

# Prestwick Strategic Drainage Project

## Stakeholder Group Meeting

15<sup>th</sup> November 2019



# Terms of Reference

## OBJECTIVES

Establish a forum to engage key stakeholders in the Strategic Drainage Project currently underway in Prestwick. This forum will be used to provide updates and invite stakeholder feedback.

Provide background information and outline what has been done so far to address sewer flooding in Prestwick.

## ATTENDEES

- Scottish Water – Communities, Flooding Team
- Elected Members – MP, MSP, Councillors, Council Provost
- Ayrshire Roads Alliance
- Prestwick North and South Community Councils
- P-RAAF
- Plus any other invitee as agreed

## INPUTS

- Strategic Project Work plan and programme

## OUTPUTS

- Action log circulated to attendees
- Circulated within 3 weeks of meeting

**FREQUENCY:** As Appropriate

**VENUE:** Prestwick Ambassador Bowling Club

**CHAIR:** Kieran Downey

## GROUND RULES

- Come prepared
- Each individual is responsible for delivering their own actions
- Mobile phones off/on silent
- Start and finish on time
- Respect everyone's opinion

## AGENDA

- Welcome and introductions
- Review of previous minutes and actions
- Overview of Brandon Gardens and St Nicholas Road Residents Meeting on 5<sup>th</sup> Sep 2019
- Overview of Recent Flooding
- Proposed Short Term Mitigations
- Proposed Medium Term Flood Reduction Measures
- Prestwick Strategic Study (longer term solution)
- Timelines
- Summary

# Review of Actions from Prestwick Strategic Study Stakeholder Group Meeting on 31<sup>st</sup> May 2019

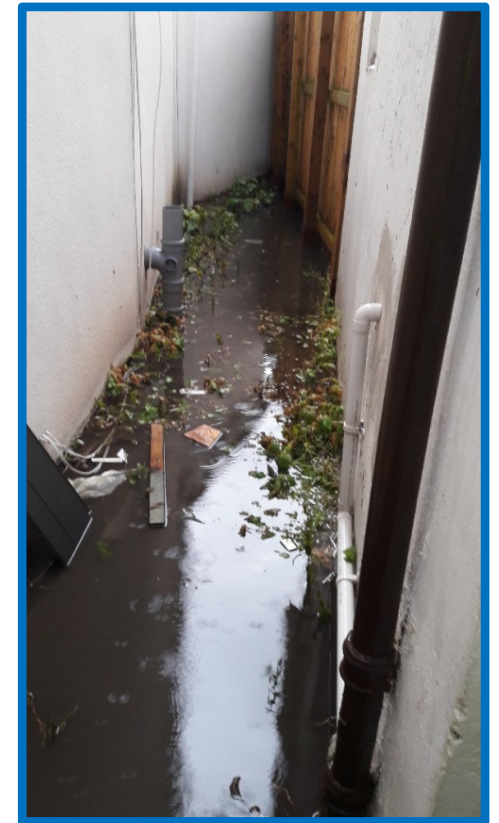
	Action	Owner	Update
1	Scottish Water to circulate information in relation to the fourteen flooding areas identified as part of the Strategic Drainage Project.	Scottish Water	Flooding Evaluation Form for the 14 Areas was sent out with meeting minutes on 17 <sup>th</sup> June 2019.
2	Stakeholders to collate feedback on the fourteen flooding areas and submit to Scottish Water for review	All	2No responses received.
3	Fiona Mullen to check the environmental register in relation to Main Street properties in Area 7.	Fiona Mullen	
4	Scottish Water to work with Ayrshire Roads Alliance, to investigate speed tables on streets adjacent to Ayr Road as an option to alleviate flooding.	Scottish Water / Ayrshire Roads Alliance	Speed Tables have been investigated and findings will be shared as part of this presentation.
5	The land behind Brandon Gardens to be considered as a potential storage option.	Scottish Water	Utilising land behind Brandon Gardens has been investigated and findings will be shared as part of this presentation

# Overview of Brandon Gardens and St Nicholas Road Residents Meeting on 5<sup>th</sup> Sep 2019

- Meeting held in Prestwick Ambassador Bowling Club.
- Residents from Brandon Gardens and St Nicholas Road invited.
- Around 50 People attended
- Overview given of recent and ongoing flooding
- Reviewed Actions from previous residents meeting on 12th Mar 2019
- Proposed short term mitigations
- Proposed medium term flood risk reduction measures
- Prestwick Strategic Study (longer term solution)

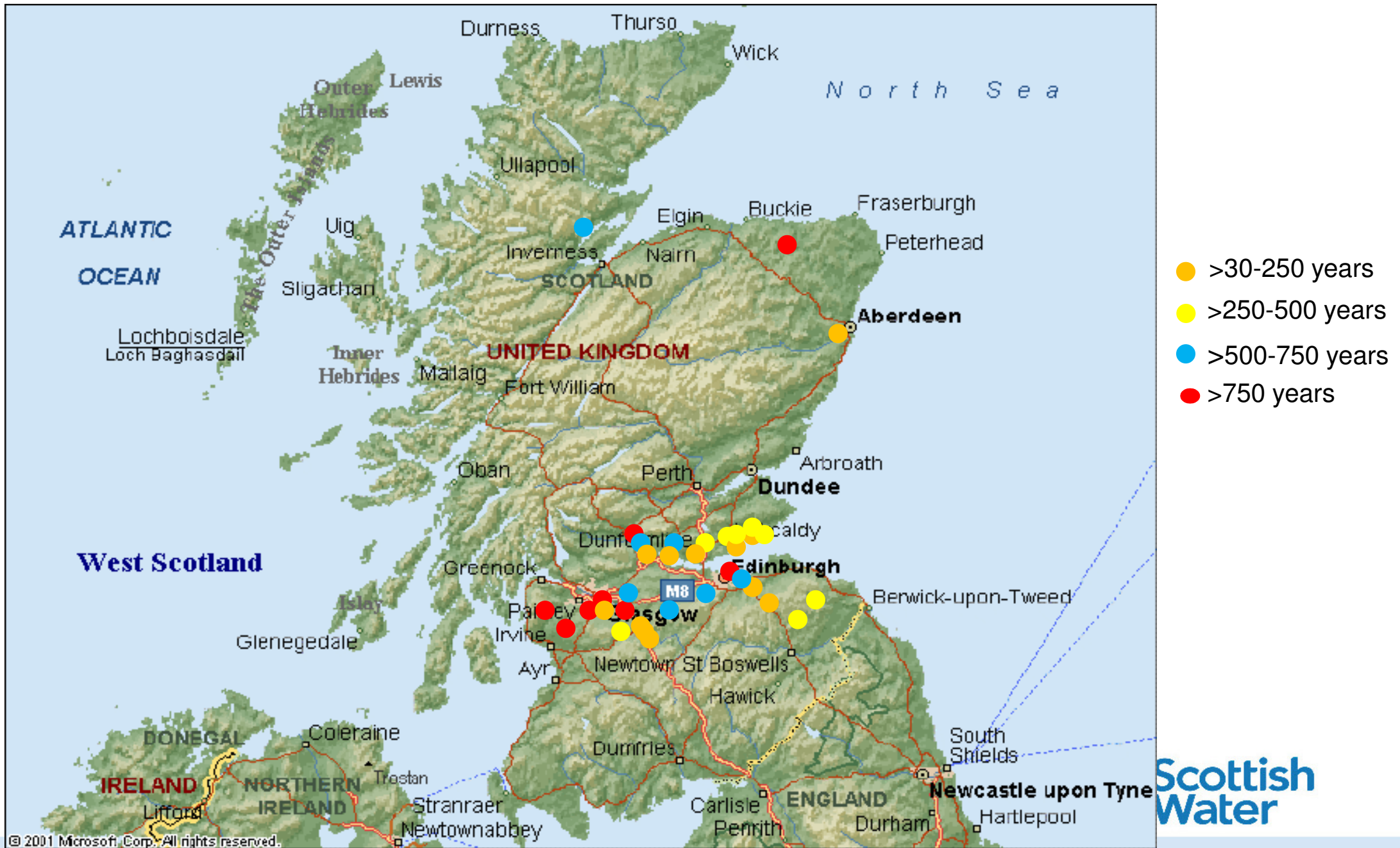


# Overview of Recent Flooding in Prestwick





# Rainfall Return Period Analysis: June - Aug 2019



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# What have we been doing about flooding?

- Developing short term mitigations and medium term flood reduction measures to reduce the impact of both internal and external flooding.
- Prestwick Strategic Study Ongoing
- Surveys undertaken to support Prestwick Strategic Study
- Supporting customers



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# Short Term Mitigations



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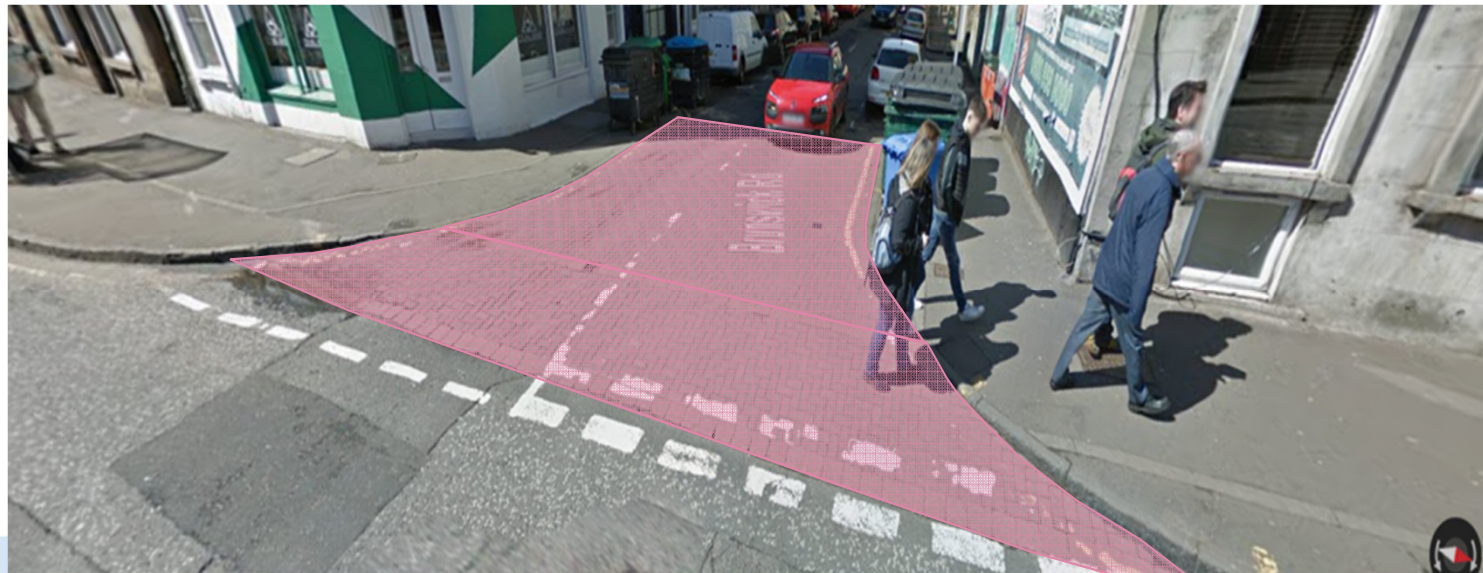
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# Proposed Short Term Mitigations

## Non Return Valves (NRVs)



## Speed Tables

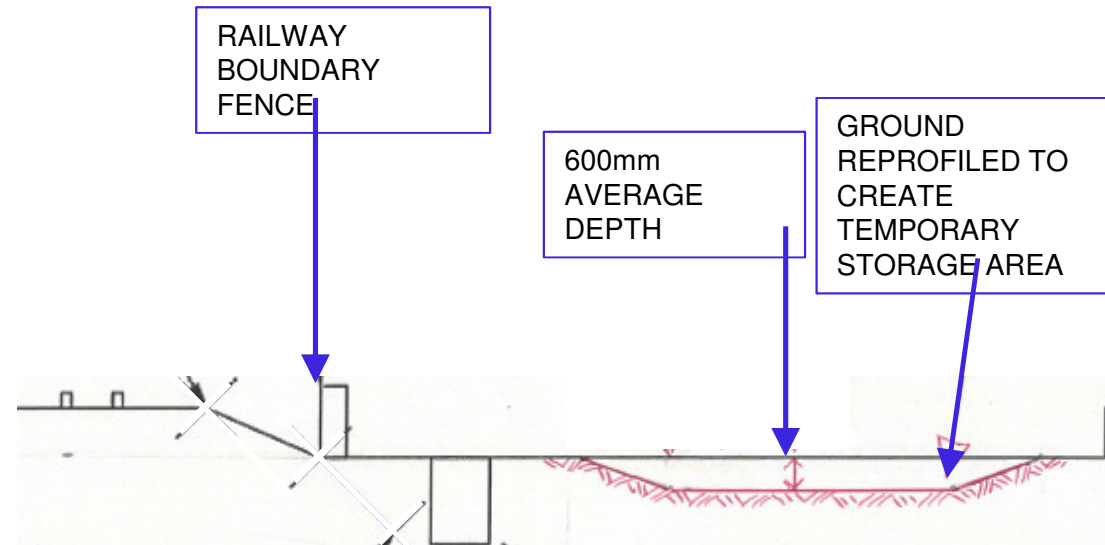
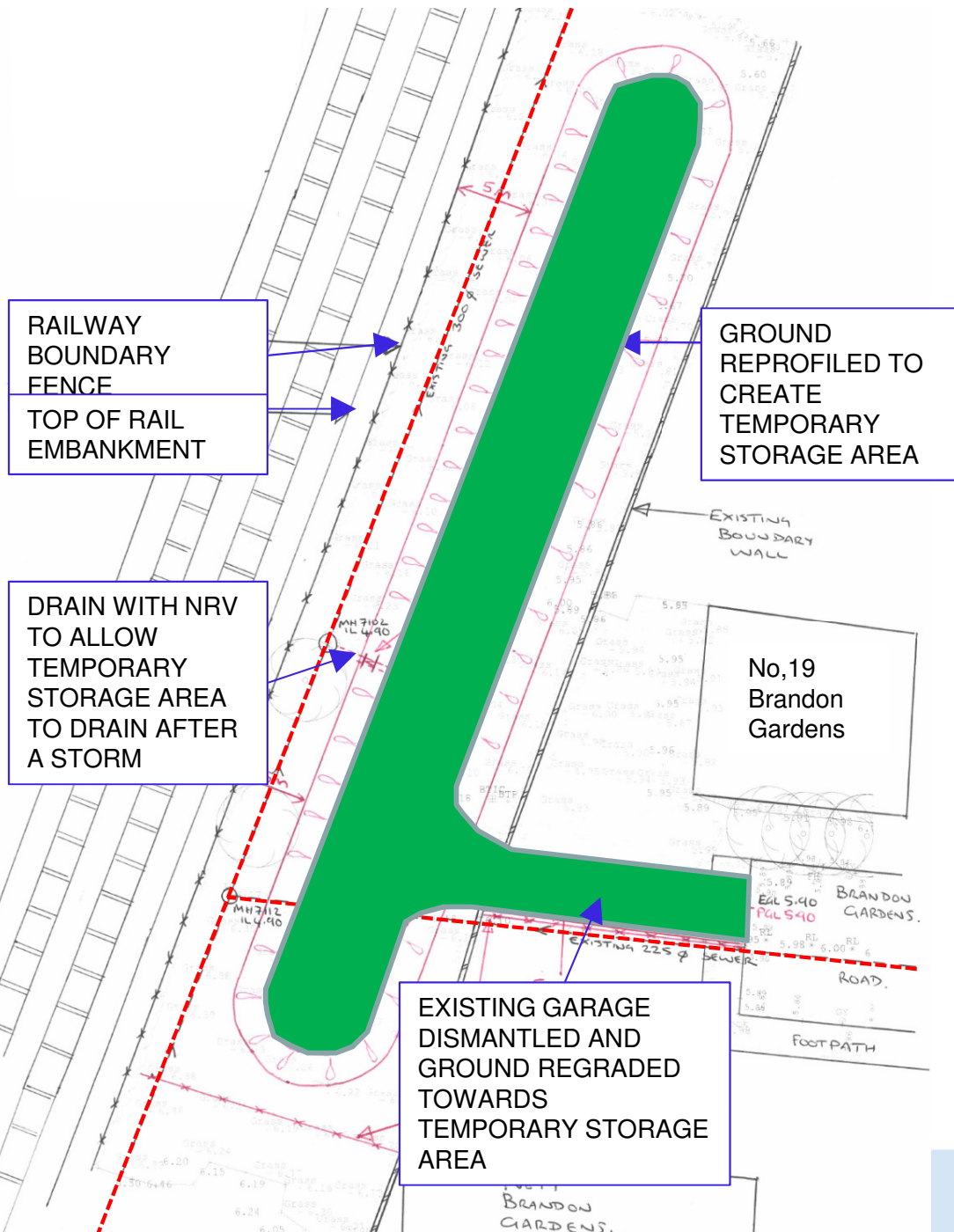


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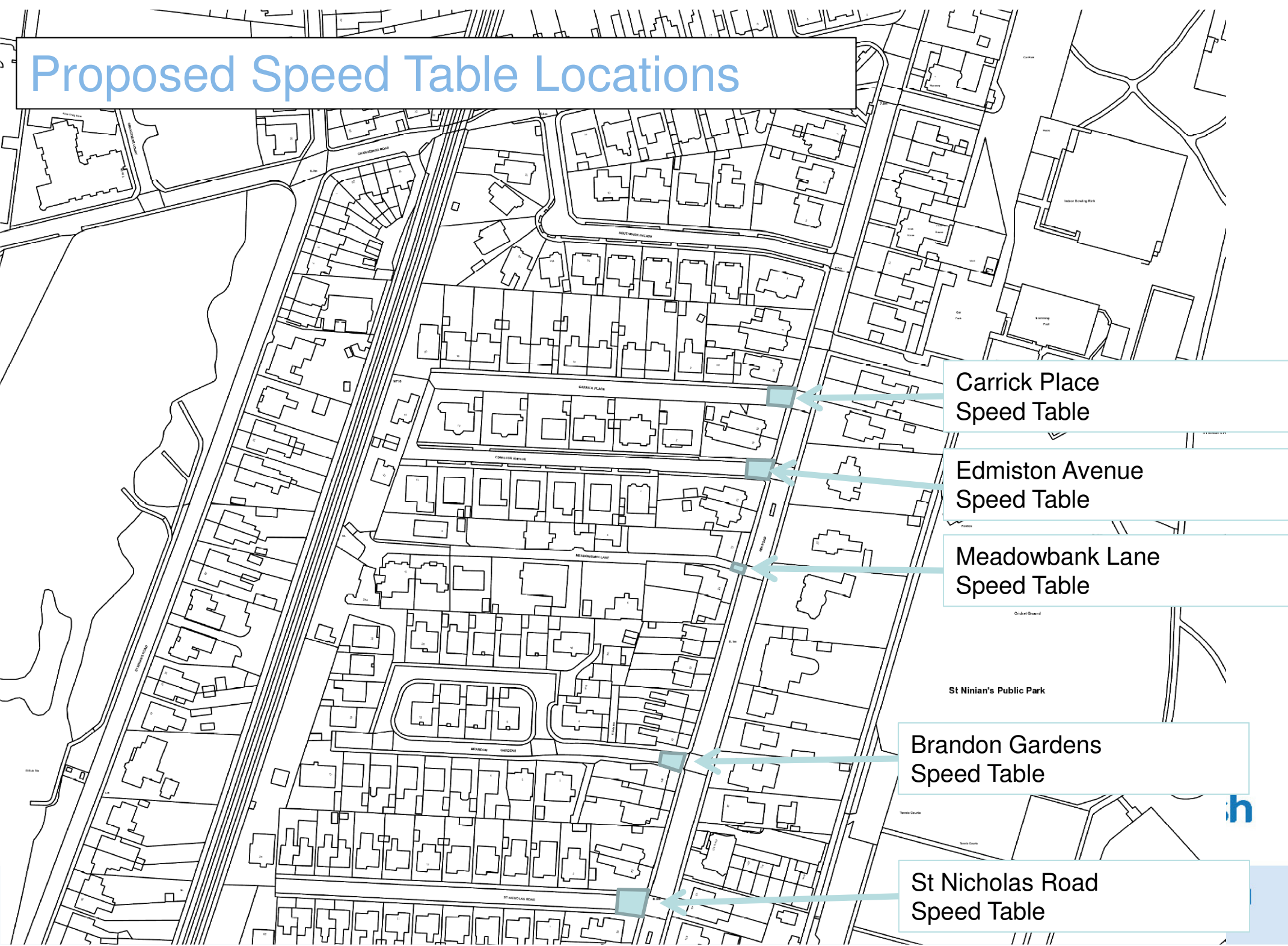
# Temporary Flood Area to rear of 19 Brandon Gardens



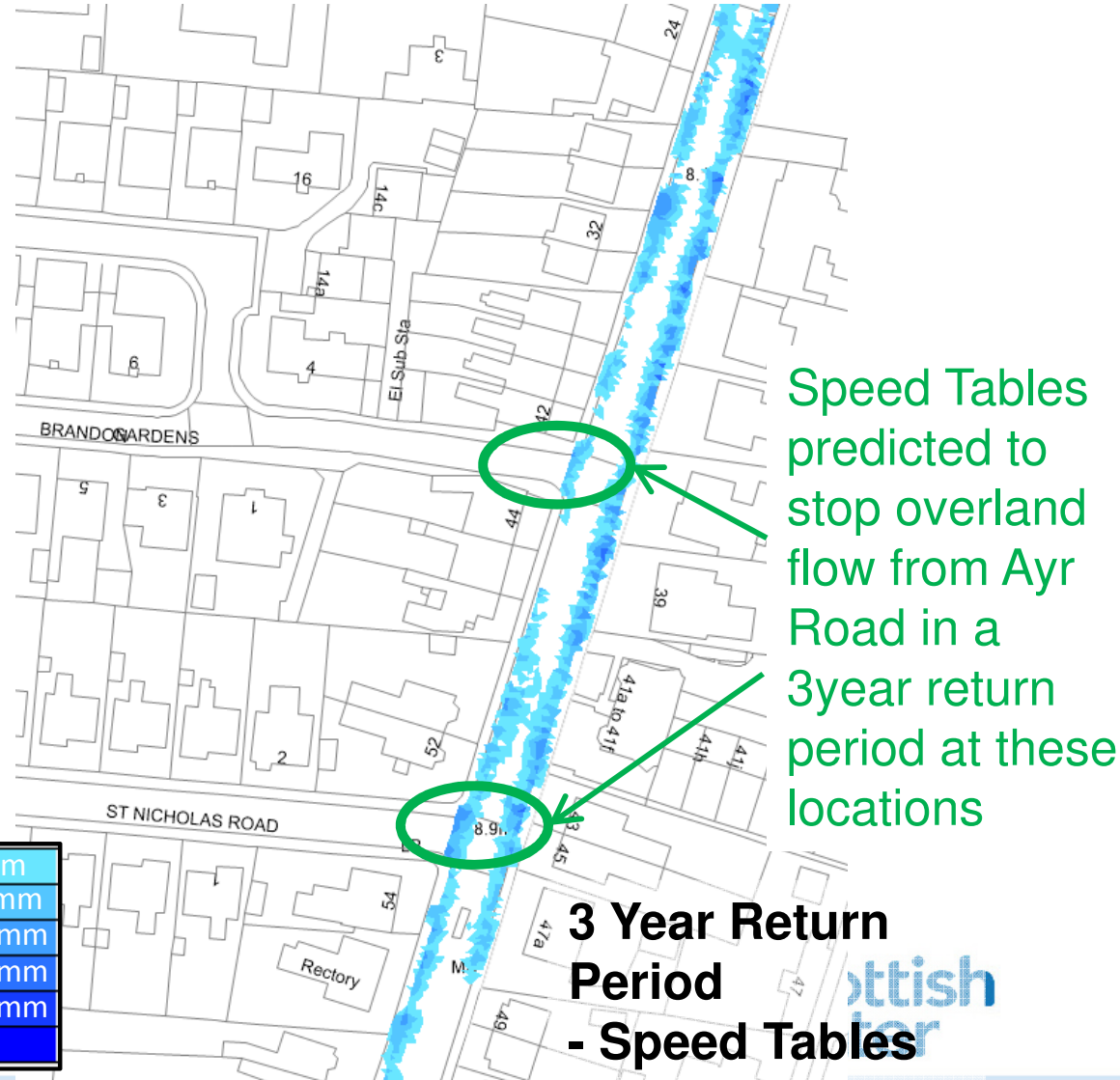
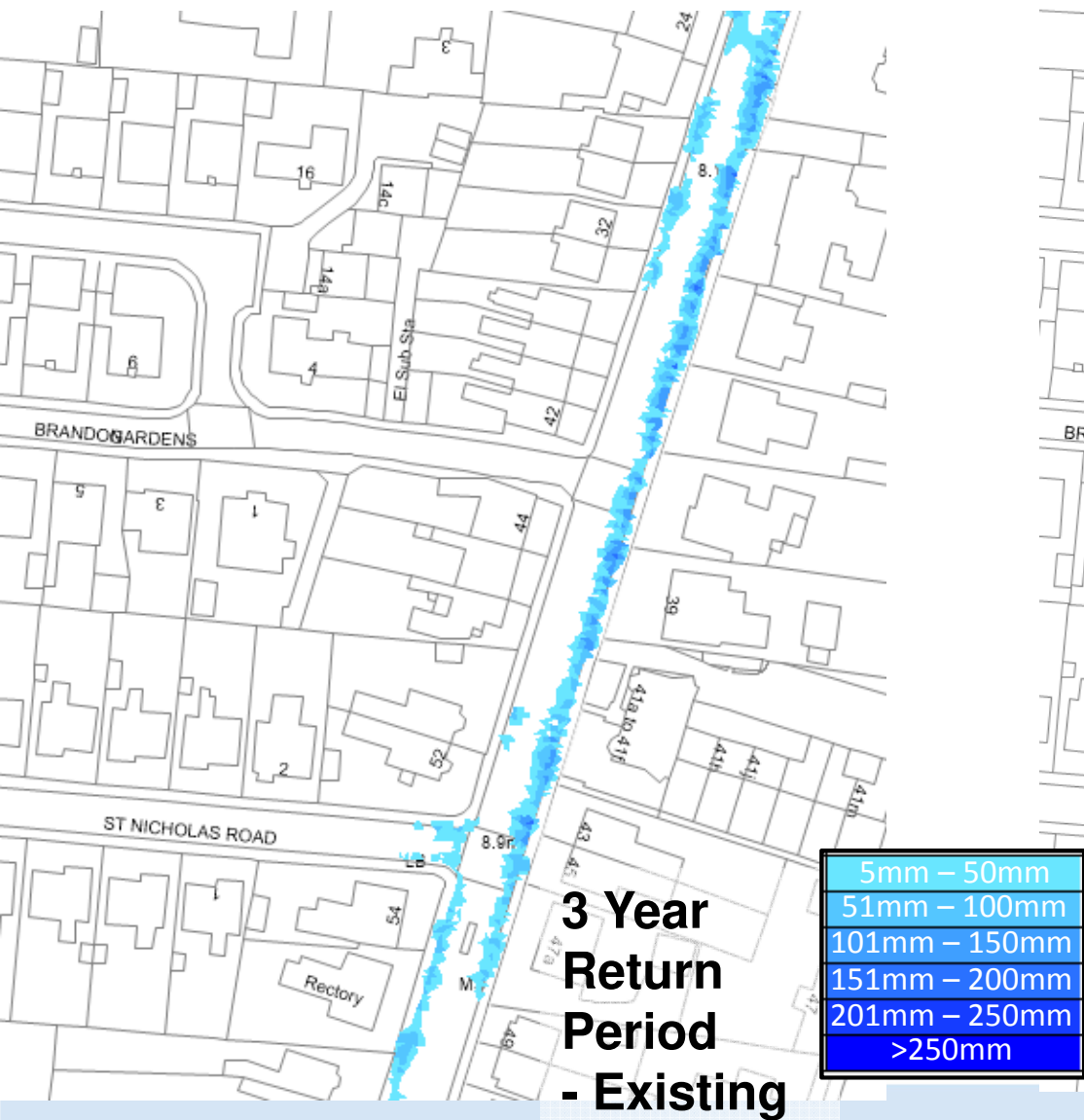
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# Proposed Speed Table Locations

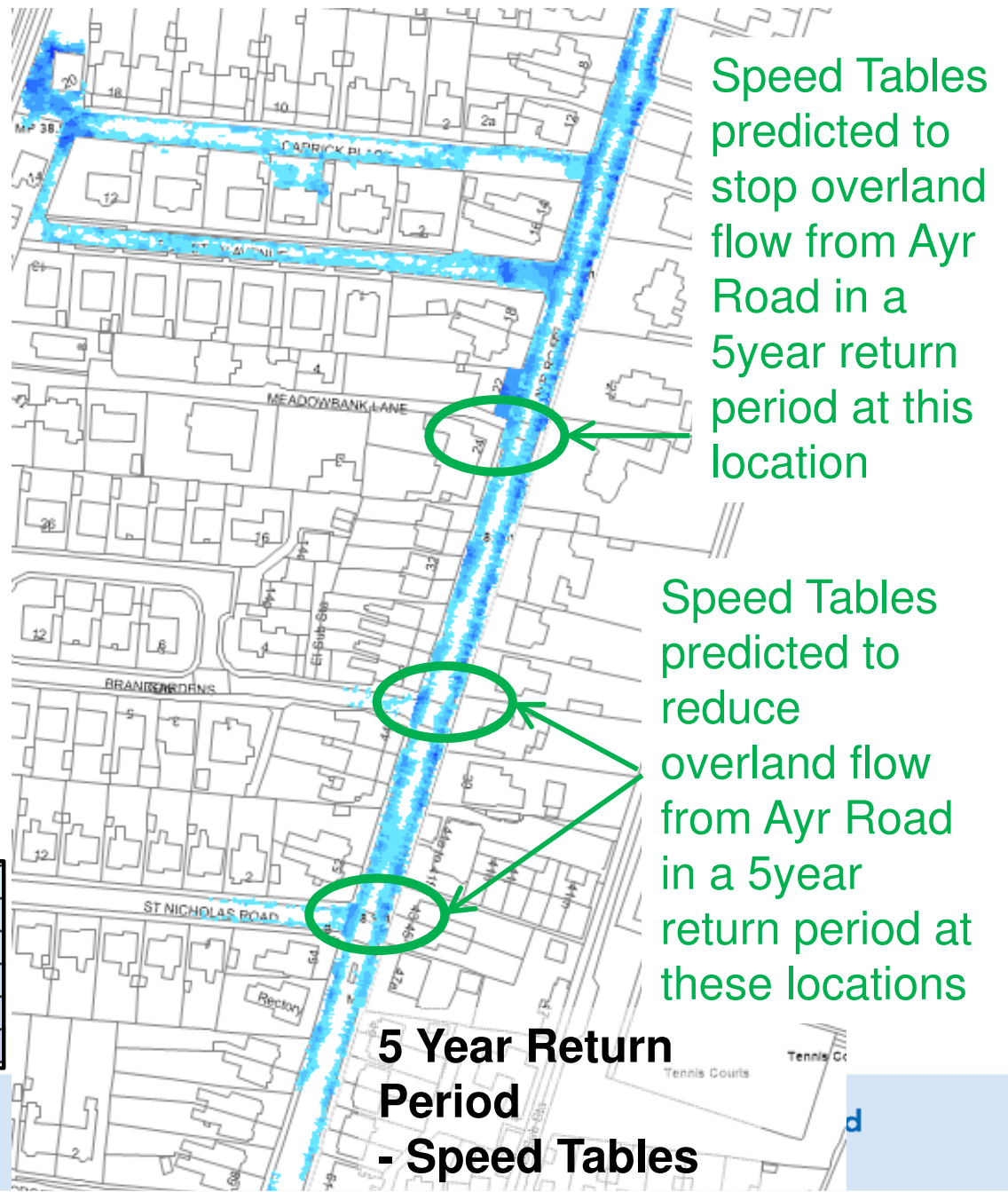


# Speed Tables – 2D Assessment





# Speed Tables – 2D Assessment



# Medium Term Flood Reduction Measures



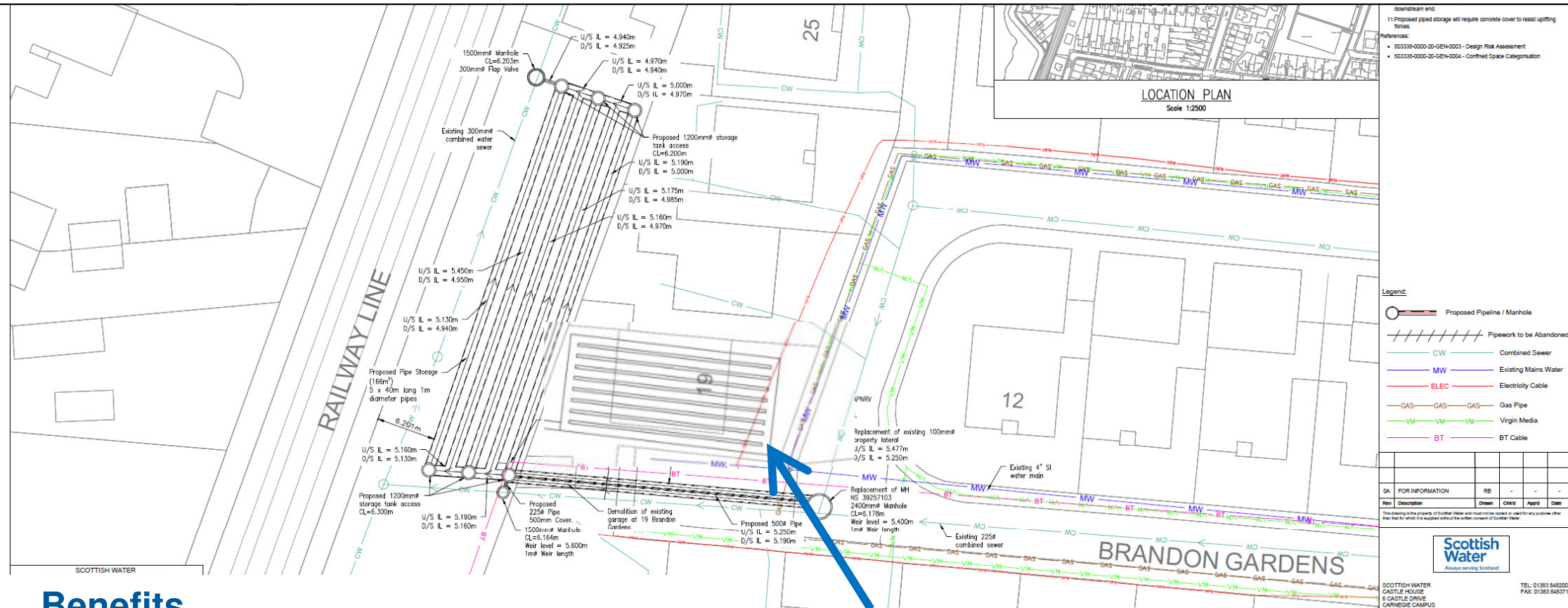
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# Proposed Medium Term Flood Risk Reduction Measures (in addition to speed tables)

## New Storage Pipe and Storage Tank in Brandon Gardens



### Benefits

- Would provide 6 year protection for Brandon Gardens.

### Risks

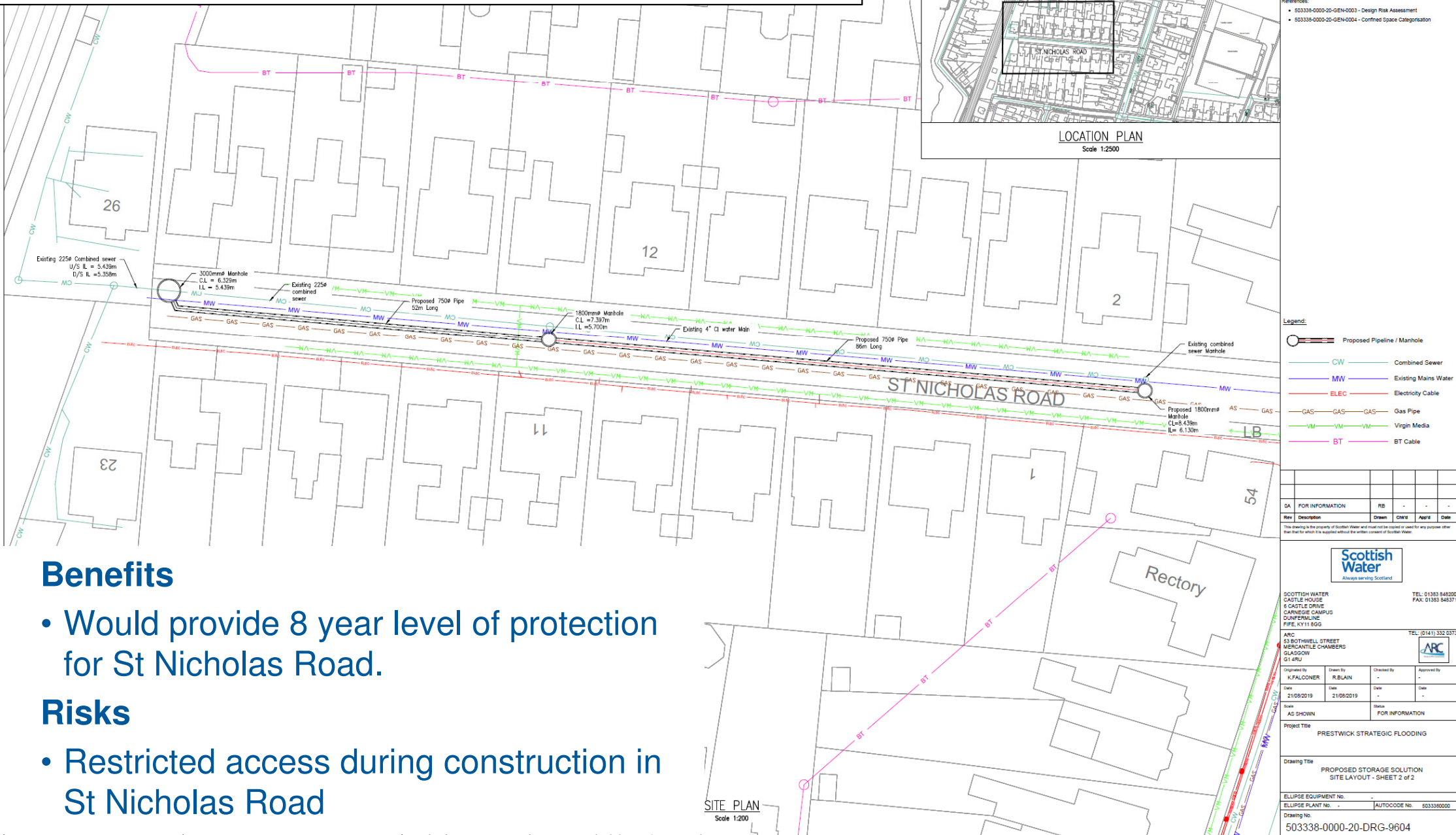
- Working alongside railway. Potential time implications.

### Opportunities

- If 19 Brandon Gardens plot used to provide additional storage, this could increase the level of protection to 10 Year.

# Proposed Medium Term Flood Risk Reduction Measures (in addition to speed tables)

## New Storage Pipe in St Nicholas Road



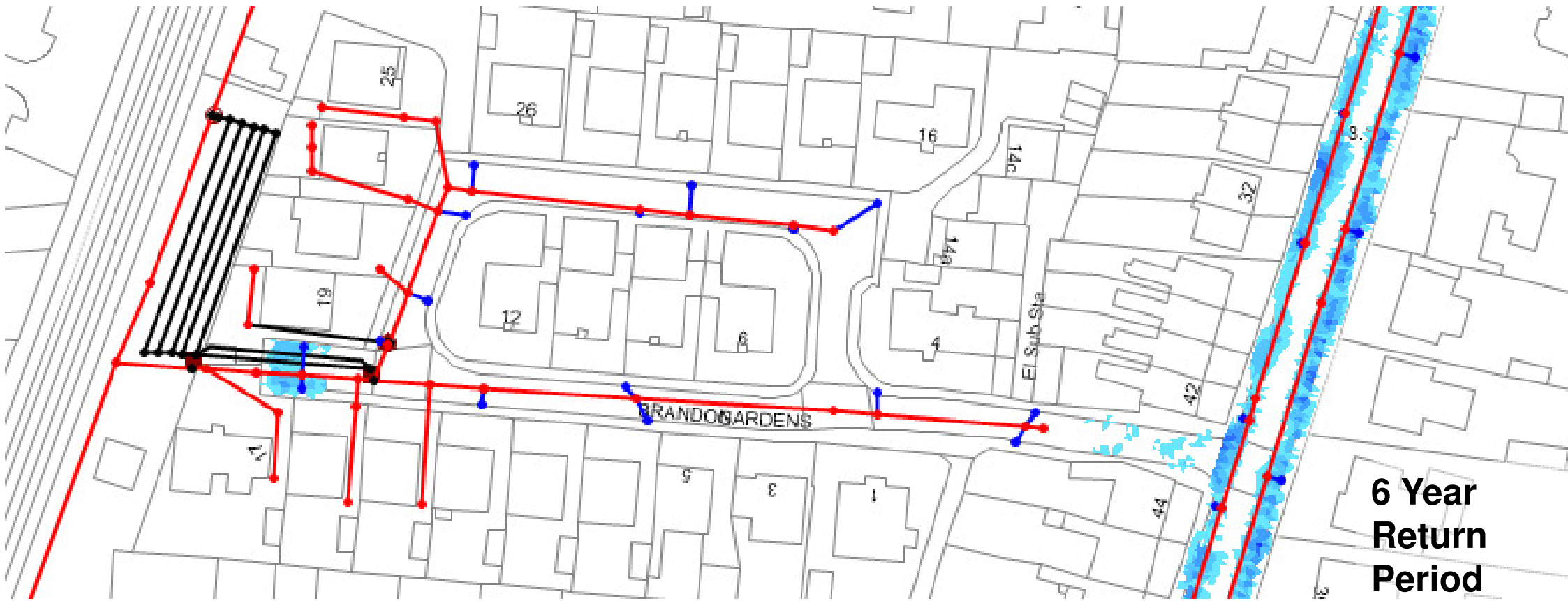
### Benefits

- Would provide 8 year level of protection for St Nicholas Road.

### Risks

- Restricted access during construction in St Nicholas Road

# Storage & Speed Tables – 2D Assessment (Brandon Gardens)



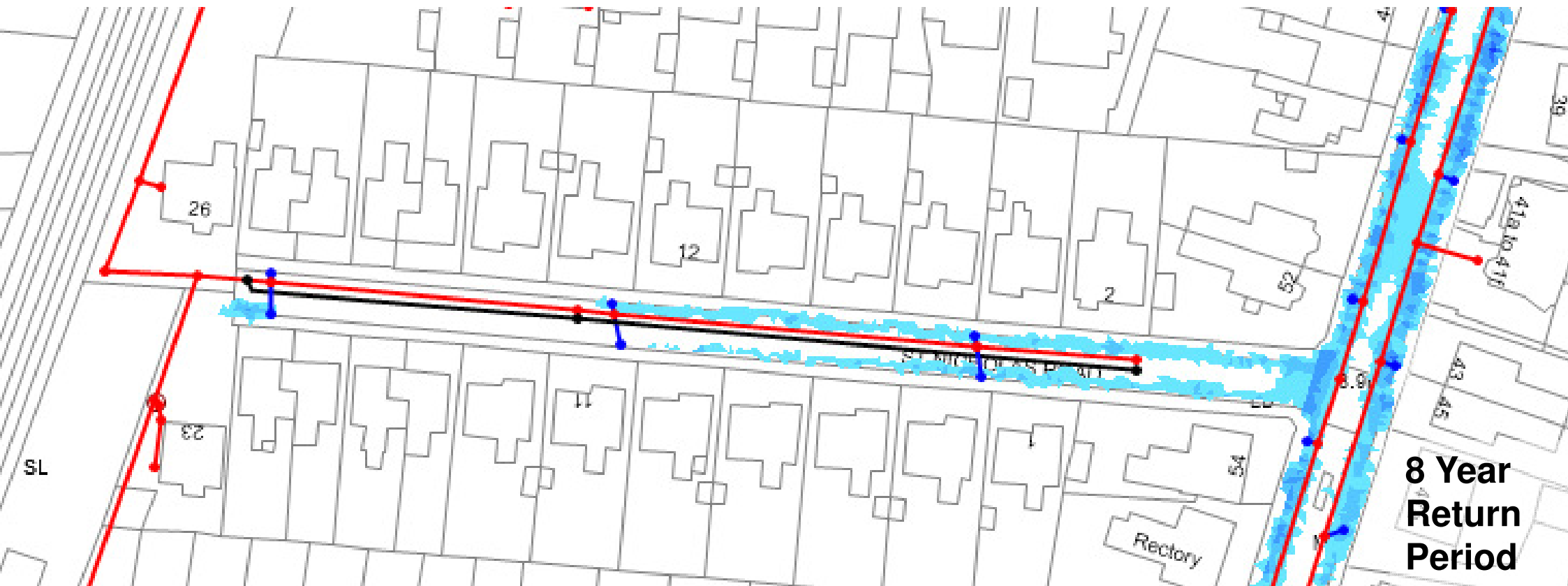
**6 Year  
Return  
Period**



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# Storage & Speed Tables – 2D Assessment (St Nicholas Road)



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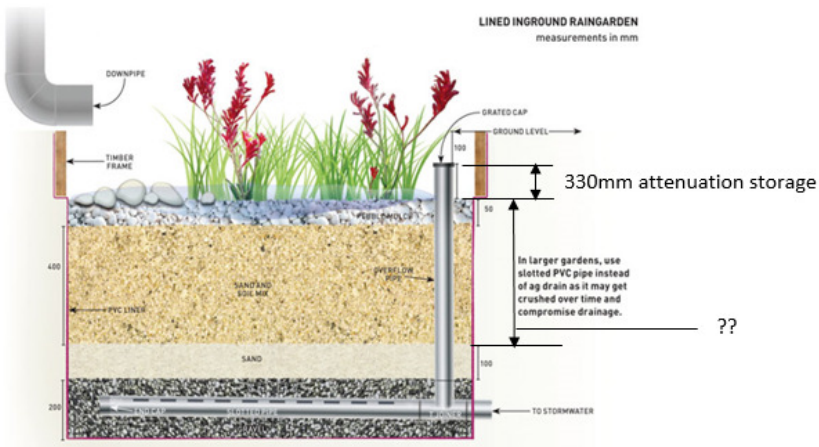


# Property Level Surface Water Attenuation

Rain Butts



Raingarden planter boxes



Bin shelter with green roof



Sedum green roof



Natural raingarden

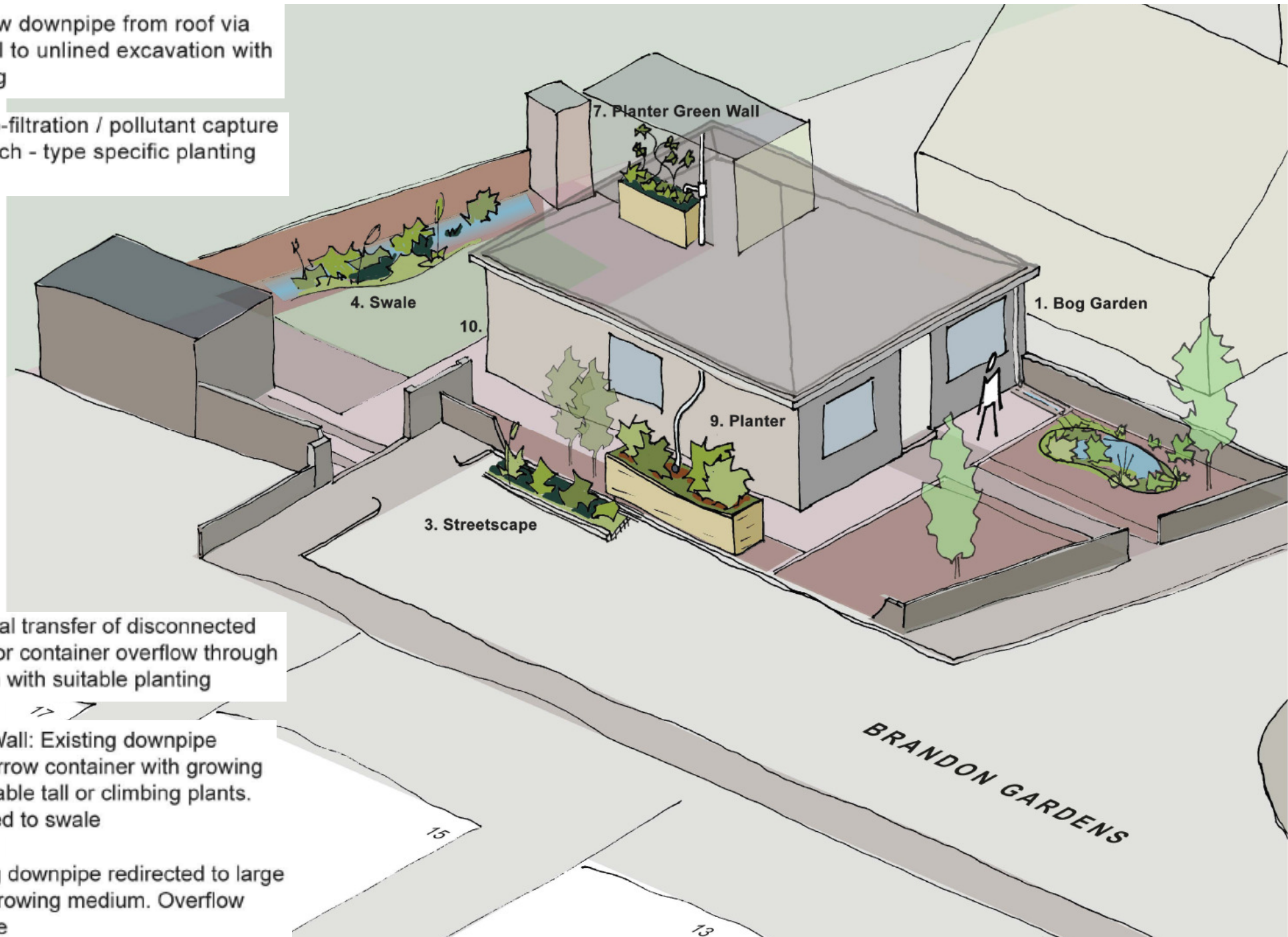


Green wall



# Possible Property Level Surface Water Attenuation at No.19

1. Bog garden: New downpipe from roof via shallow channel to unlined excavation with suitable planting
3. Streetscape: Bio-filtration / pollutant capture within lined trench - type specific planting essential



4. Swale: Directional transfer of disconnected downpipes and/or container overflow through infiltration trench with suitable planting
7. Planter Green Wall: Existing downpipe redirected to narrow container with growing medium for suitable tall or climbing plants. Overflow directed to swale
9. Planter: Existing downpipe redirected to large container with growing medium. Overflow directed to swale

# Risks and opportunities

## Risks

- Ground conditions (high water table)
- Network Rail engagement/objections
- Planning Approval for temporary storage area

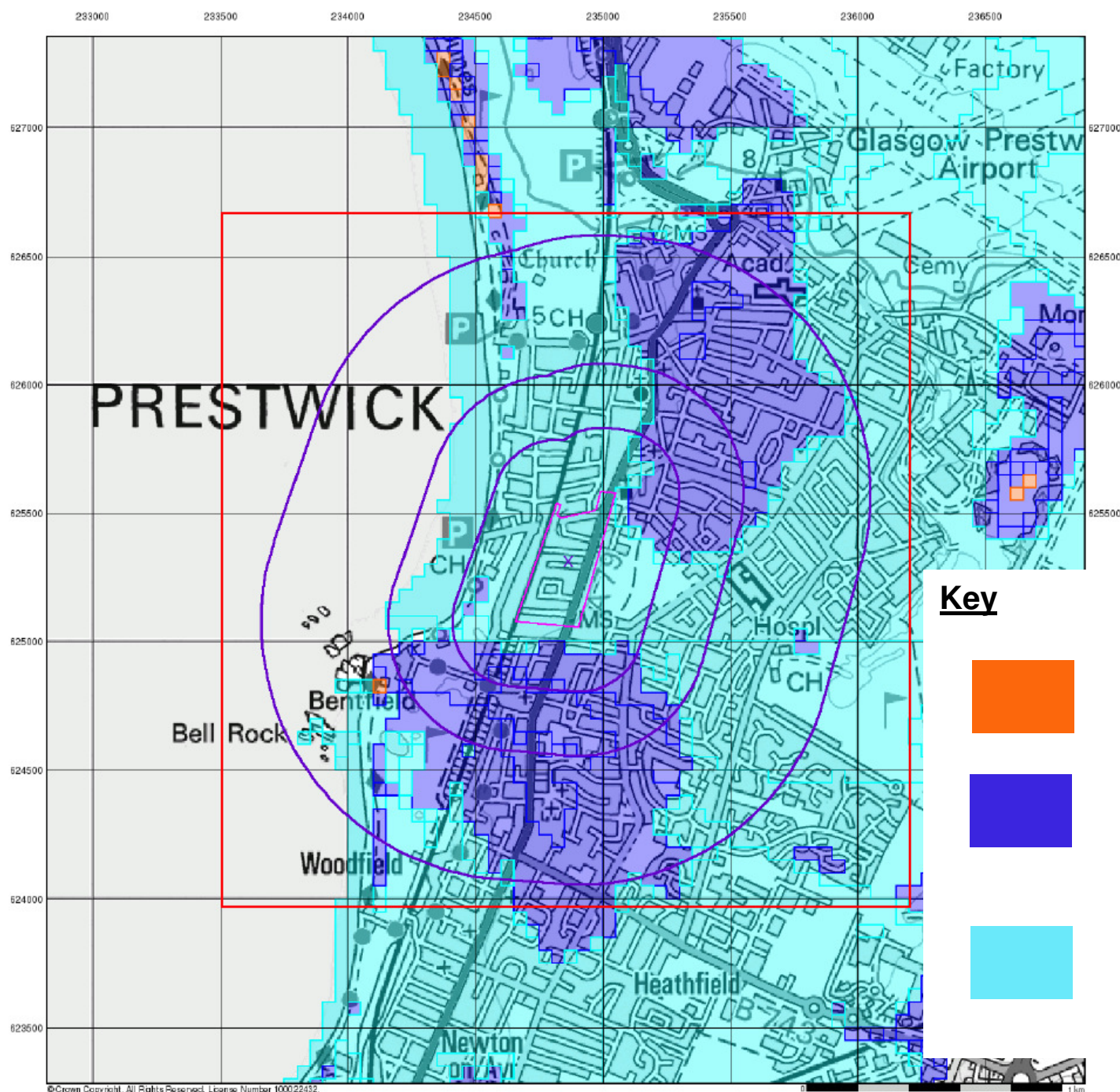
## Opportunities

- Storage in footprint of 19 Brandon Gardens
- Local source control (water butts/rain gardens)
- Source control (St Ninian's Park)





# Envirocheck – Groundwater Flood Risk Map



## Envirocheck®

LANDMARK INFORMATION GROUP®

### BGS Flood GFS Data

#### General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Slice

#### Agency and Hydrological (Flood)

- Limited Potential for Groundwater Flooding to Occur
- Potential for Groundwater Flooding of Property Situated Below Ground Level
- Potential for Groundwater Flooding to Occur at Surface

### Key



- Limited Potential for Groundwater Flooding to Occur



- Potential for Groundwater Flooding of Property Situated Below Ground Level



- Potential for Groundwater Flooding to Occur at Surface

**Landmark**  
LANDMARK INFORMATION GROUP

Tel: 0844 844 9952  
Fax: 0844 844 9951  
Web: [www.envirocheck.co.uk](http://www.envirocheck.co.uk)

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# Strategic Study



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# Strategic Study Update

# Completed

- **Survey works** - 67Ha Impermeable Area Surveys
  - 214No Manholes
  - 816m of CCTV
  - 30No property surveys
  - 2No Pumping Stations
- **Initial high-level option assessment**



## In Progress

- Flow survey
- Model updates with survey information
- Preparation for Hydraulic Review
- Assessment of verification
- SuDS Opportunity mapping and multiple benefit assessments



## Next Steps

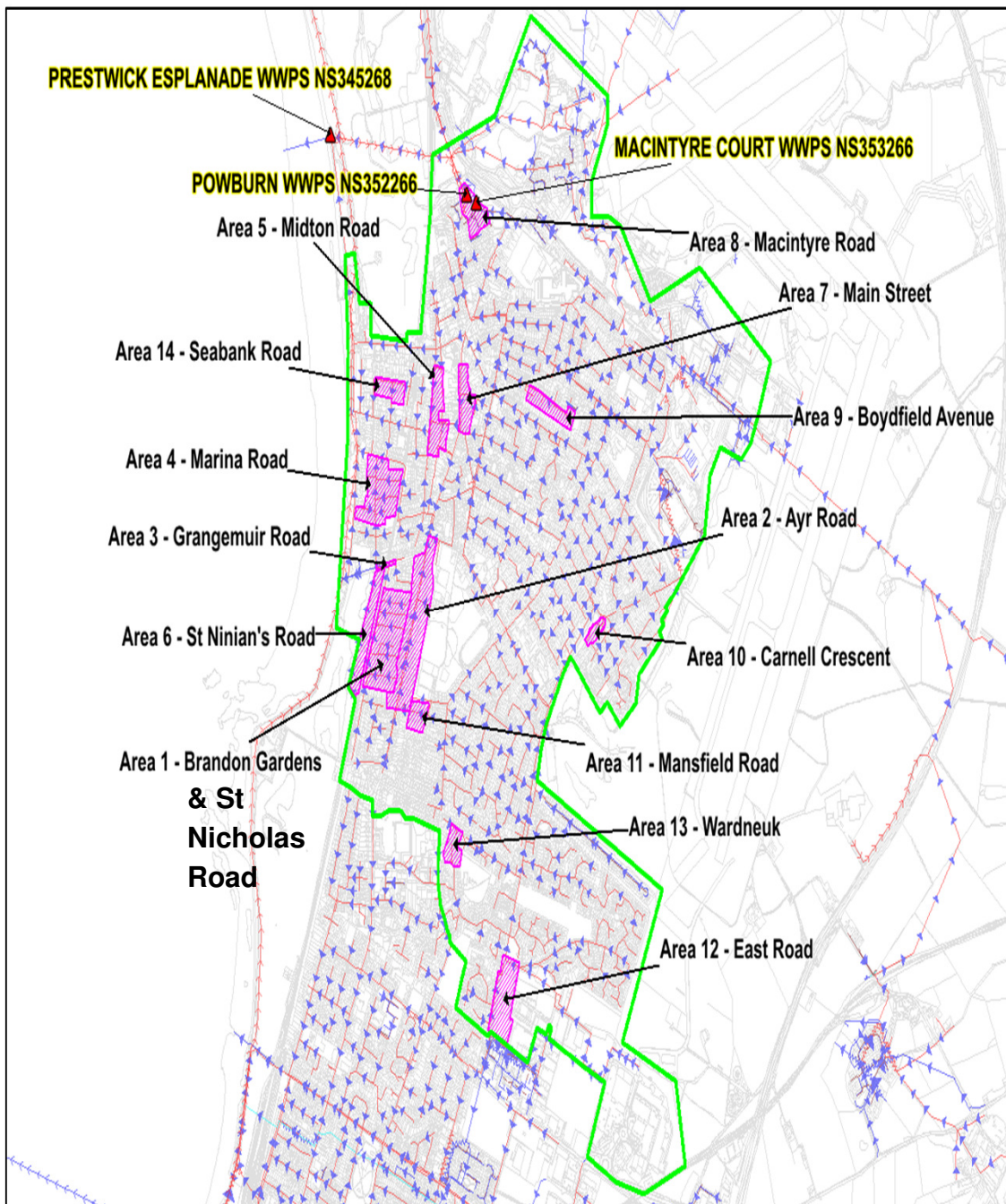
- Hydraulic Review
- Develop further high-level options
- Monitor/reassess flow survey

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# Prestwick Strategic Study - Study Areas



Study Area Description	Flooding Summary
<b>Area 1</b> – Brandon Gardens & St Nicholas Road	Internal Flooding (2No) External Flooding (3No) Highway Flooding (1No)
<b>Area 2</b> – Ayr Road	External Flooding (4No) Highway Flooding (1No)
<b>Area 3</b> – Grangemuir Road	External Flooding (2No) Highway Flooding (1No)
<b>Area 4</b> – Marina Road	External Flooding (3No) Highway Flooding (2No)
<b>Area 5</b> – Midton Road	External Flooding (5No) Highway Flooding (1No)
<b>Area 6</b> – St Ninian's Road	External Flooding (2No)
<b>Area 7</b> – Main Street	Internal Flooding (TBC) Highway Flooding (1No)
<b>Area 8</b> – MacIntyre Road	Highway Flooding (1No) Other Flooding Area (3No)
<b>Area 9</b> – Boydfield Avenue	External Flooding (4No)
<b>Area 10</b> – Carnell Crescent	Highway Flooding (1No)
<b>Area 11</b> – Mansfield Road	Highway Flooding (1No)
<b>Area 12</b> – East Road	Model Predicted Flooding
<b>Area 13</b> - Wardneuk	Other Flooding Area (1No)
<b>Area 14</b> – Seabank Road	External Flooding (1No)

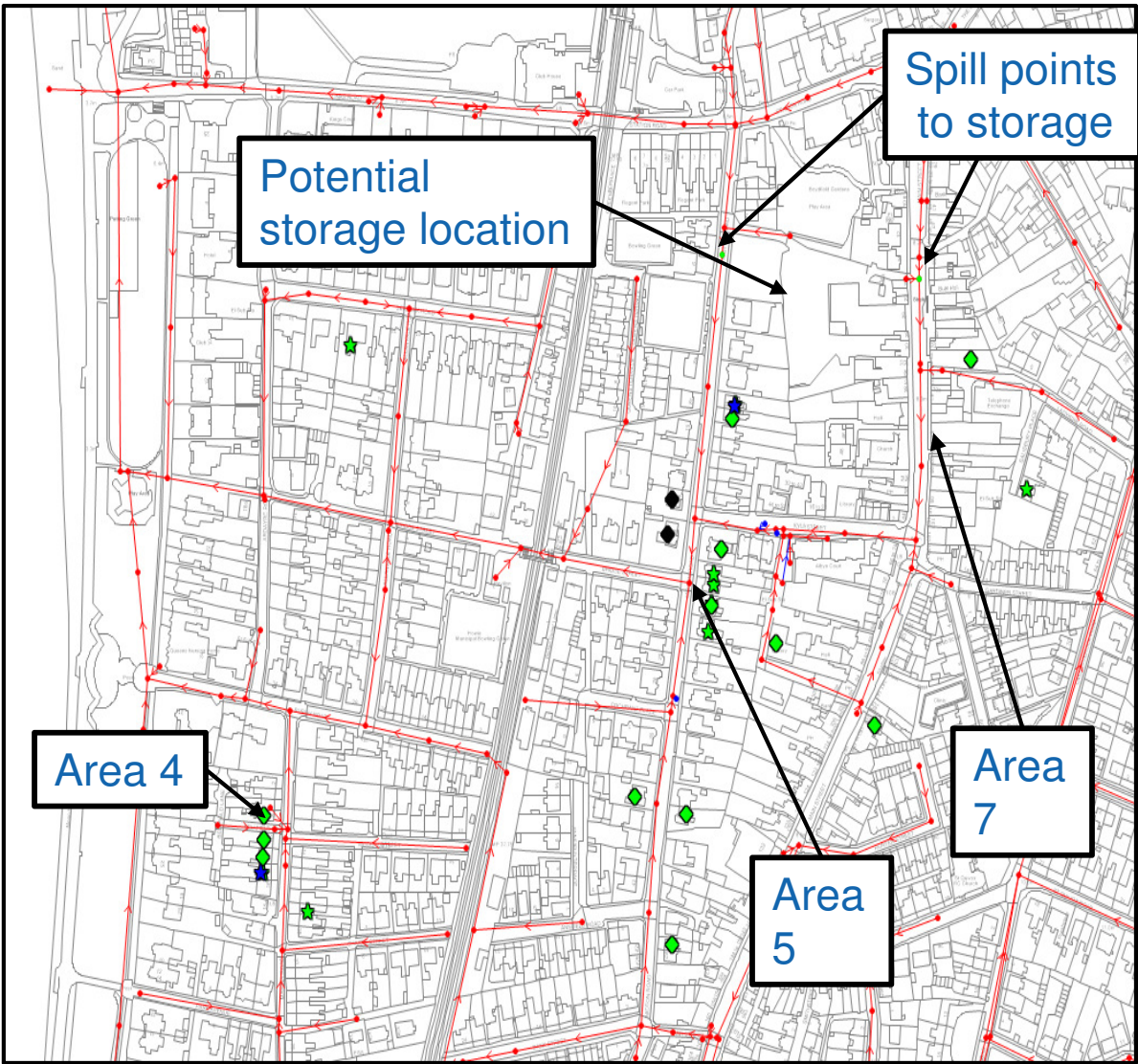
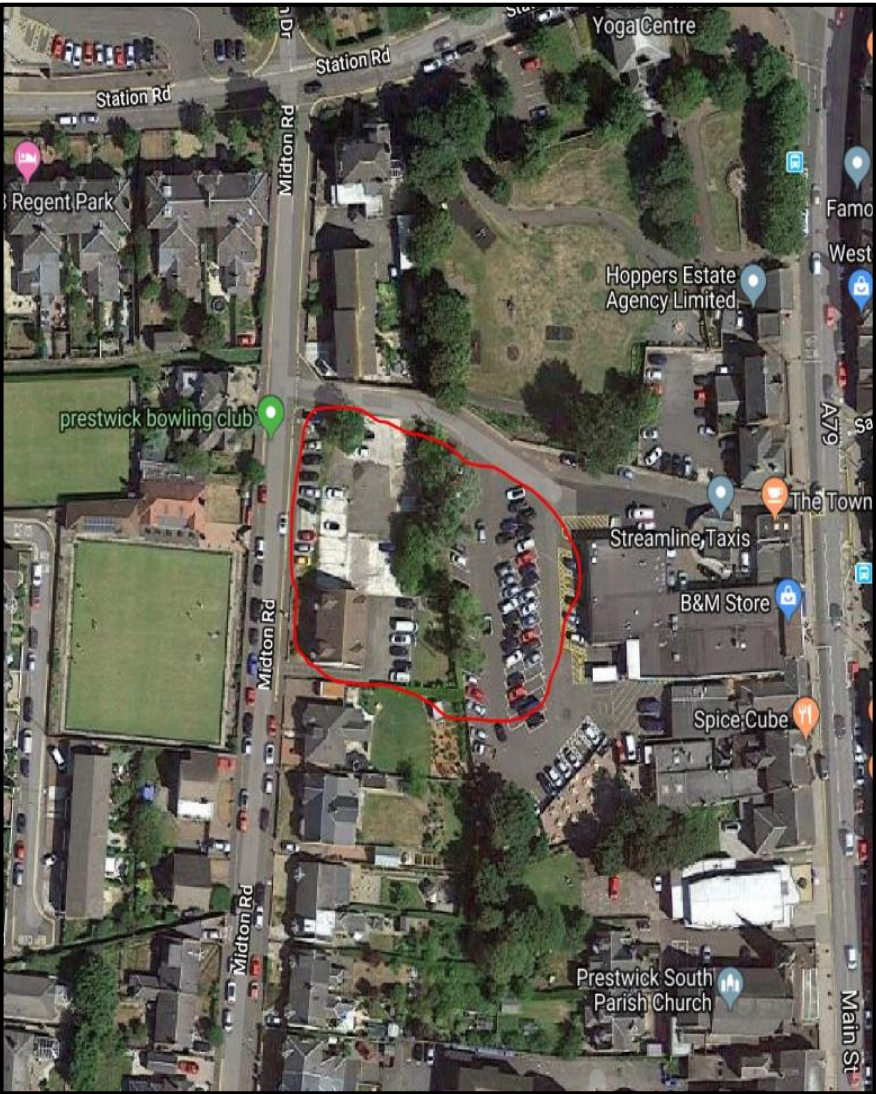


# EXAMPLE - High-level option assessment

## Option description/purpose

Potential storage area or draw-off points for strategic solution

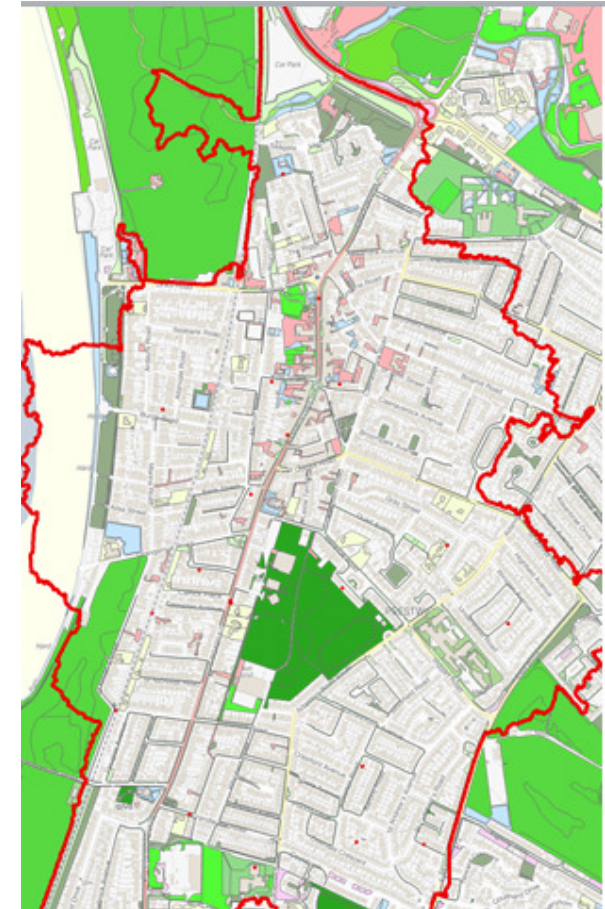
Three scenarios assessed, spill point on Main Street, spill point on Midton Road and both spill points together





# SuDS Opportunity mapping and benefit assessments

- Catchments across Scotland
- Identify opportunities to remove surface water from public sewers.
- GIS-based assessment
- Whole life costs estimates.
- Identify economic, environmental and social benefits.
- Stakeholder engagement





# Prestwick Flooding Summary Timeline

Prestwick Flooding	2019				2020												2021			
	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr
<b>Temporary Mitigations</b>																				
Install NRVs																				
Complete land purchase (indicative)																				
Planning Application for temp flood area																				
Create temporary flood area (dependent on planning)																				
<b>Speed Tables</b>																				
Road Notification for Speed Tables																				
Construct Speed Tables																				
<b>St Nicholas Road Storage</b> (indicative timescales subject to contract discussions with delivery partner)																				
Develop Design to Construction																				
Construction of Storage																				
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<b>Prestwick Strategic Study</b>																				
Surveys																				
Flow Survey																				
Model Maintenance																				
Model Predictions/Hydraulic Review																				
Optioneering – Long List																				
Optioneering – Short List																				
Costing of Options																				
Identify Preferred Solution																				
Discuss/Agree Preferred Solution with Stakeholders																				



Proposed Stakeholder meetings

# Summary

- Historic and complex issues relating to sewer flooding in Prestwick
- Committed to progressing **Prestwick Strategic Drainage Study** to identify strategic solutions
- In interim committed to doing what we can to reduce frequency/impact of localised flooding in Brandon Gardens & St Nicholas Road
- Will maintain dialogue with the community as we progress
- Next meeting planned for May 2020 to review long list of options