the configuration if retention grows, returns remain high, water supply falls, or animal outcomes are unacceptable.

AI use: Codex supported research, writing, code, diagrams and video production. Synthetic narration uses macOS speech. The team must review and explain all work.

Evidence and reproducible sources accompany the submission. No physical or biological test has yet been completed.