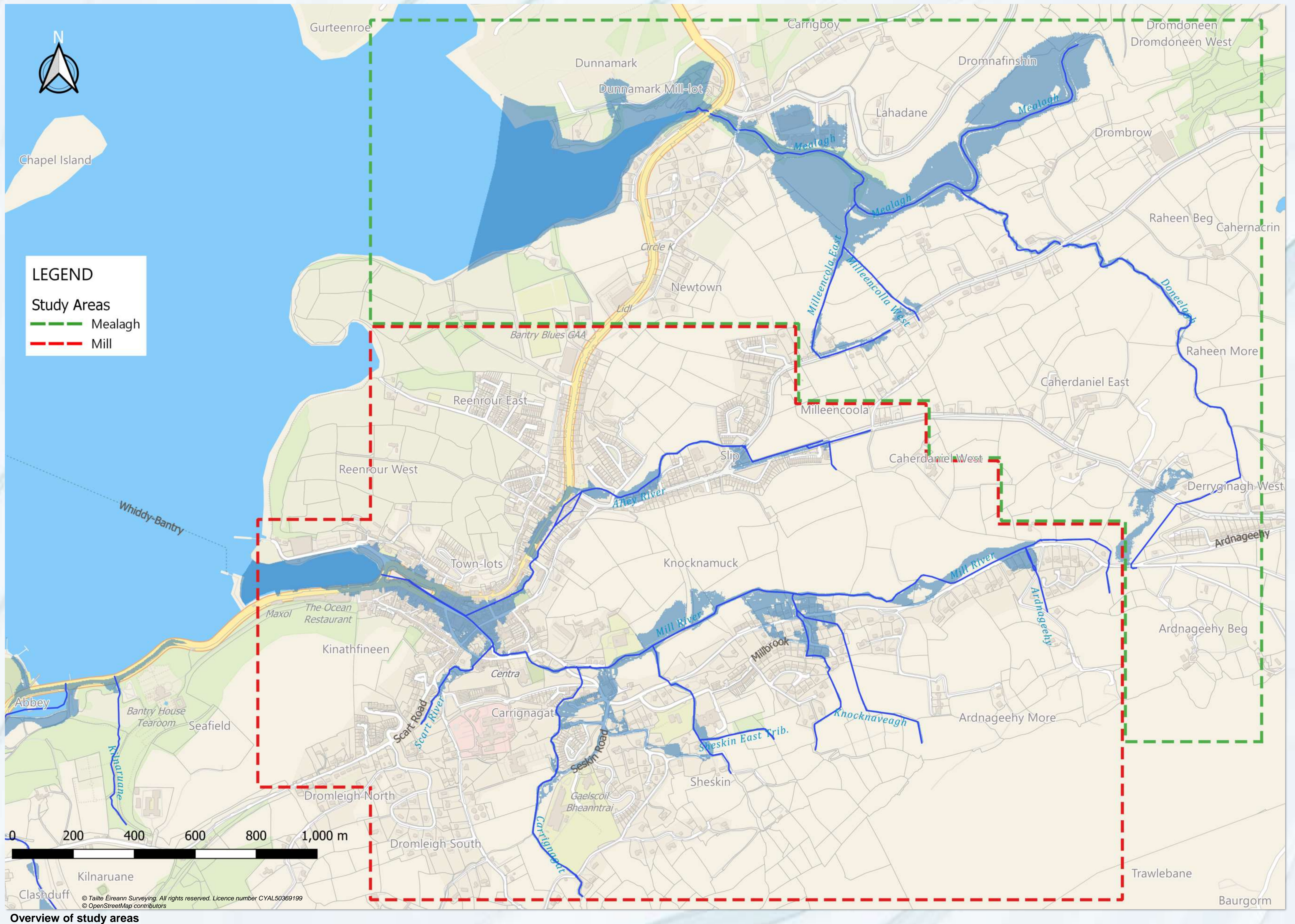


6

Areas identified at risk from fluvial (river) flooding



Flood Mechanism

Fluvial (River) flooding occurs when rivers and streams break their banks and water flows out onto any adjacent low-lying areas. The predictive flood map shows areas that are predicted to be flooded during a design flood event with an estimated probability of occurrence. The flood extents shown are for the 1% AEP (with 50% AEP coincident tidal level), which is an event with 1 in 100 odds of occurrence in a given year.

Mill River Catchment

- The Mill River catchment includes the **Mill**, **Alley** and **Scart** rivers along with a number of other tributaries.
- The main fluvial flood risk from the **Mill** River is out of bank flows at the Library as well as through manholes on the existing Mill culvert.
- The fluvial risk from the **Scart** is due to the existing culvert system at the lane off Chapel Street having insufficient capacity to convey the estimated flows. This results in overland flows entering Wolfe Tone Square via William Street.
- The **Alley** River results in flooding of properties on Glengarriff Road due to insufficient conveyance capacity within the culvert network downstream of the Community Gardens.

Mealagh River Catchment

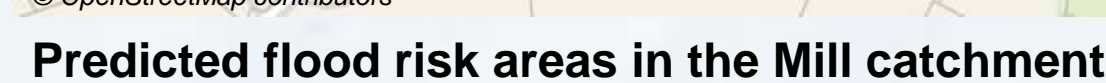
- The properties at fluvial flood risk from the Mealagh River are located on the northern bank of the river.
- The river exits its bank and inundates the Lahadane Business Park and residential properties either side of the Old Donemark Bridge.
- The Mealagh River is not influenced by coincident tidal flows.



~ 193 properties at risk in the Mill Catchment

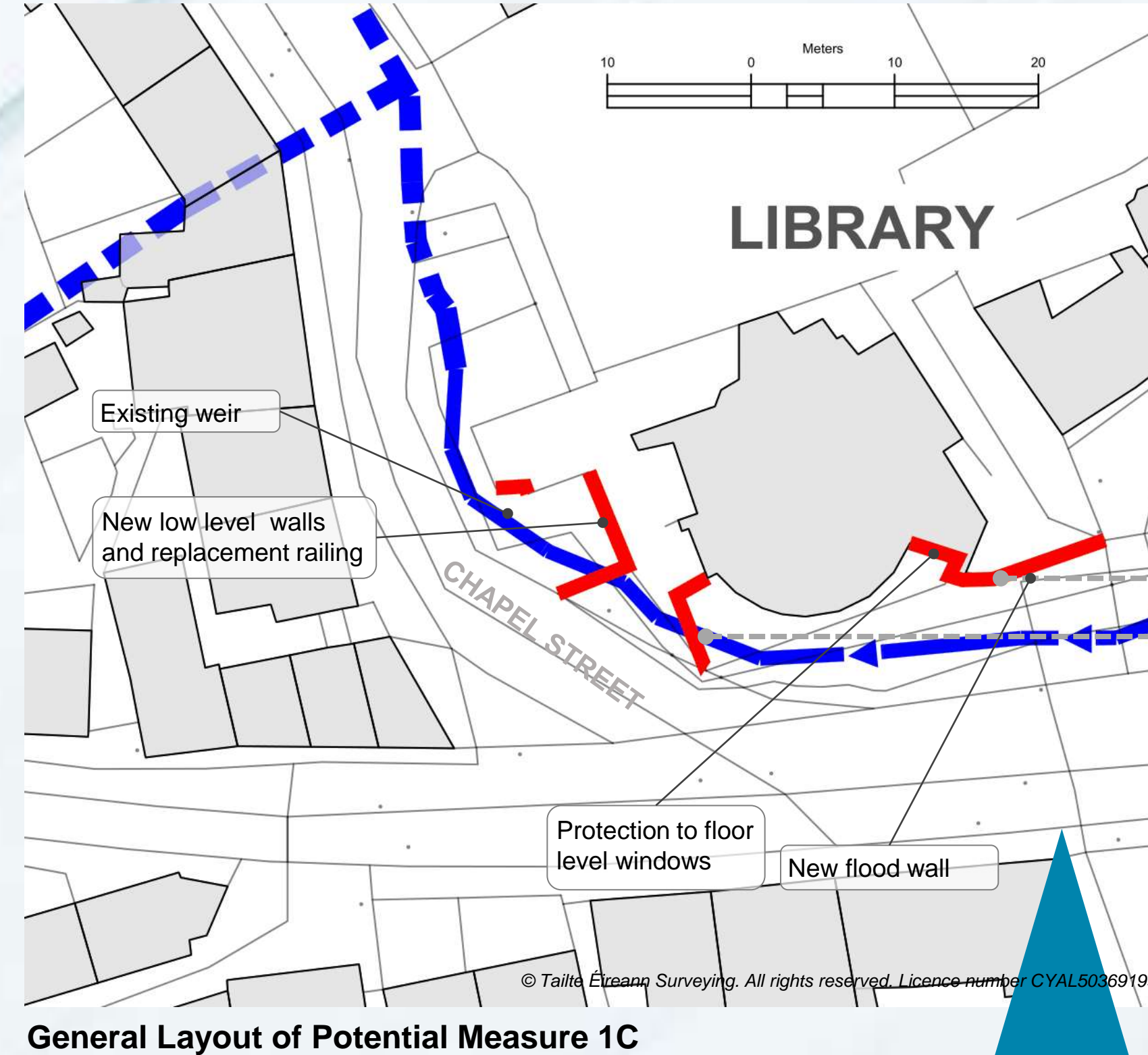
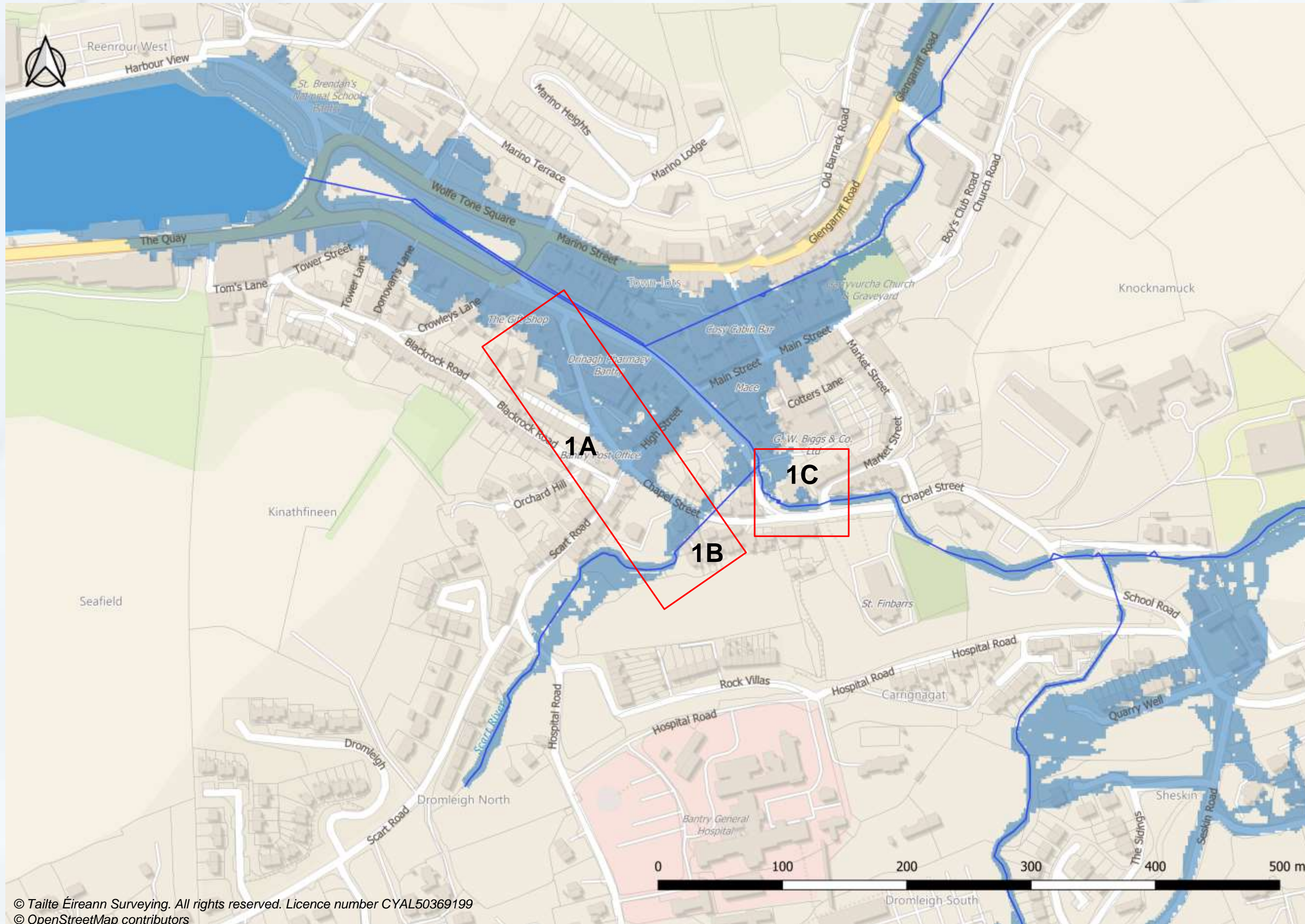


~ 6 properties at risk in Mealagh Catchment



6A	<ul style="list-style-type: none"> o New culvert (0.9m dia.) to divert existing under-capacity pipe. Route to east of property. o New culvert (1 x 1m) to replace existing 0.8 x 0.5m box culvert (length 30m) o Maintain existing culvert (1 x 1m) in field along roadside with low-level wall at upstream inlet (approx. 75m) o New flood wall (at downstream end) to prevent overland flows on to road <u>or</u> o Open channel for last 50m of existing culvert to capture overland flow.
6B	<ul style="list-style-type: none"> o New culvert (0.9m) to divert existing under-capacity pipe. Route to east of property. o New culvert (1 x 1m) to replace existing 0.8 x 0.5m box culvert (length 30m) o New open channel to replace existing culvert with low-level wall at upstream end (approx. 75m)

8 Scart



View of window at rear of Library



View of main entrance to Library

1C Potential Measure Proposal

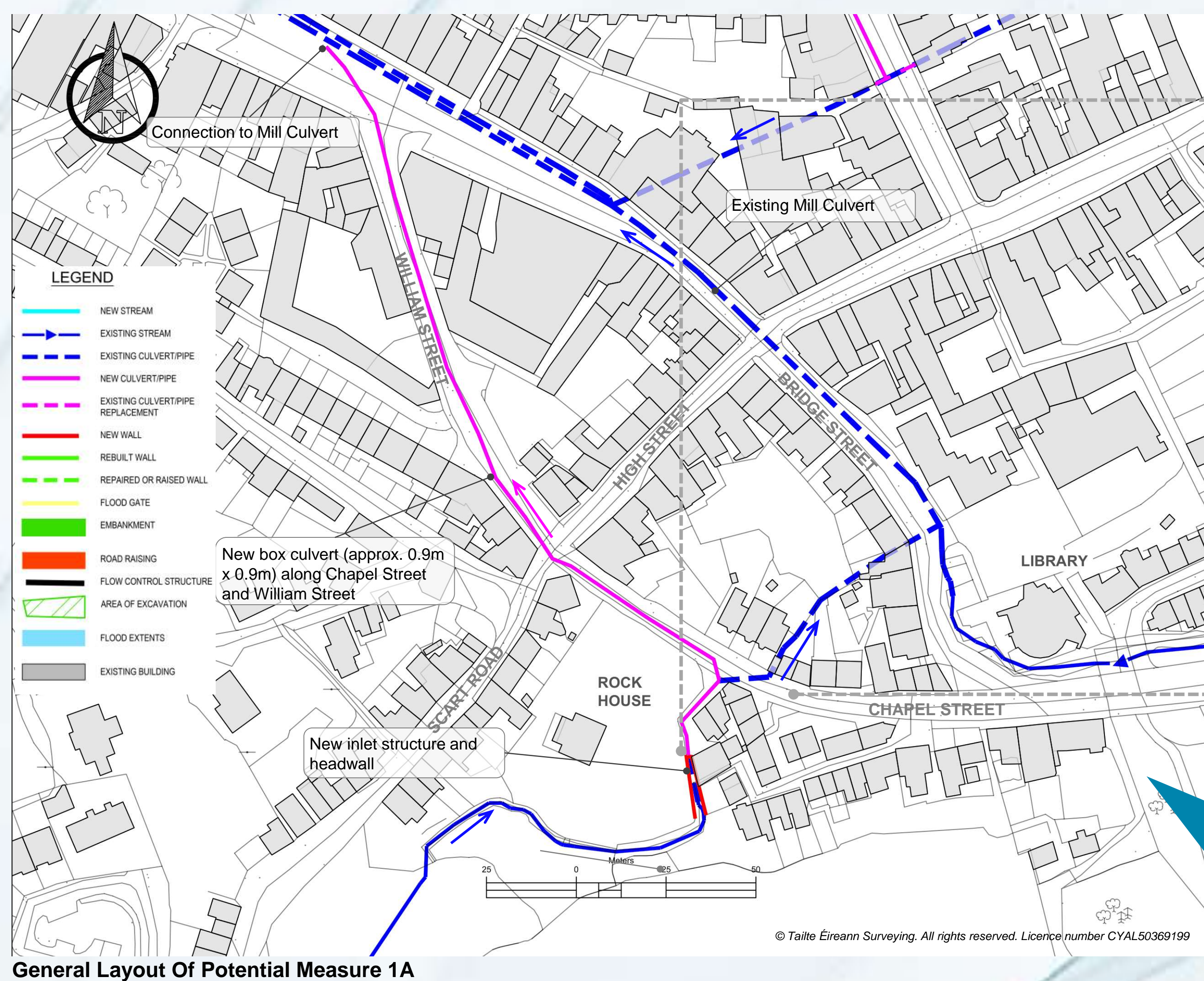
- New low-level walls near Library entrance
- New wall to rear of Library and wall/measure to protect window
- Lower weir by up to 0.2m

Considerations

- Bantry Library is a Protected Structure
- Bantry Library Architectural Rejuvenation Project

Options

Measure 1A and 1B are alternative options. Both involve rebuilding the inlet of the existing culvert. Measure 1A involves diverting flows in a new culvert. Measure 1B involves retaining the existing culvert and repairing it. Measure 1C involves protection at Bantry Library. No viable alternative measure has been identified at this location.



Inlet to Scart culvert



View of Chapel Street – looking west

1A Potential Measure Proposal

- New inlet structure and headwall at lane off Chapel Street
- Culvert diversion (approx. 0.9m x 0.9m) Chapel Street and William Street

Considerations

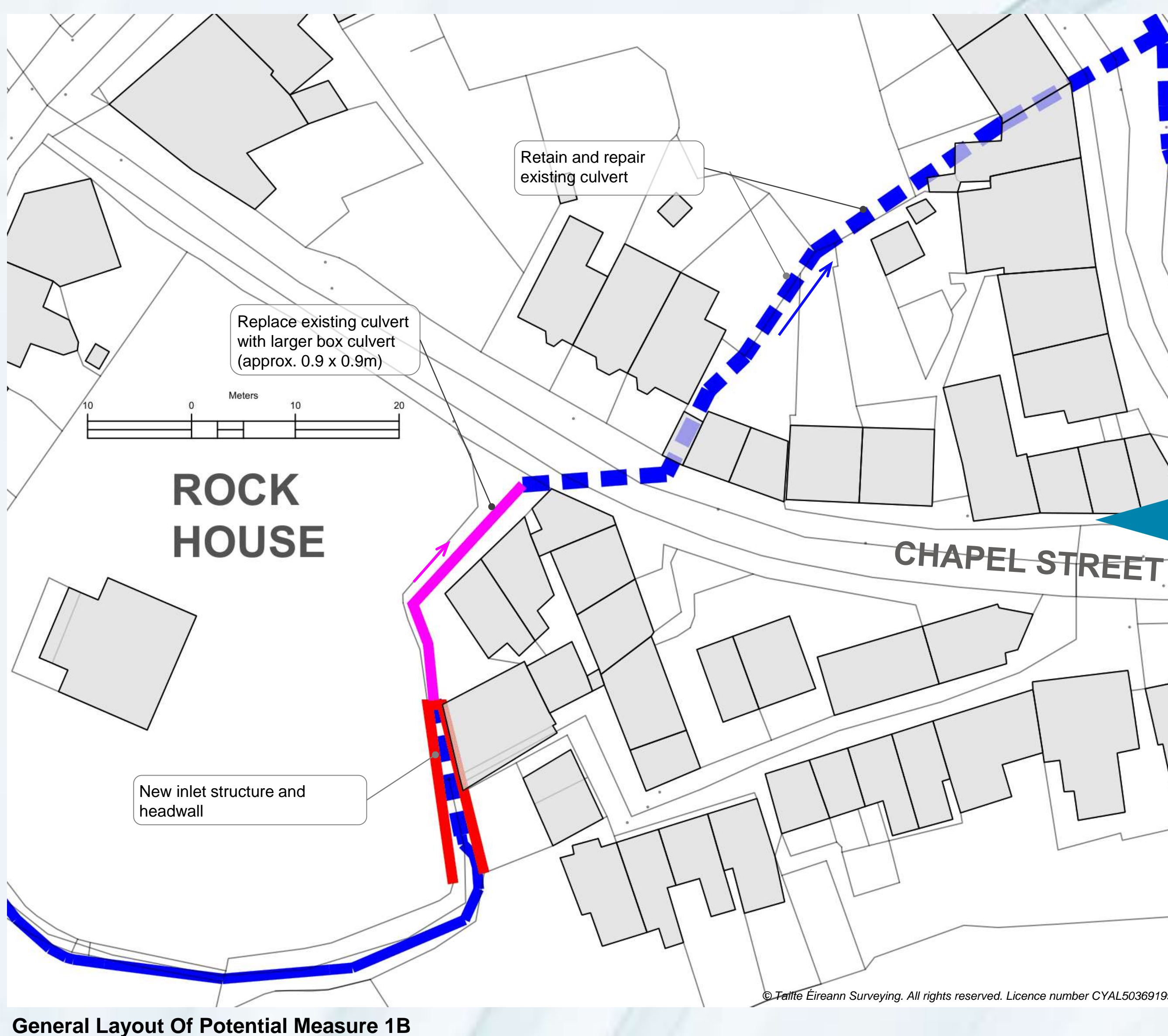
- Trees – On boundary of garden of Rock House.
- Property – Adjoining garage/shed on lane way.
- Utilities – Diversions on Chapel Street, William Street and Wolf Tone Square.
- Construction – One-way traffic management routes during construction.
- Construction – Rock at shallow depth between Chapel Street and Wolf Tone Square.

1B Potential Measure Proposal

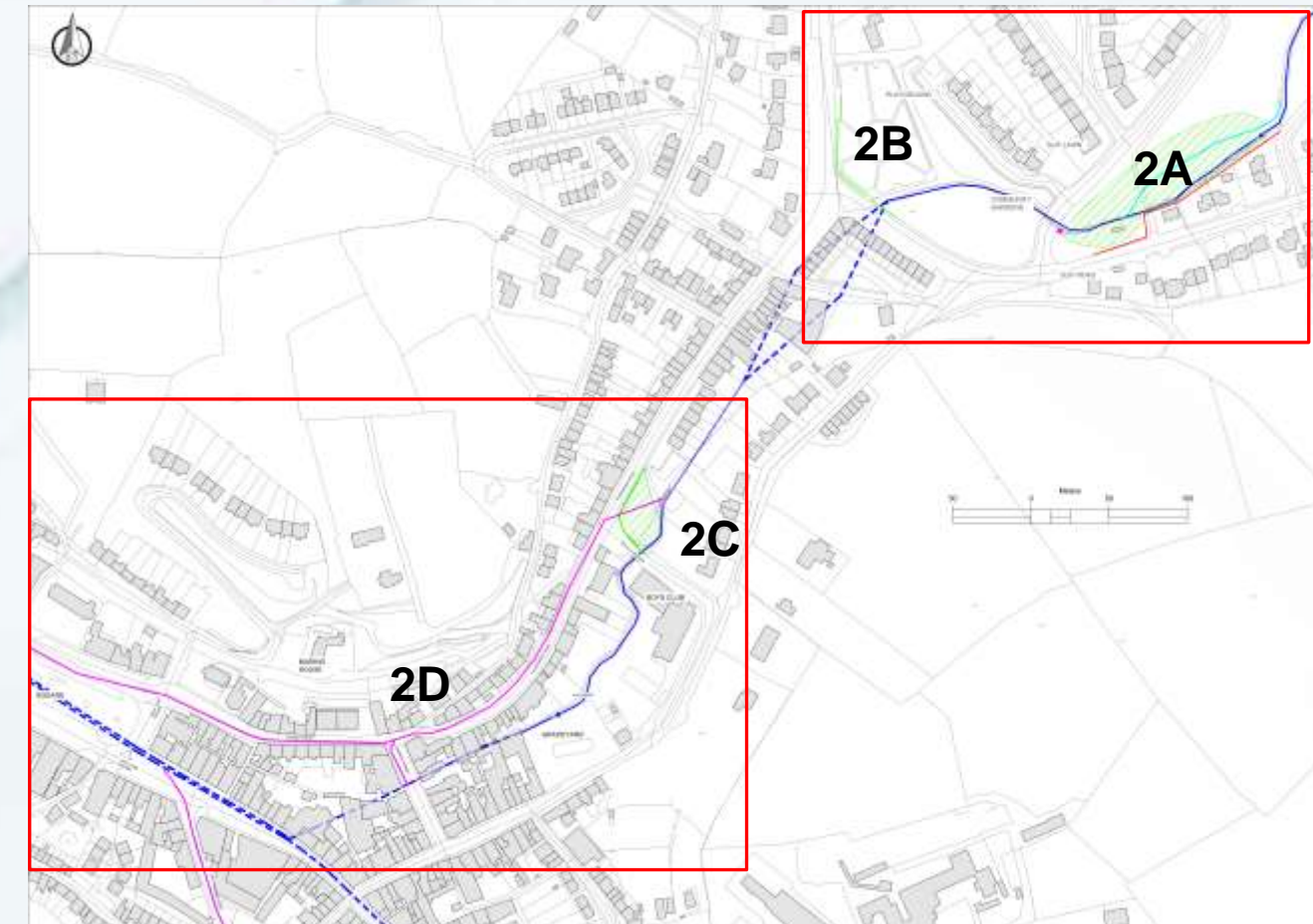
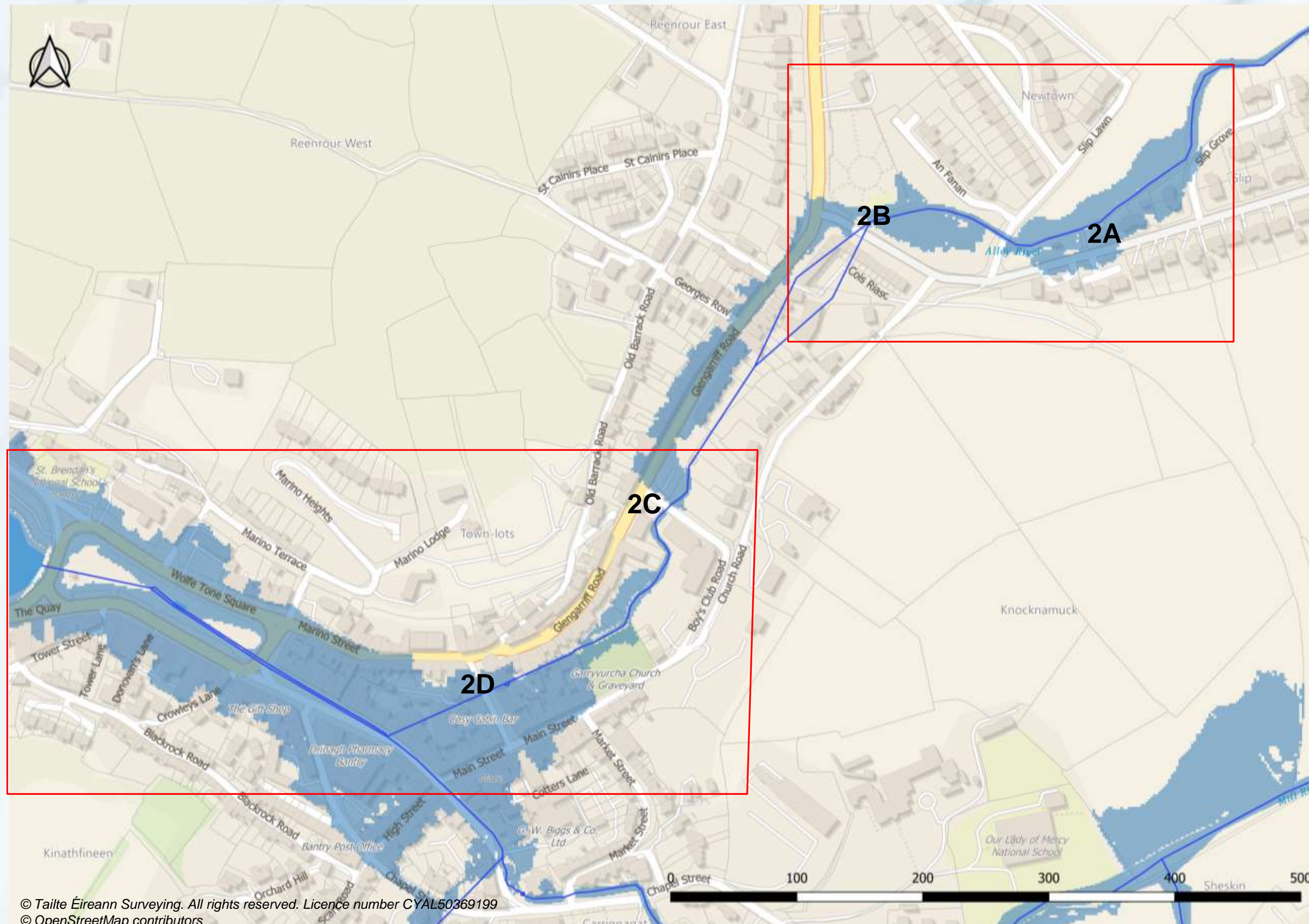
- New inlet structure and headwall at lane off Chapel Street.
- Retain and rehabilitation of existing culvert between Chapel Street and Bridge Street.

Considerations

- Viability – Subject to ongoing assessment of integrity of existing culvert.
- Trees – On boundary of garden of Rock House.
- Property – adjoining garage/shed on lane way.
- Utilities – Diversions on Chapel Street.
- Construction – One-way routes required during construction stage.
- Construction – Rock at shallow depth at Chapel Street.



9 Alley River



Options

Measure 2A, 2B, 2C, 2D combine to collectively manage flood risk in this area. No viable alternative measures have been identified. However, the interaction between the measures means that there are possible variations.

For example, providing deeper storage at 2A and 2B, the culvert size at 2D can be reduced. This could reduce the impact of construction on Glengarriff Road and Barrack Street. On the other hand, a larger culvert at 2D to convey flows could reduce the required storage depths at 2A and 2B.

2A Potential Measure

Proposal

- Flow retention at the greenfield off Slip Lawn, formed by a wall up to 2.0m height, a flow constraint in the inlet of the existing culvert under Slip Lawn and a stream diversion.

Considerations

- Biodiversity – Excavation of greenfield and vegetation removal.
- Biodiversity – Opportunity to improve natural habitat.
- Construction – Control of sediment and watercourse impact
- Property – Land acquisition.

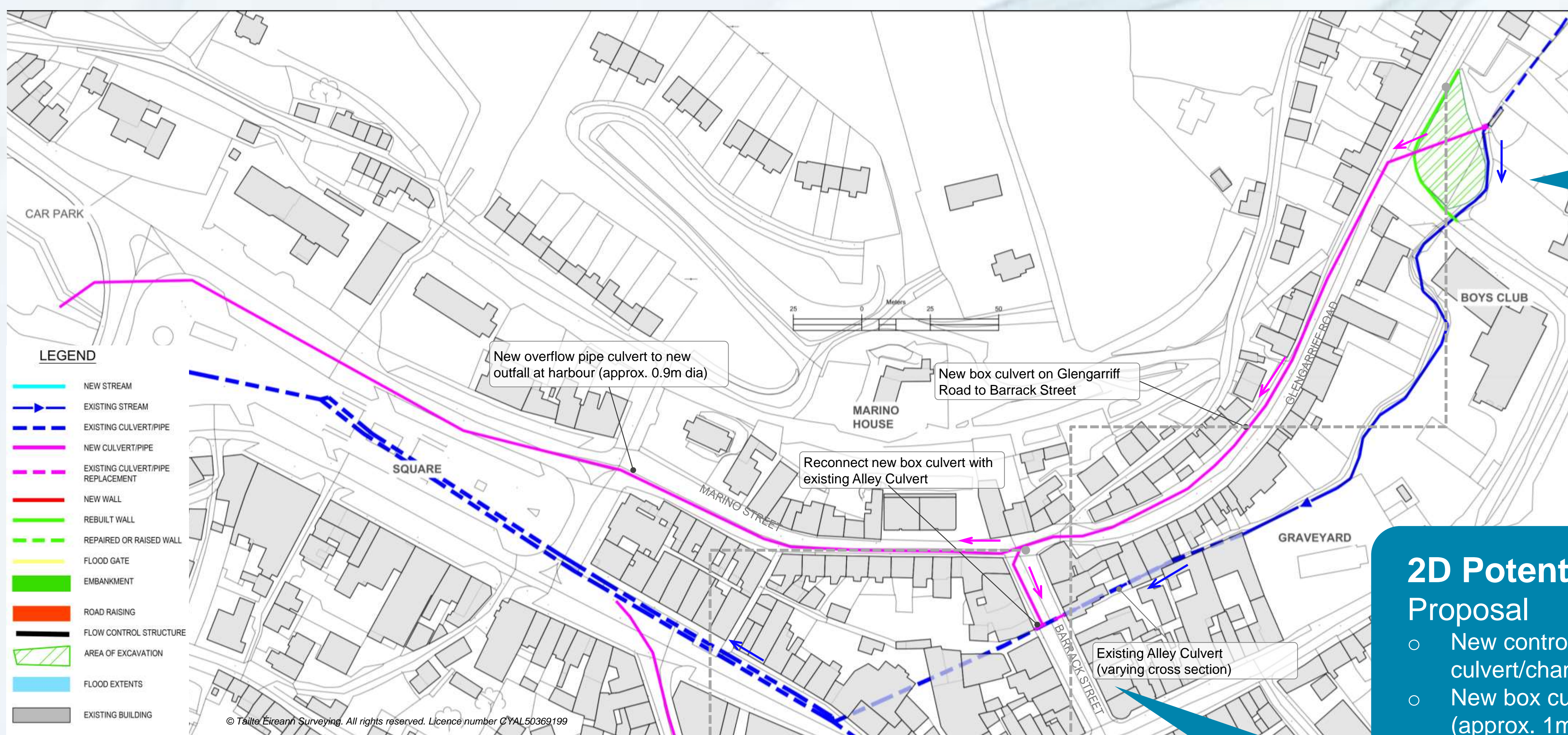
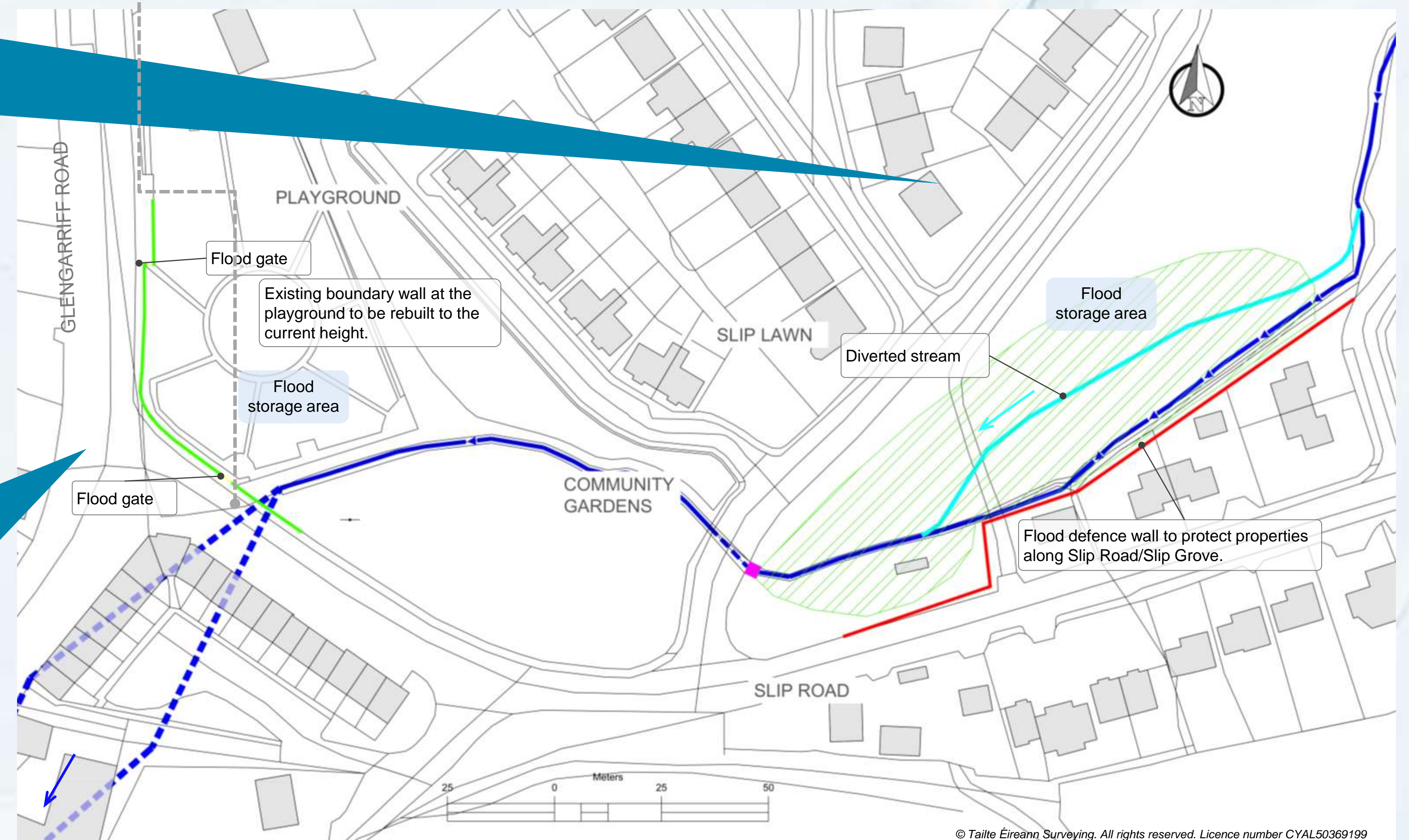
2B Potential Measure

Proposal

- Storage of flows at the playground and Community Gardens during significant storm events consisting of new wall sections and flood gate.

Considerations

- Property – Additional flooding of playground and Community Gardens, limited to peak flood periods.



2C Potential Measure

Proposal

- Lowering ground at existing parking area to provide flood storage.

Considerations

- Biodiversity – Opportunity to provide town park.
- Property – Land acquisition and loss of parking.

2D Potential Measure

Proposal

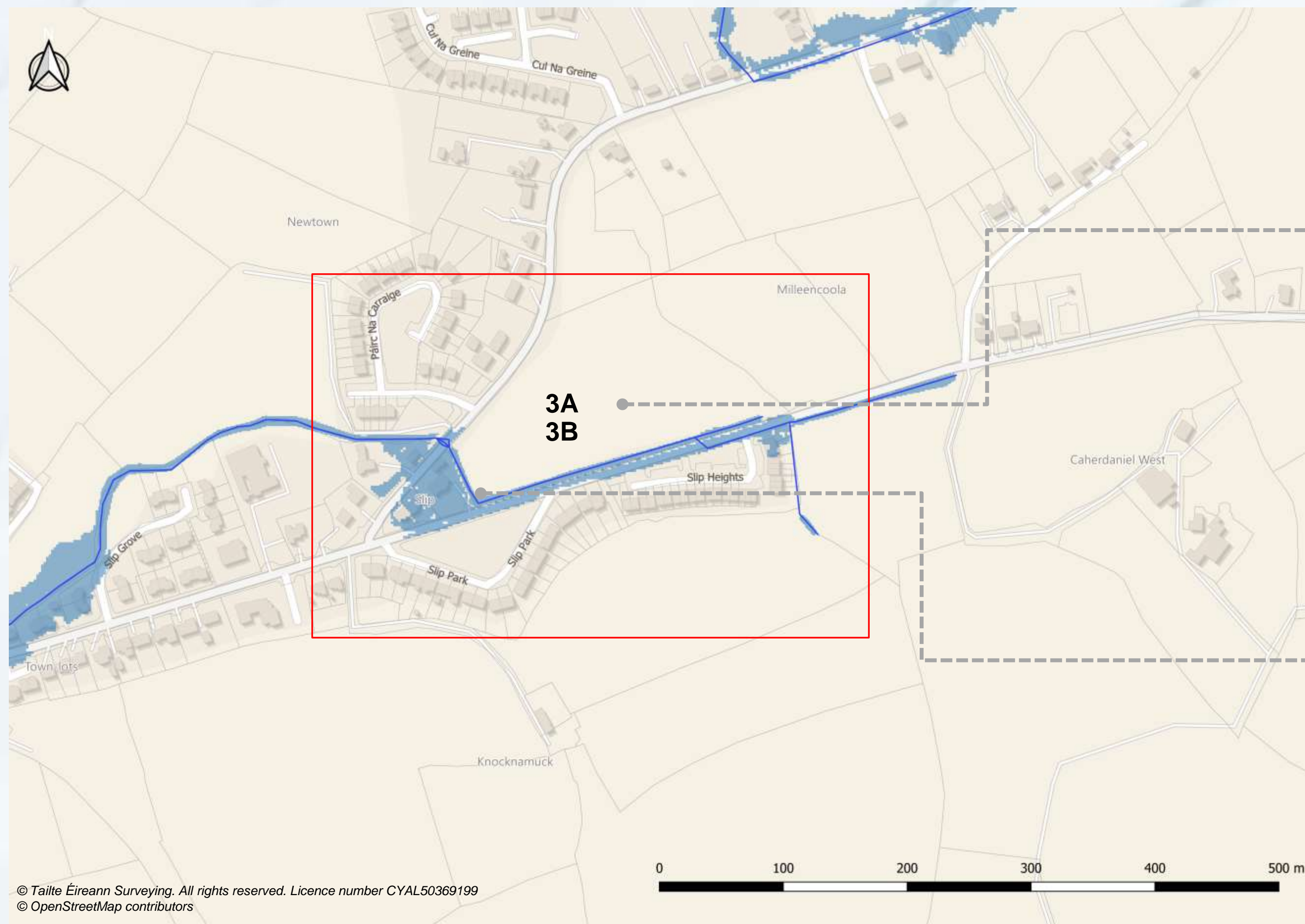
- New control structure to limit flows through existing culvert/channel and divert high flows to new culvert.
- New box culvert on Glengarriff Road and Barrack Street (approx. 1m x 1m to 2m x 1m).
- Overflow culvert at Barrack Street to harbour (0.9m dia.) via Marino Street.

Considerations

- Construction – Disruption to residents and business.
- Construction – One-way traffic Management routes during construction.
- Utilities – Glengarriff Road, Marino Street, Wolf Tone Square and Barrack Street.



10 Slip Heights



Predicted Flood Extents for 1% AEP



View of the greenfield off Slip Heights



Vegetation along the stream

Options

Measure 3A and 3B are alternative options. Both measures involve allowing greater flow through a new culvert under Slip Road. Measure 3A involves diverting the existing stream through the field and retaining flood flows in the field within an embankment. This will require the acquisition of more land but provides an opportunity to improve biodiversity. Measure 3B involves retaining the existing roadside culvert and the provision of a flood defence wall. This options requires less land acquisition.

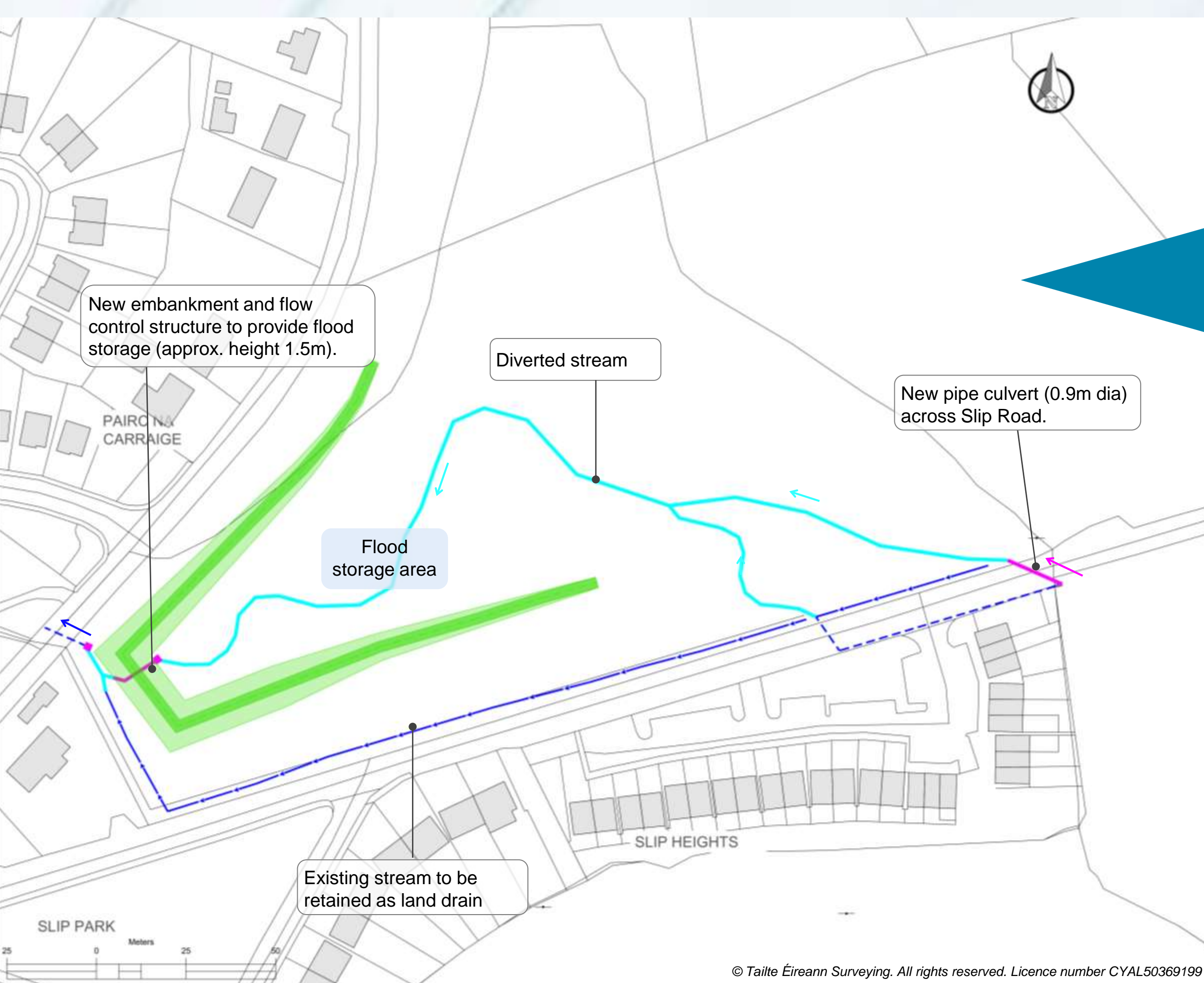
3A Potential Measure

Proposal

- New pipe culvert (0.9m dia) crossing Slip Road.
- Diversion of the existing stream in new open channel across field between Slip Heights and Pairc na Carraige.
- Installation of a new embankment in field (up to 1.5m height) with new flow control structure to provide flood storage.
- Provision of improved natural habitat.

Considerations

- Land acquisition.
- Biodiversity – Opportunity to improve biodiversity (Biodiversity Net Gain).
- Biodiversity – Impact on existing vegetation and mammals.
- Heritage – Fulacht Fiadh near Slip Heights / Milleencoola.



General Layout Of Potential Measure 3A

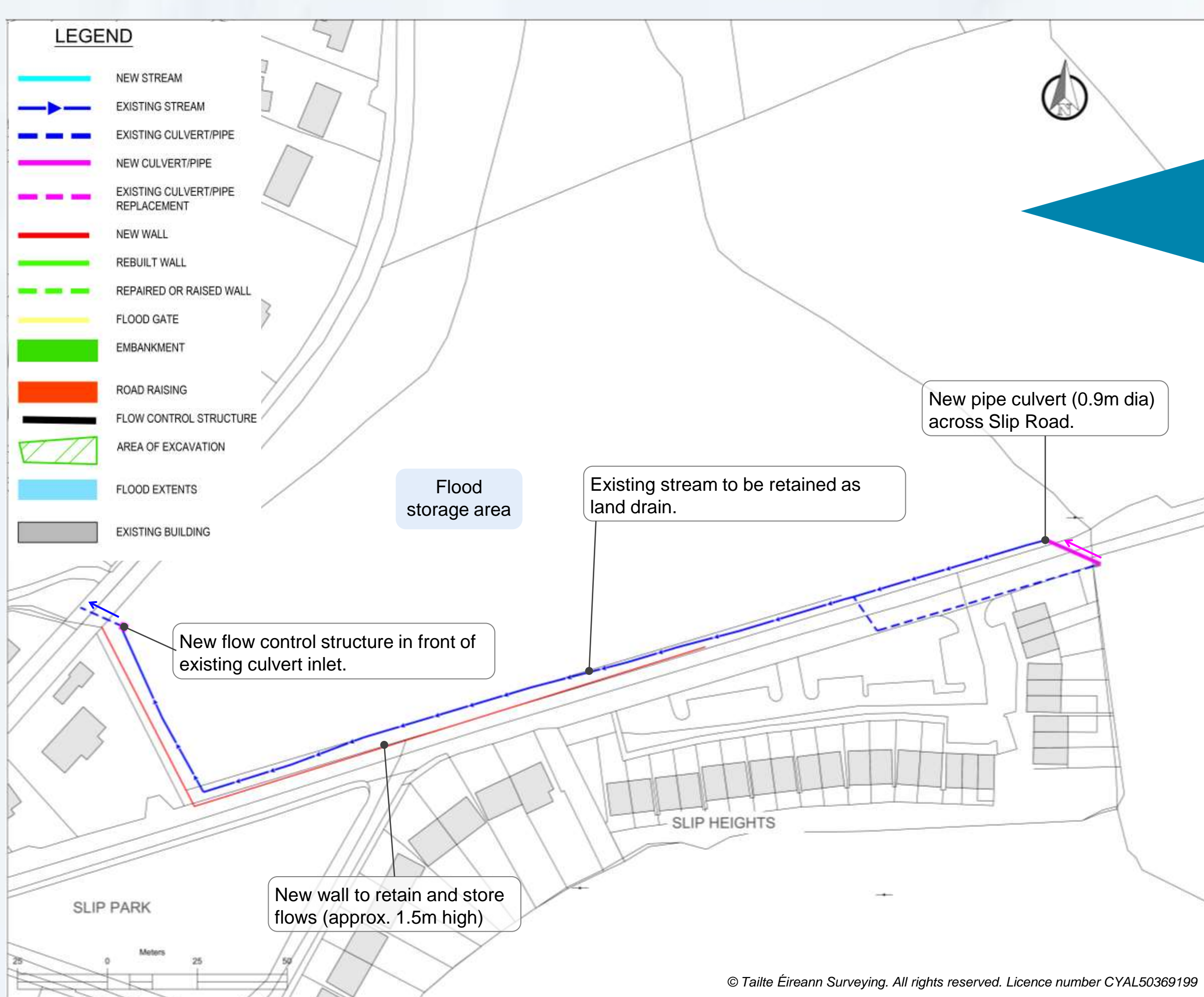
3B Potential Measure

Proposal

- New pipe culvert (0.9m dia) crossing Slip Road.
- Retain existing stream in open channel adjacent to boundary of field between Slip and Pairc na Carraige.
- New wall of up to 1.5m height parallel to the stream to defend the neighbouring properties and road.
- Flow control structure at inlet of the existing culvert (opposite Pairc na Carraige) to detain flood flows in field.

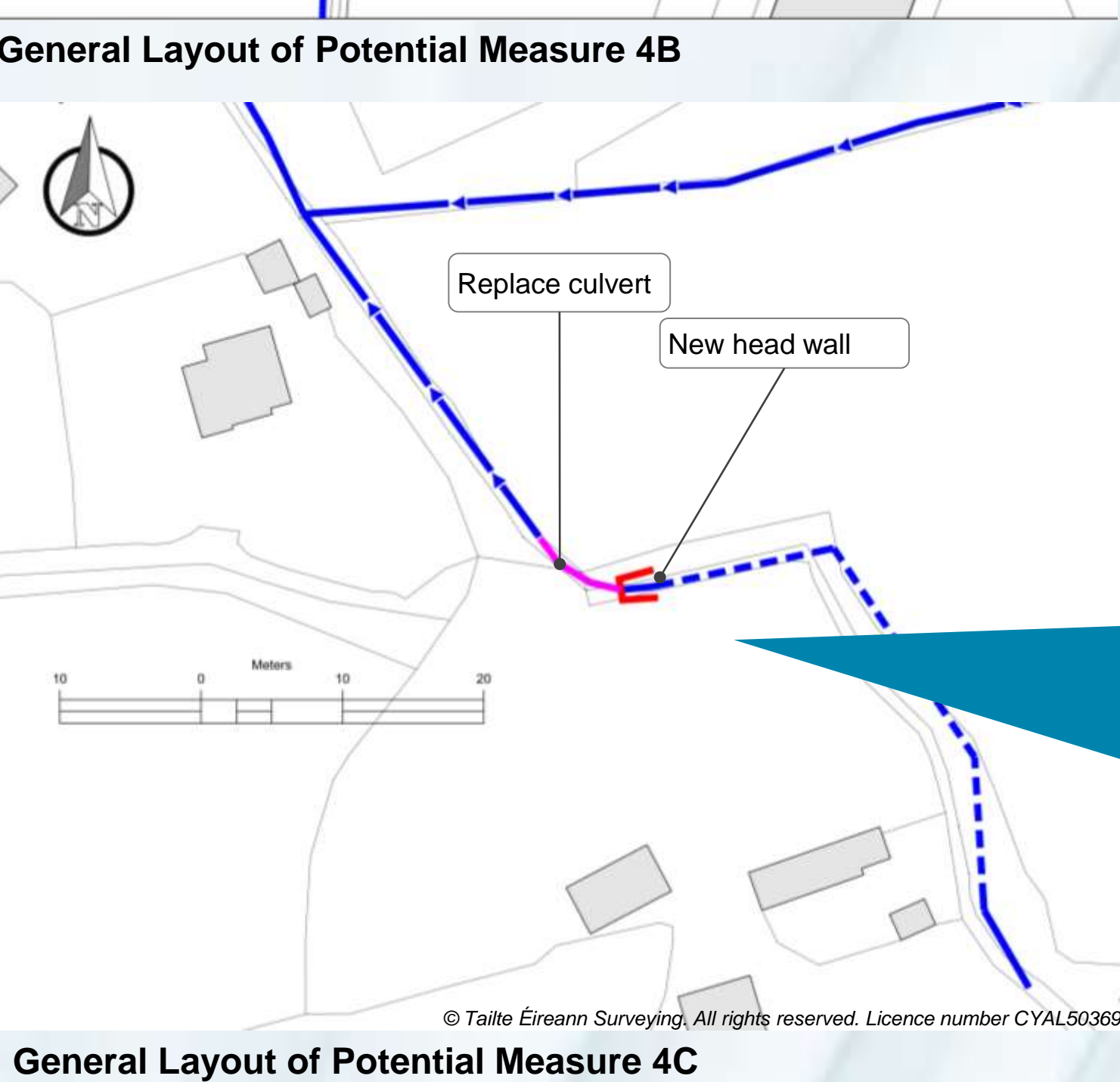
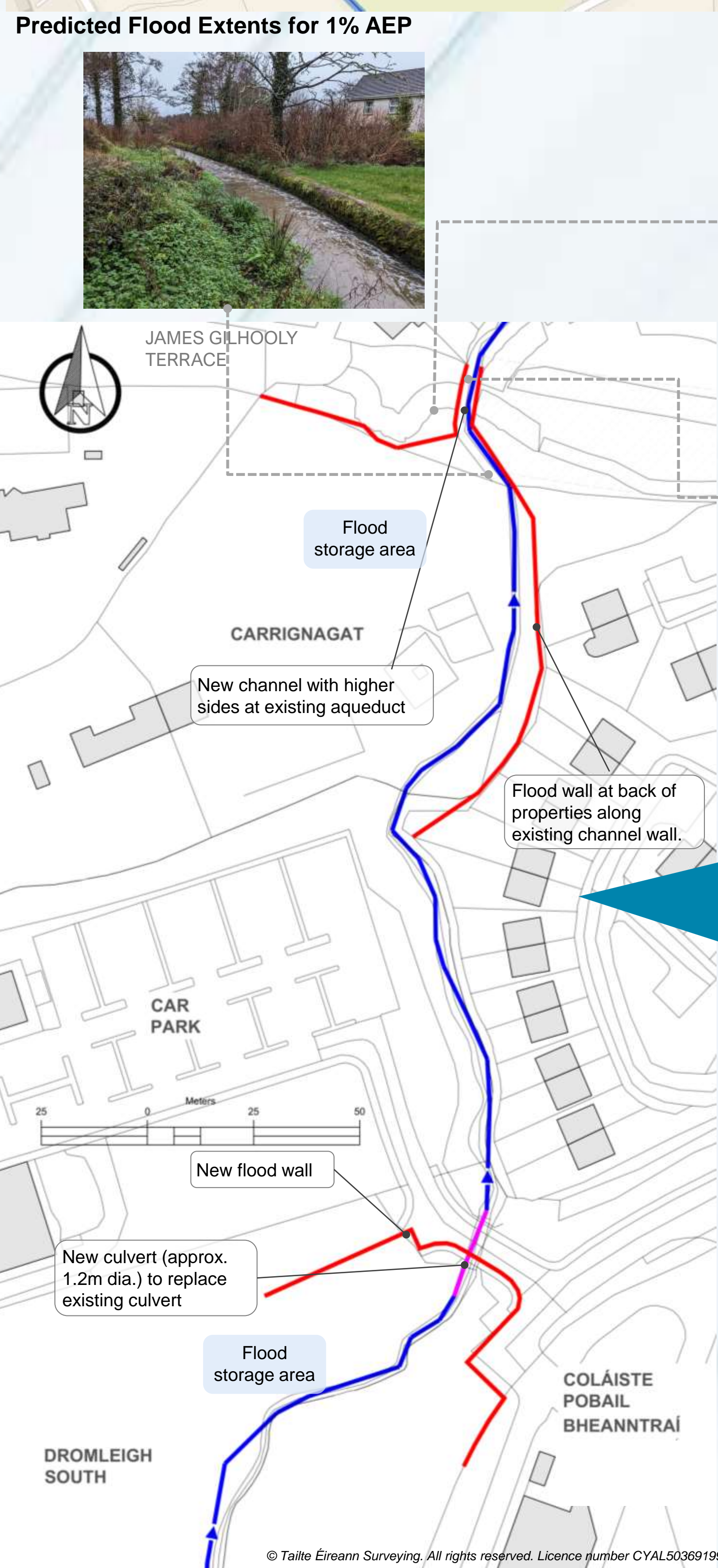
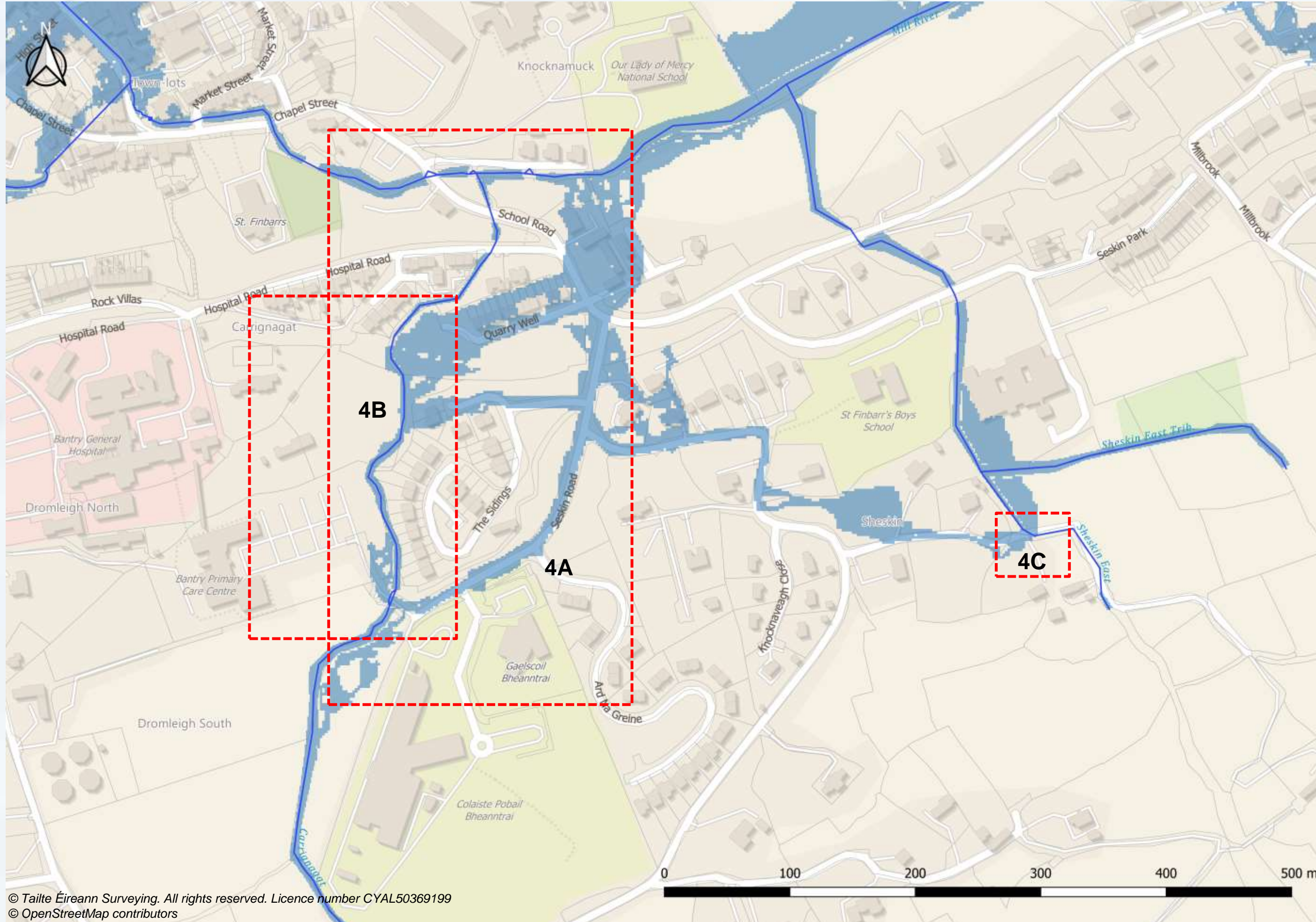
Considerations

- Land acquisition (less than 3A).
- Biodiversity – No notable biodiversity improvement.
- Biodiversity – Impact vegetation and mammals less than 3A.
- Heritage – Fulacht Fiadh near Slip Heights / Milleencoola.



General Layout Of Potential Measure 3B

11 Sheskin Road



Aqueduct over old railway line at Sheskin

4B Potential Measure

Proposal

- Raise wall (or replace) on right bank (approx. +0.7m) along existing stream approaching aqueduct.
- New wall on left bank (approx. 2m) near aqueduct.
- Replace channel structure at aqueduct with higher sides (approx. +0.8m)
- New culvert (1.2m dia) under access road to Primary Care Centre to increase conveyance.
- New head wall (approx. 1.0m high) at upstream side of road crossing (Primary Care Centre & School entrance) to prevent flows overtopping road.

Considerations

- Construction – Access and steep terrain, located behind properties and Primary Care Centre car park
- Biodiversity – Existing dense vegetation.
- Heritage – Aqueduct and channel is unique example of railway heritage
- Operation – Access for maintenance

4C Potential Measure

Proposal

- New head wall and new culvert (approx. 0.9m dia)

Considerations

- Property – Wayleave required for maintenance.

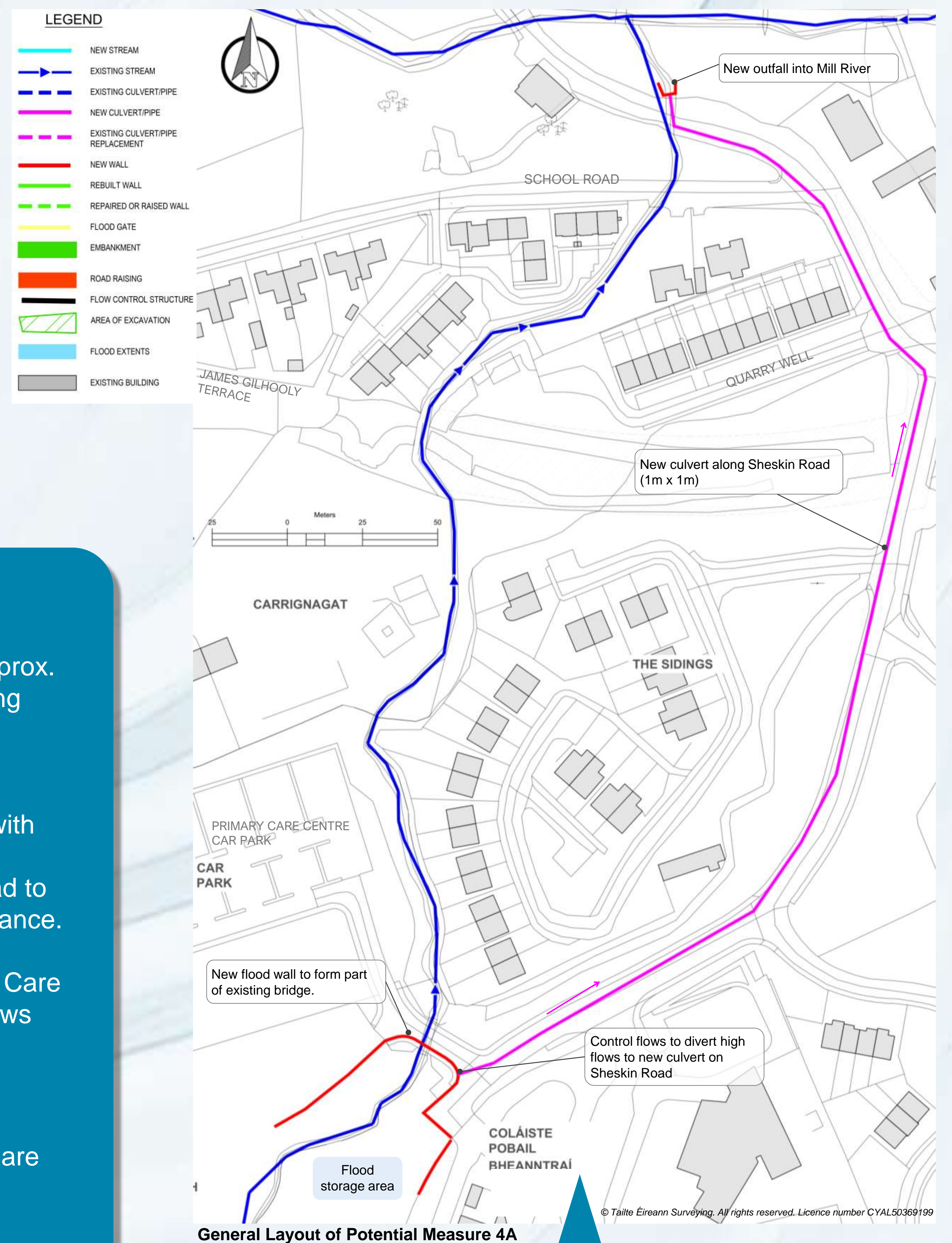
Options

Measure 4A and 4B are alternative options.

Measure 4A involves containing flow upstream of culvert on Sheskin Road (Primary Care Centre entrance) and diverting flows in a new culvert along Sheskin Road to a point further downstream on the Carrignagat Stream.

Measure 4B involves containing flow upstream Sheskin Road (Primary Care Centre entrance) and replacing the existing culvert at the same location. It also involves increasing the height of walls on the right bank of the existing channel approaching the existing aqueduct and at the aqueduct to prevent overtopping caused by flood flows.

Measure 4C involves the construction of a headwall and minor channel works at the south of St. Finbar's School. No viable alternative to Measure 4C has been identified.



4A Potential Measure

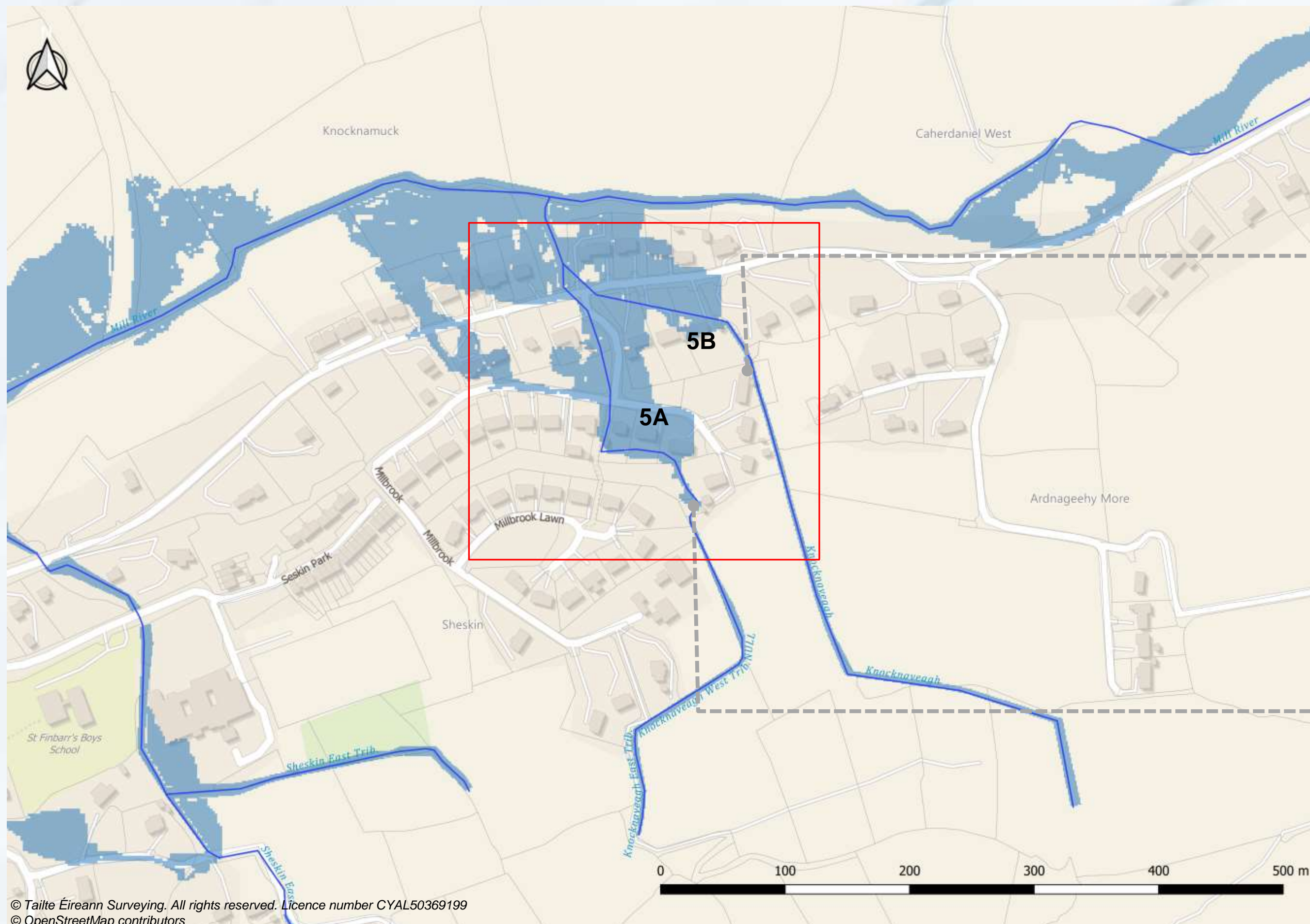
Proposal

- New head wall (approx. 1.3m high) at upstream side of road crossing (Primary Care Centre & School entrance) to prevent flows overtopping road.
- New culvert (approx. 1m x 1m) on Sheskin Road to divert flows further downstream in Carrignagat.

Considerations

- Construction – Managing access to Primary Care Centre and Coláiste Pobail Bheanntaí.
- Construction and Operation – Steep gradient on Sheskin Road.

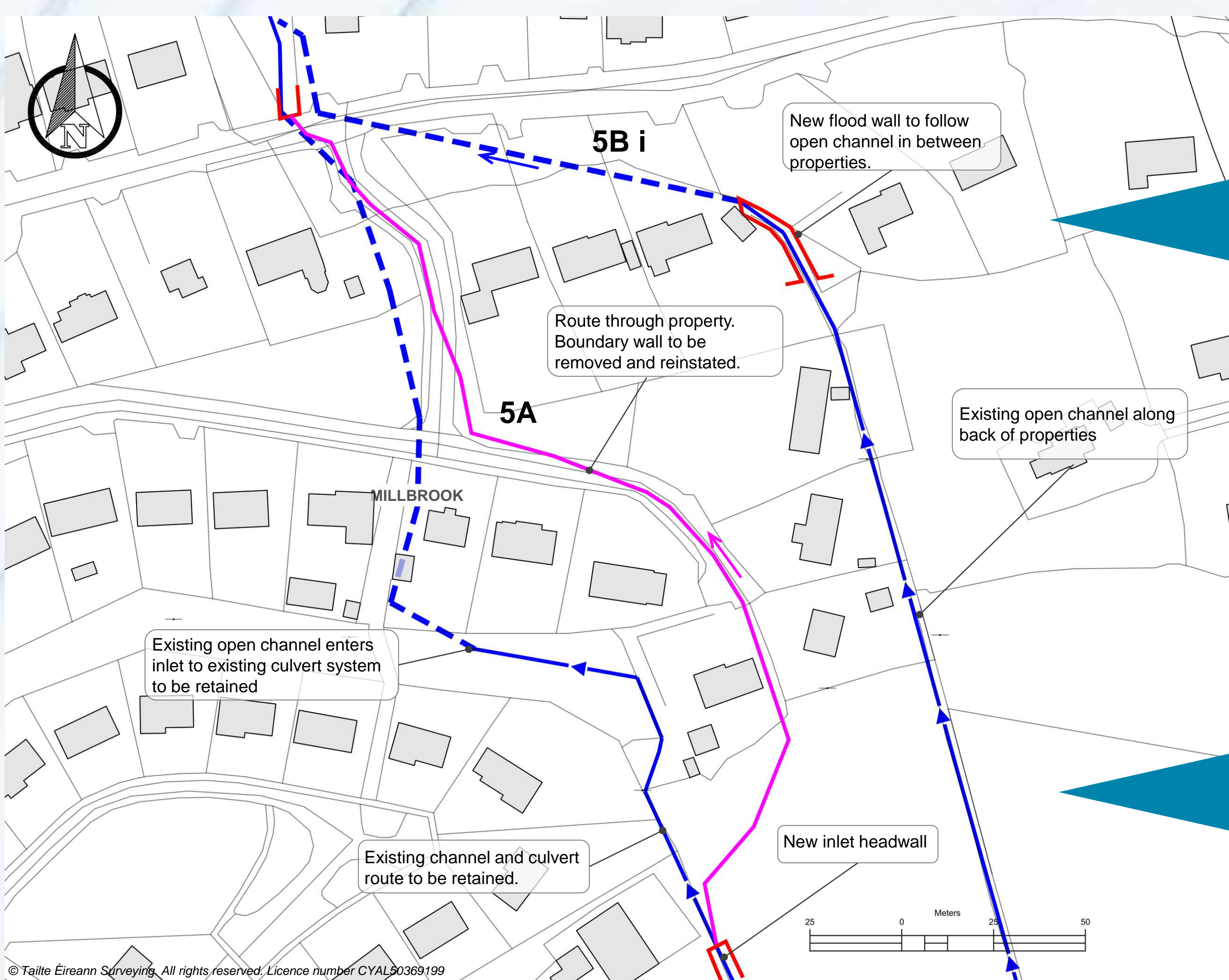
12 Millbrook



View of cascading fall between gardens – Knor Stream



View between gardens downstream of new inlet



5A Potential Measure

Proposal

- New culvert (0.9m dia.) to intercept channel upstream of existing inlet and divert on new route through property/ housing estate to existing outfall (approx. 300m in length).

Considerations

- Construction – Fencing to be temporarily removed and reinstated on completion of the works.
- Construction – Confined working area and dense vegetation at outfall.
- Construction – Traffic management along new culvert route.
- Property – Wayleave required along culvert route.

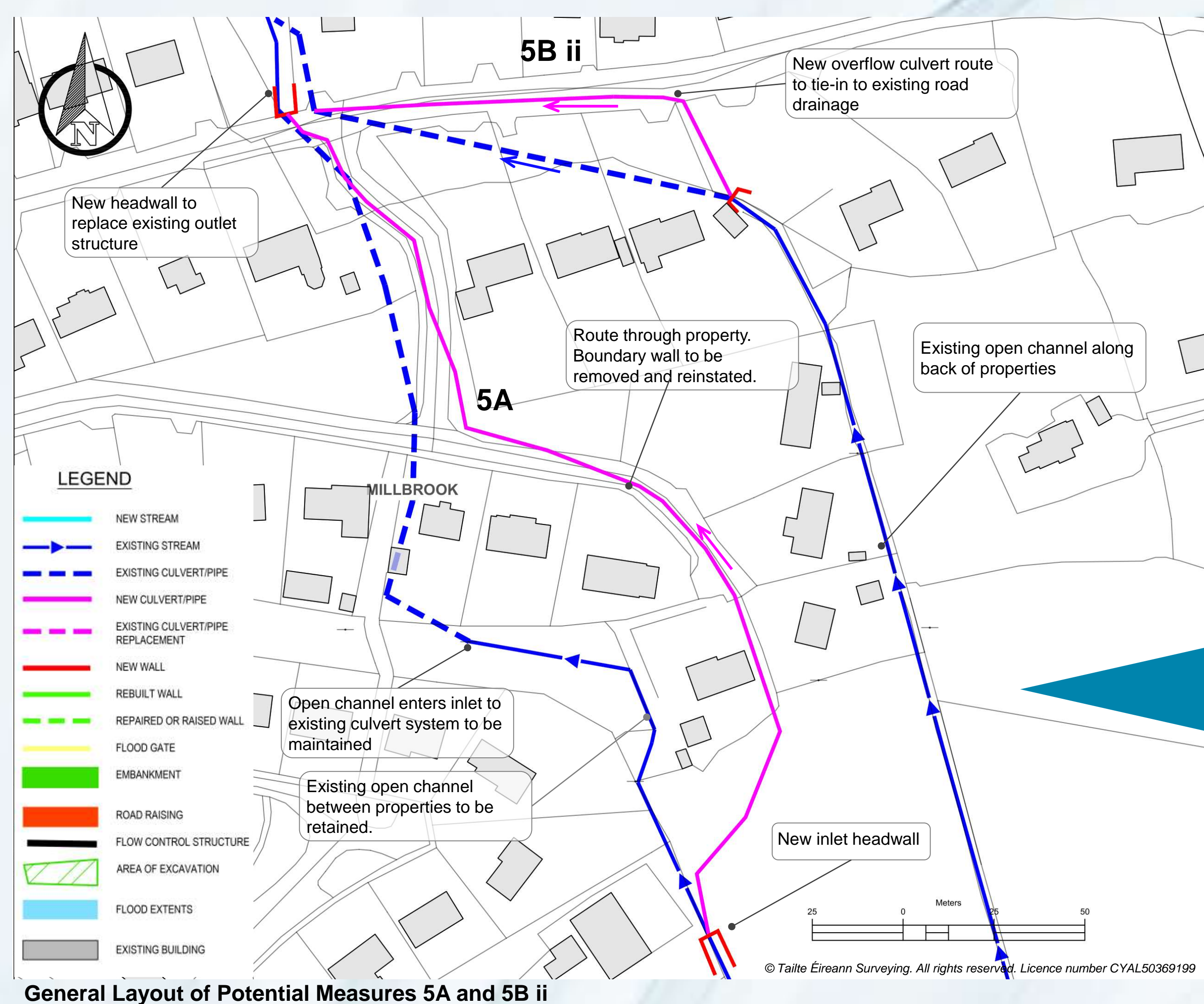
5B i Potential Measure

Proposal

- New inlet structure (approx. 0.75m high) to contain surcharge.
- Existing culvert through gardens to be retained.

Considerations

- Construction – Properties adjacent to proposed works.



Options

Measure 5A and 5B are proposed in this area to manage flood risk for two separate watercourses. Both are required.

Measure 5B has two alternative options. 5B i involves providing an inlet headwall to contain surcharging and retaining the existing culvert. 5B ii involves providing an additional overflow culvert which could result in a smaller inlet headwall.

5B ii Potential Measure

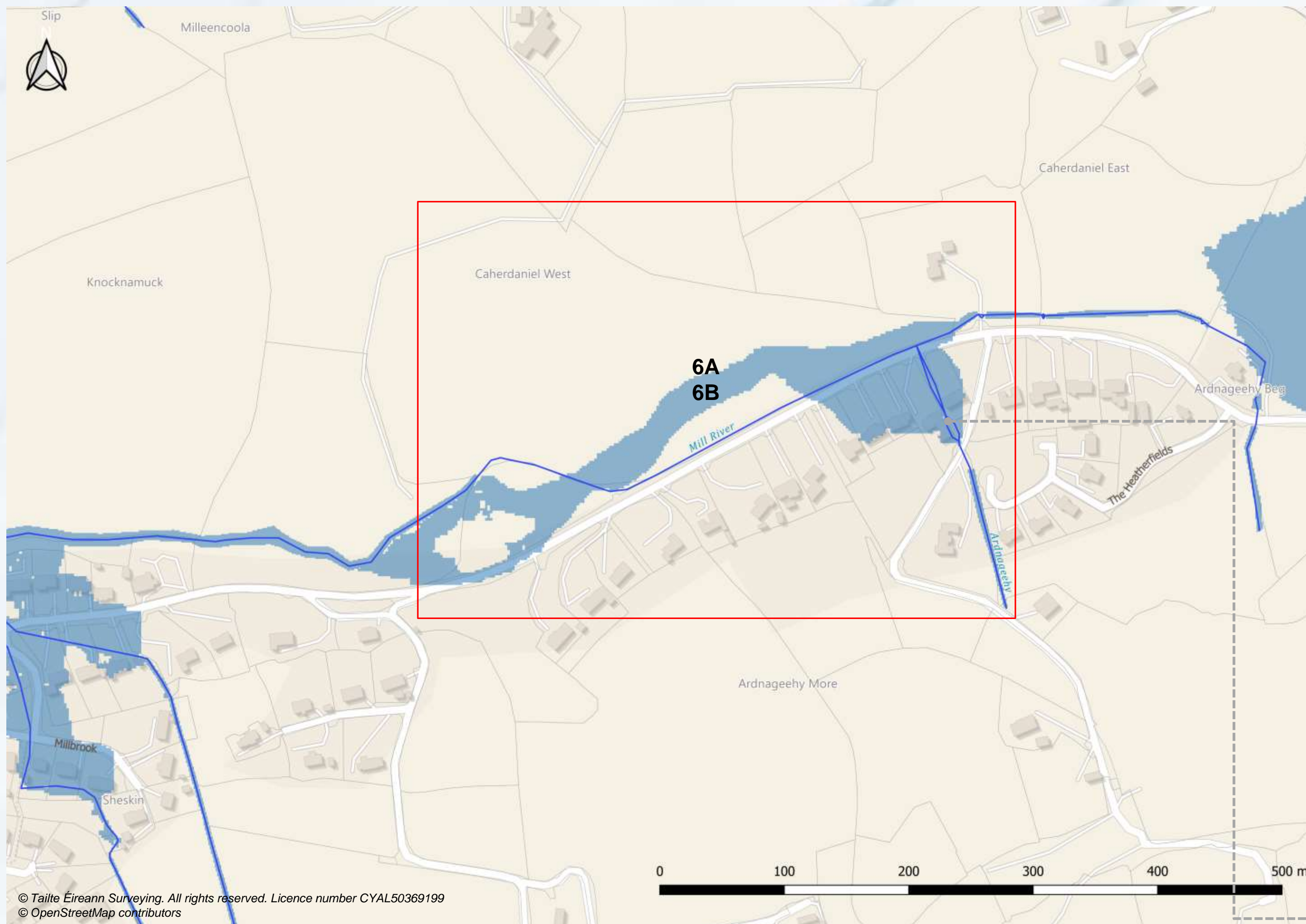
Proposal

- New inlet structure (approx. 0.3m high) fitted with flow control.
- New overflow culvert (approx. 0.9m x 0.9m) to divert flows from existing culvert to existing outfall.

Considerations

- Construction – Properties adjacent to proposed works.
- Construction – Traffic management along new culvert route.

13 Ardnageehy More



Predicted flood extents for 1% AEP

Options

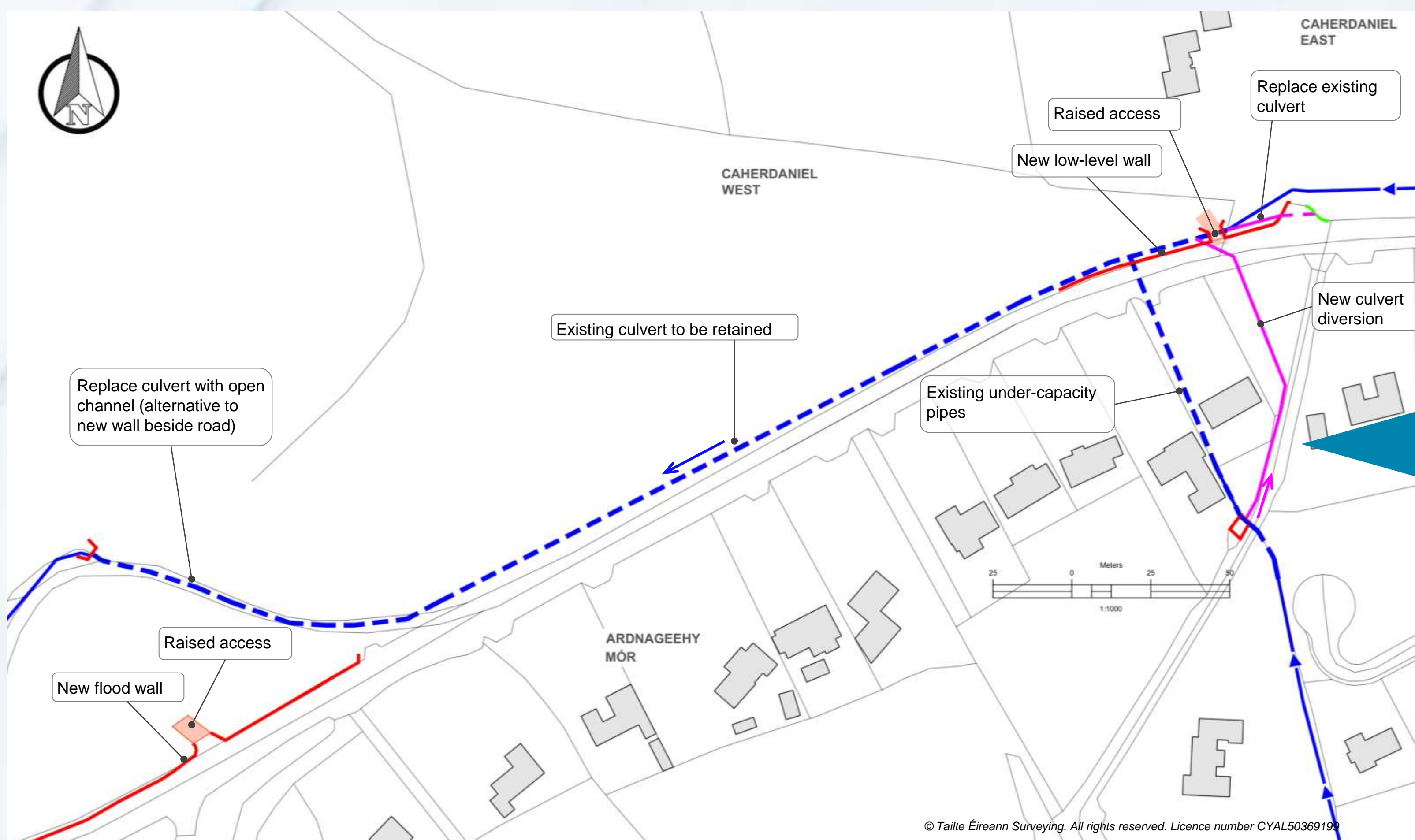
Measure 6A and 6B are alternative options. Both measures involve diverting existing pipe(s) that currently pass through a residential property. The diversion route is to the east of the property. Both measures also involve replacing a short section of culvert on a separate tributary on the north side of main road. Measure 6A involves retaining the existing culvert that runs to the west parallel to the main road, whereas Measure 6B involves providing an open channel to replace this existing culvert. Within Measure 6A, if the culvert is retained it may be necessary to provide a wall to prevent overland flows flowing on to the main road. An alternative option is to open the last 50m of culvert to capture this flow. This is subject to further detailed assessment.



View of drainage pipe to be decommissioned



View of inlet structure to be replaced



General Layout of Potential Measure 6A

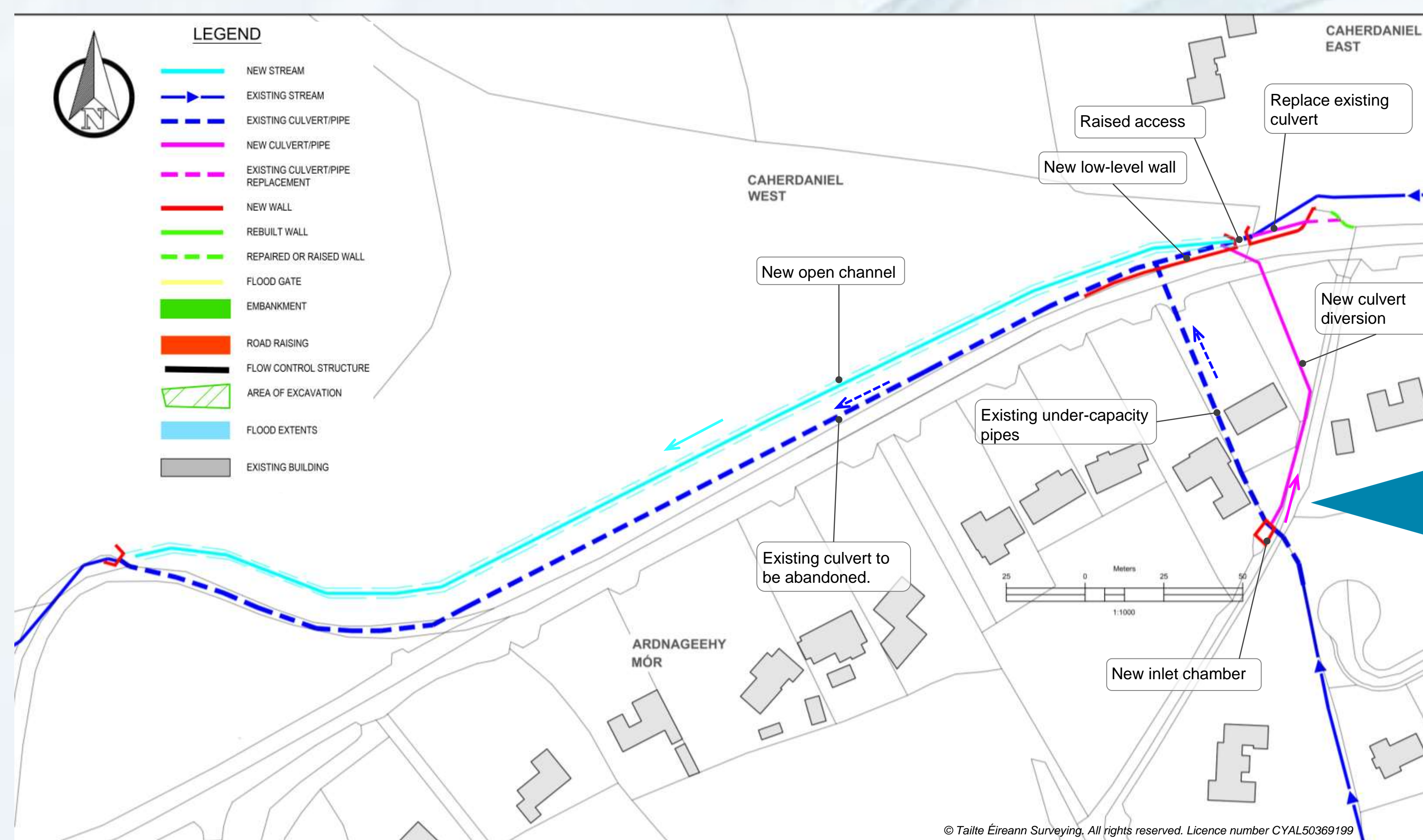
6A Potential Measures

Proposal

- New culvert (0.9m x 0.9m) to divert under-capacity pipe through residential property. Routed east of property.
- New culvert (1m x 1m) to replace existing 0.8m x 0.5m box culvert (length 30m).
- Maintain existing culvert (1m x 1m) located in field along roadside
- New low-level wall and raised access at upstream end of culvert (approx. length 75m).
- New flood wall (at downstream end) to prevent overland flows onto road
 - Or; Open channel for last 50m of existing culvert to capture overland flow.

Considerations

- Property – Existing access to be upgraded.
- Property – Boundary walls to be removed and reinstated.
- Utilities – Along proposed works route to be relocated.



General Layout of Potential Measure 6B

6B Potential Measures

Proposal

- New culvert (0.9m x 0.9m) to divert under-capacity pipe through residential property. Routed east of property.
- New culvert (1m x 1m) to replace existing 0.8m x 0.5m box culvert (length 30m)
- New open channel to replace existing culvert
- New low-level wall and raised access at upstream end of channel (approx. length 75m).

Considerations

- Biodiversity – Vegetation along proposed channel route adjacent to Caherdaniel / Ardnageehy More Road.
- Property – Existing access to be upgraded.
- Property – Boundary walls and to be removed and reinstated.
- Utilities – Along proposed works route to be relocated.