

# Oban Flood Study

Community Feedback Event  
June 2019

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**EnviroCentre:** Kenneth MacDougall & Eleanor Morrison



# Oban Flood Study



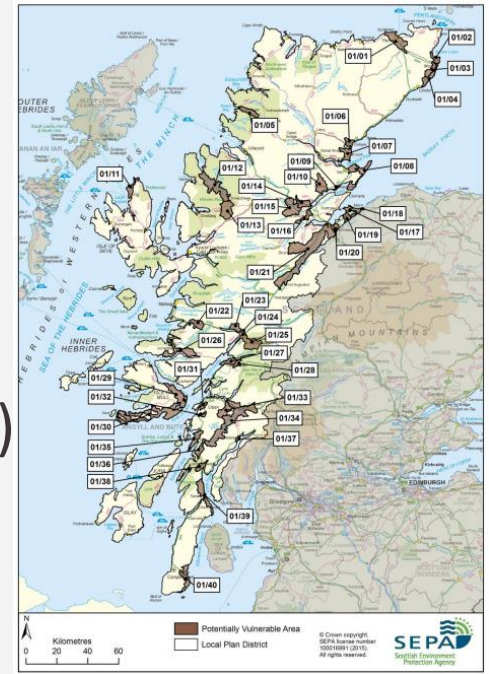
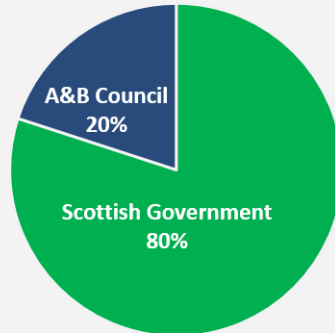
- Introductions
- Context
- The Study To Date
- Options Considered
- Short-listed Options
- Questions & Discussion

# Context

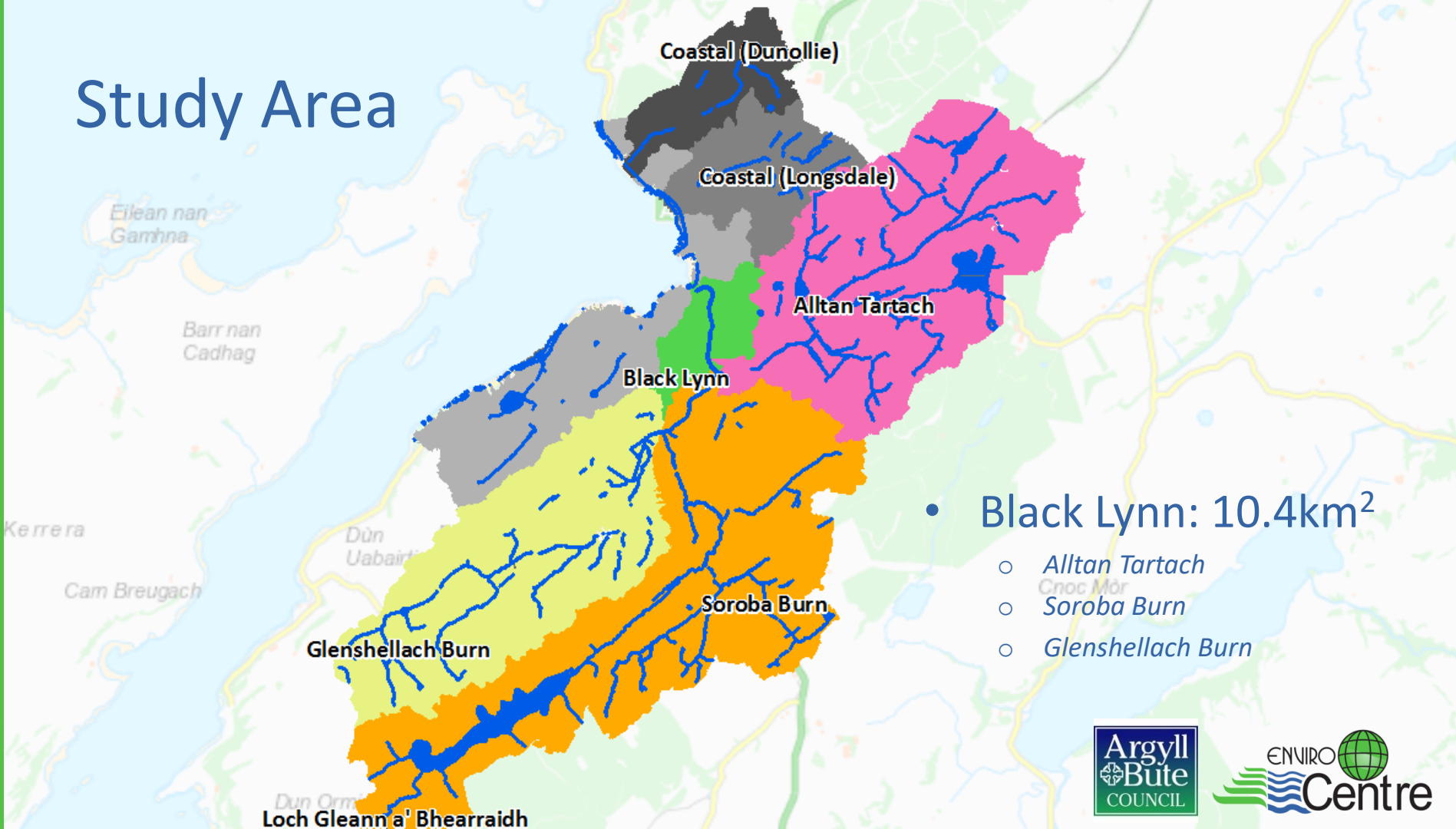
- Flood Risk Management Act (2009)
- Oban - 'Potentially Vulnerable Area'
- Local Flood Risk Management Plan (A&BC, 2016)
- Planning Cycles



- Competitive Funding



# Study Area



• Black Lynn: 10.4km<sup>2</sup>

- Alltan Tartach
- Soroba Burn
- Glenshellach Burn

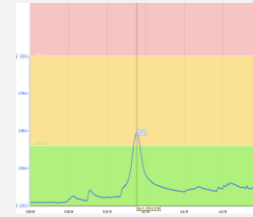
# Flood Study Process



Public Consultation



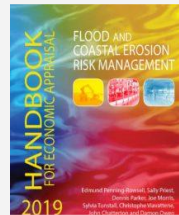
Flood Modelling



Flood Monitoring & Alerts



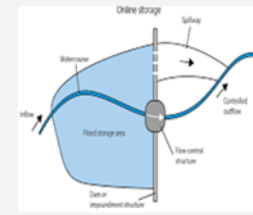
Surface Water Flood Risk Analysis



Damage Assessment



Options Identification & Prioritisation

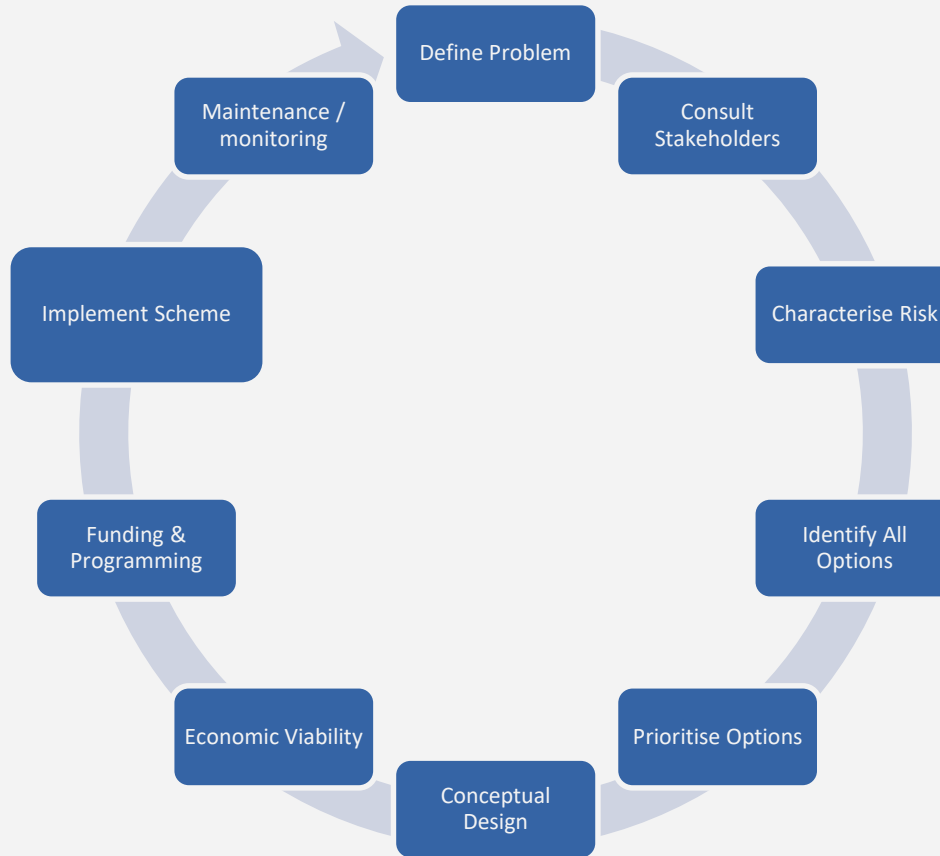


Conceptual Design & Costing



Multi-Criteria Assessment

# Flood Scheme Development



# Stakeholders

## Oban Community:

Residents: urban, rural & temporary  
Landowners, businesses & local service providers  
Community groups  
Schools & University

A&B  
Council

SEPA

Scottish  
Water

Transport  
Scotland

Crown  
Estate

Scottish  
Forestry

SNH

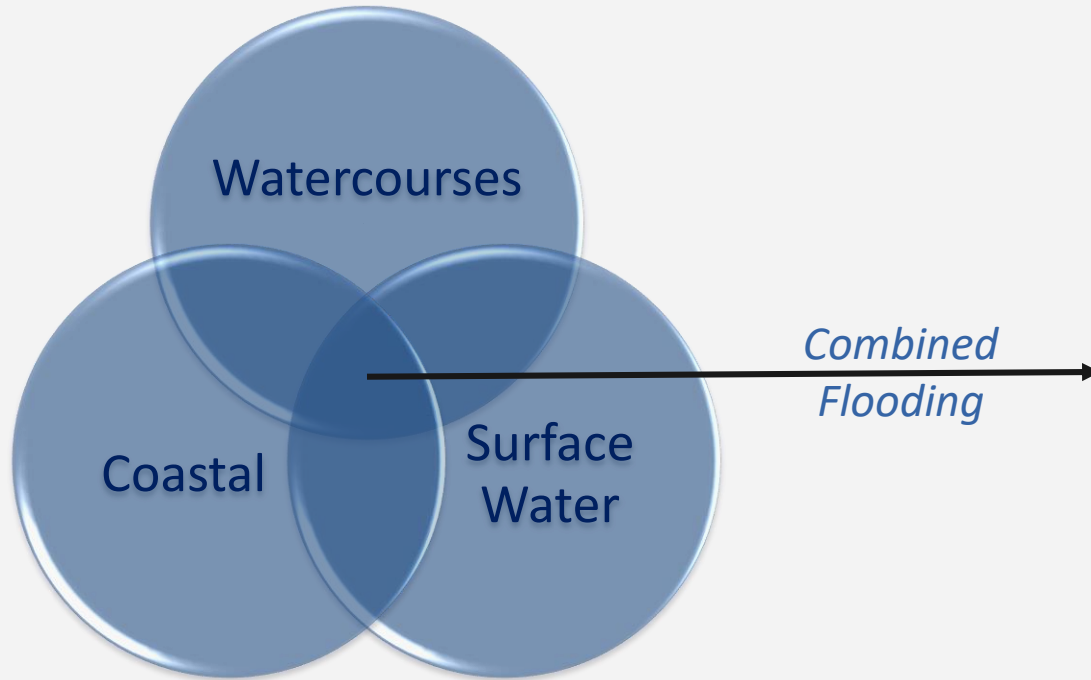
Ferry  
Operators  
(CalMac)

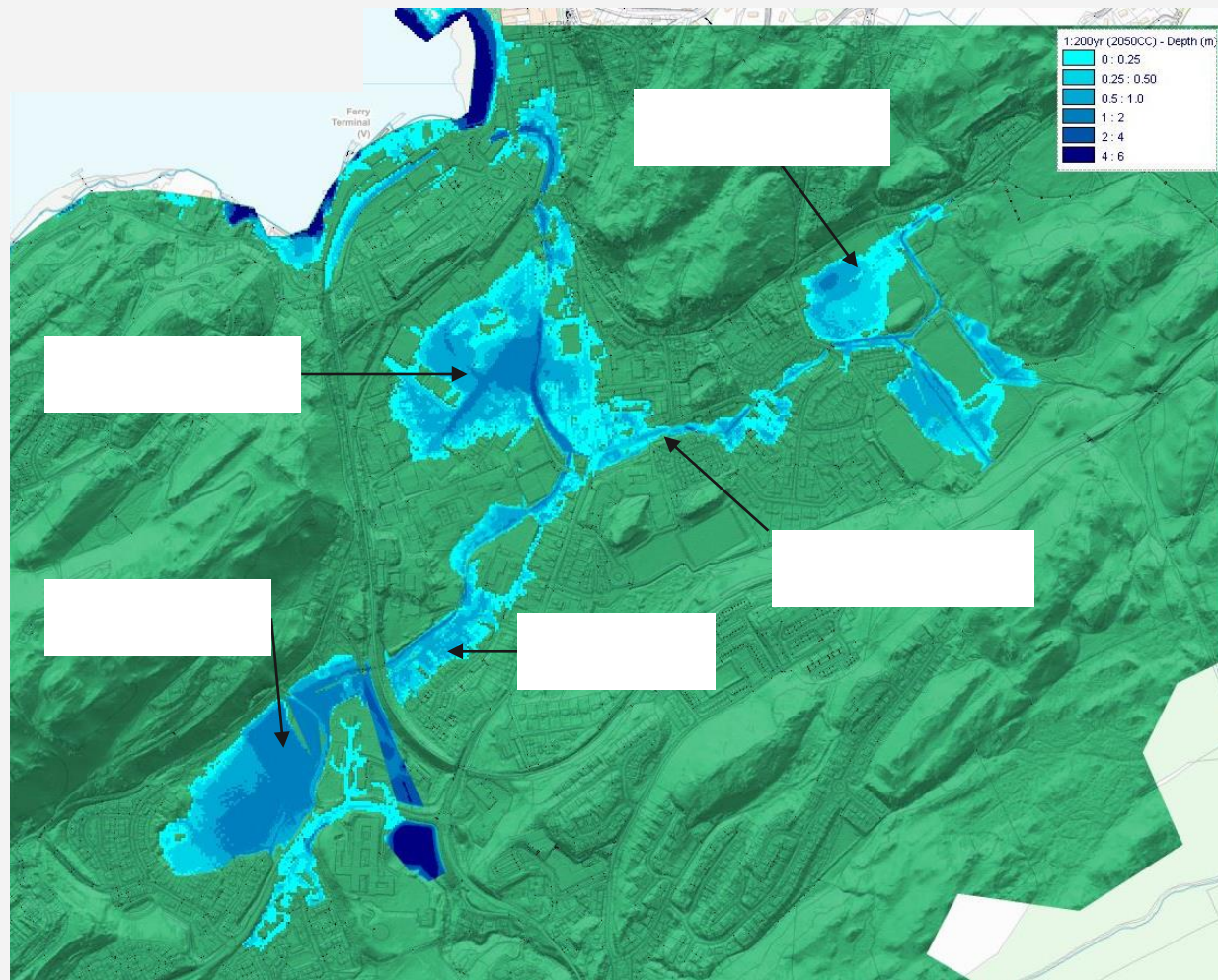
Network  
Rail





# Sources of Flooding





## Historic Maps



1855 Admiralty Chart



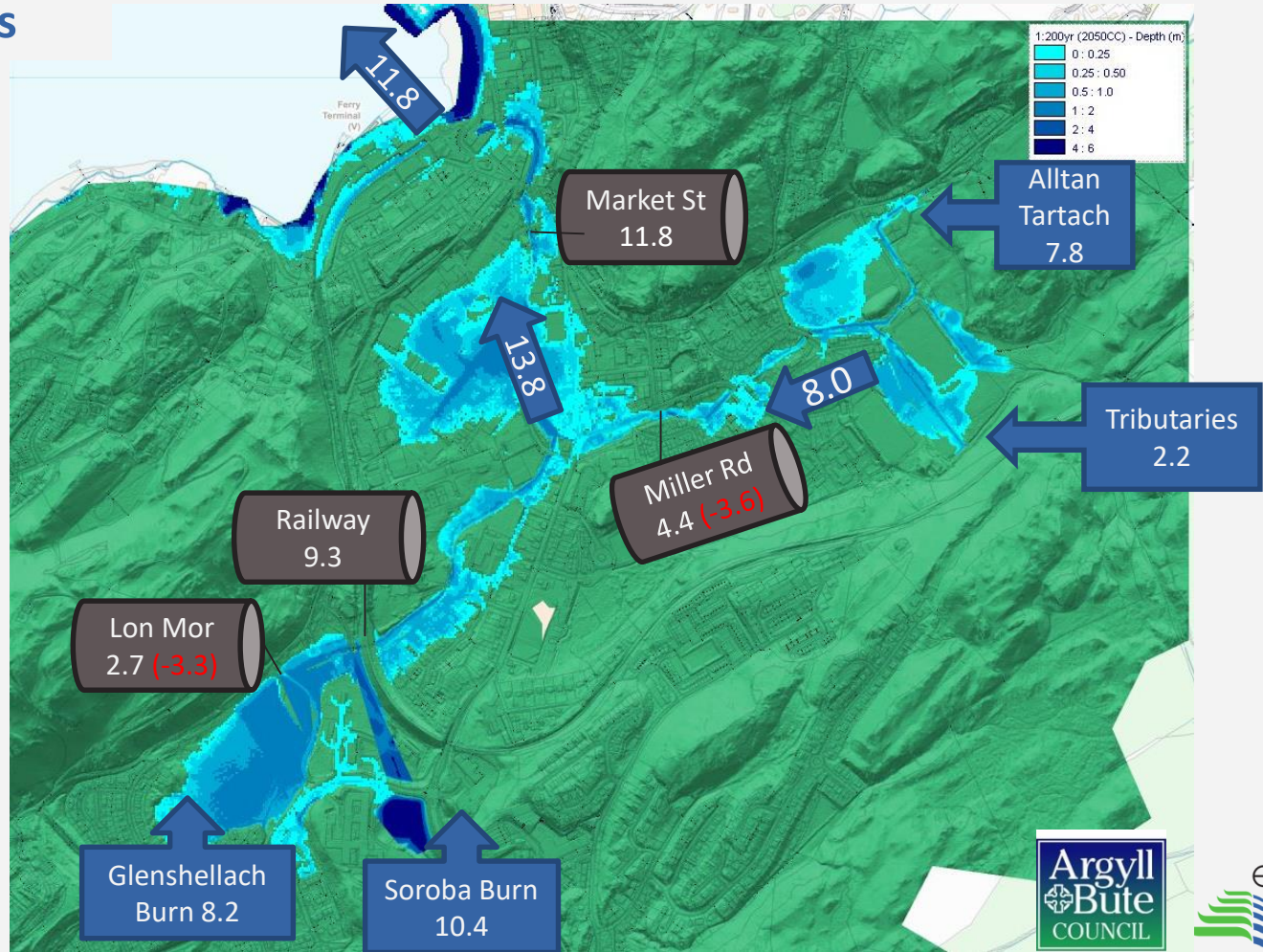
1870 Ordnance Survey

Reproduced with the permission of the National Library of Scotland



# Flood Flows

Cubic metres per second (m<sup>3</sup>/s)



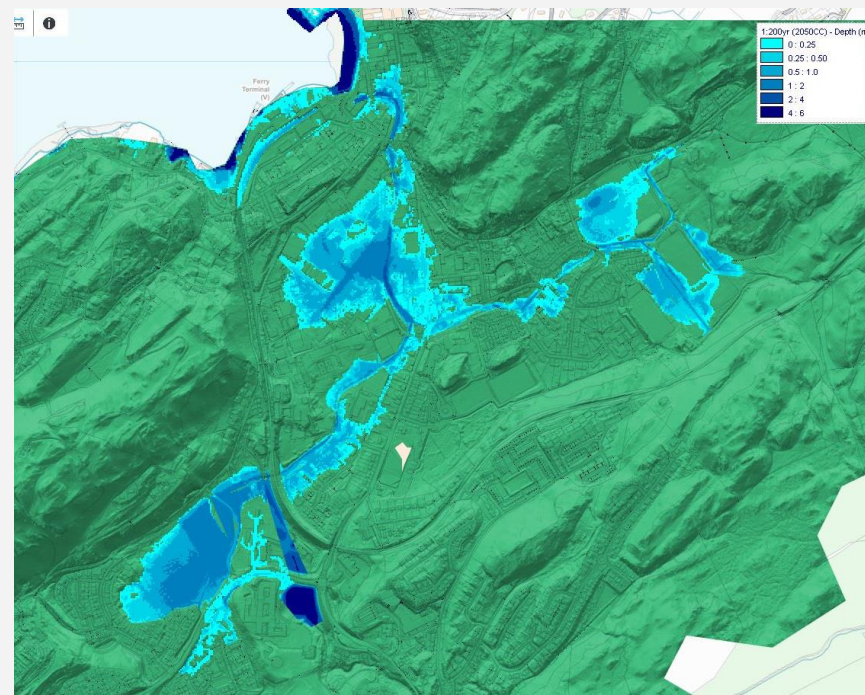
# Flood Risk

## Lifetime Probabilities

Age	Chance of Flooding in Any Given Year		
	1 in 10	1 in 200	1 in 1000
10	65%	5%	1%
25	93%	12%	2%
80	100%	33%	8%

## Map: Climate Change to the year 2100:

- More intense rainfall
- River flows **↑56%**
- Sea Level **↑ 0.89m**



## Impact of Flood Risk



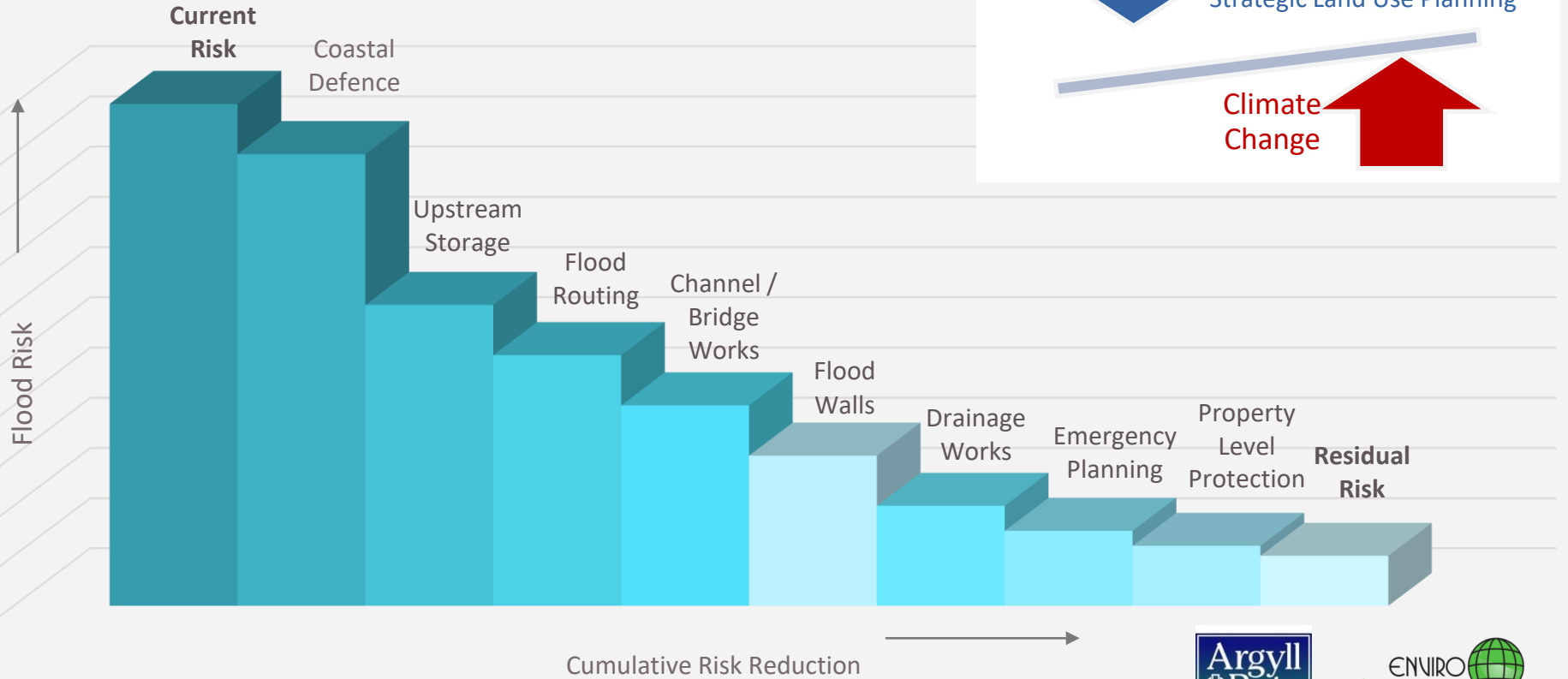
Annual Chance of River Flooding	Properties Flooded
1 in 10	c. 60
1 in 200	c. 160

*Estimates include climate change up to the year 2050*

### Access Flooding:

- A85 (Dunollie Rd / Esplanade / George St)
- A816 (Soroba Rd)
- Glencruitten Rd
- Lynn Rd / Lochavullin Rd
- Longsdale Rd

# Strategic Management



# Range of Options Considered

- Upstream Storage
- Channel / Bridge Capacity
- Routing of Floodwater
- Flood Defences
- Drainage Improvements
  - *e.g. maintenance, basins, swales, bigger pipes*
- Adaptation & Resilience
  - *e.g. flood-resilient buildings, flood gates, community action plans*



# Long-List

Coastal Defences

Tidal Barrage / Reefs

Flood Diversion  
(e.g. Railway)

Reservoir  
Management



**Legend**

- Coastal Defences
- Wetland Restoration
- Woodland Planting
- Riverside Buffers
- Temporary Flood Storage Areas
- Peat Restoration / Soil Management
- Reservoir Management
- Other Flood Study
- Long List Options

**DRAFT**

Project: 170258-001

Date: 14.05.2010

Scale: 1:50,000

Author: ENVIRO Centre

Peat Restoration /  
Soil Management

Wetland Restoration

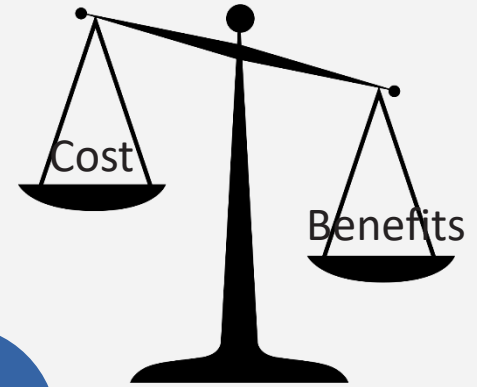
Temporary  
Flood Storage  
Areas

Woodland  
Planting

Riverside  
Buffers



# Short-listing of Options



Priorities

High Impact:

- *More properties ('hotspots')*
- *Most vulnerable*
- *Essential services*

High Benefit-Cost Ratio

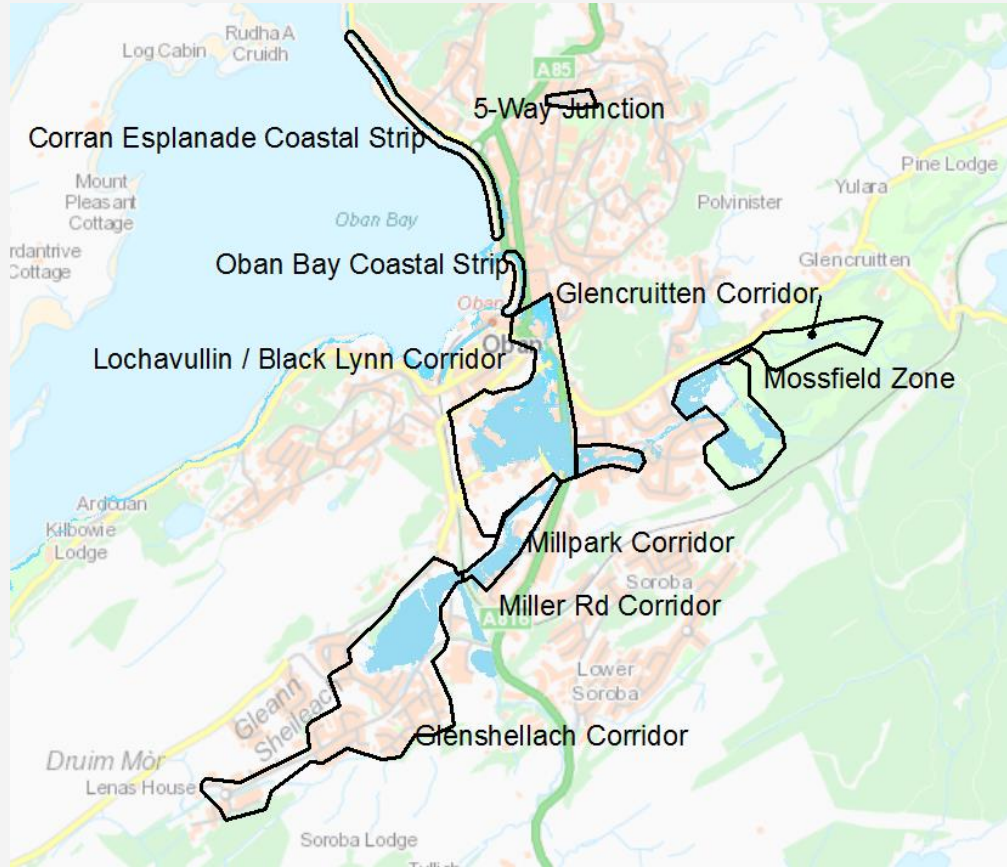
Strategic Clusters:

- *Flood Management Zones / Corridors*

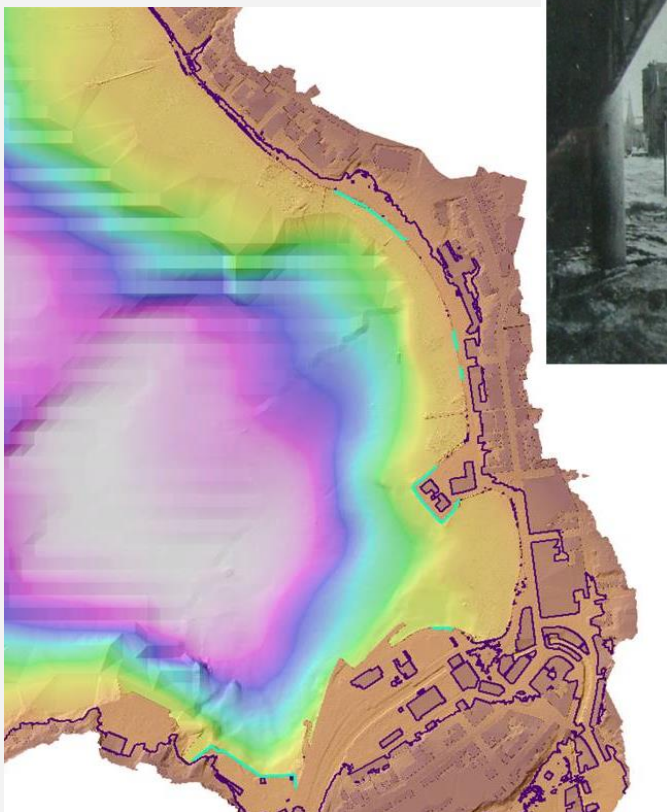
Multiple Benefits

No Land Use Conflicts

# Flood Management Zones



# Oban Bay & Corran Esplanade



*Esplanade, 1960s*



## Coastal defence

- Permanent / demountable
- Current location / reclamation
- Adaptability
- Multi-functional uses

# Example Coastal Flood Defences



Flood Gate & Transparent Panels

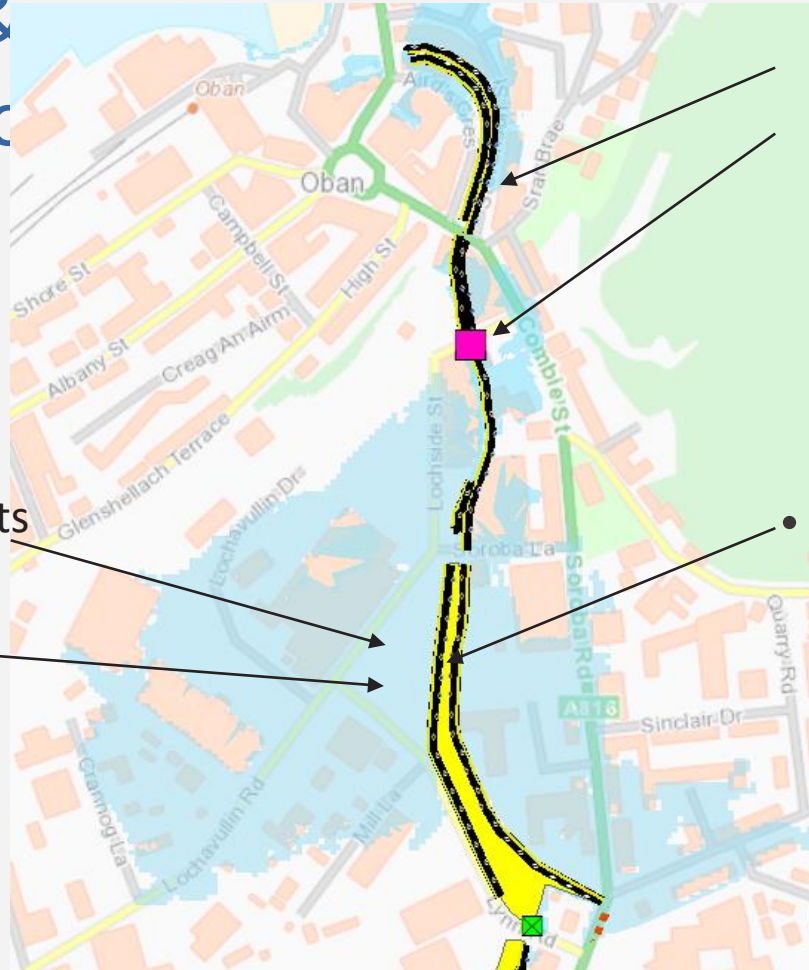


Embankment (Multi-functional space)



Demountable Property Level Protection

# Lochavullin & Black Lynn Co



- Drainage Improvements
- Pumping
- Long-term Planning Strategy

Flood Walls  
Market Street Bridge  
Widening



Channel Capacity Improvement

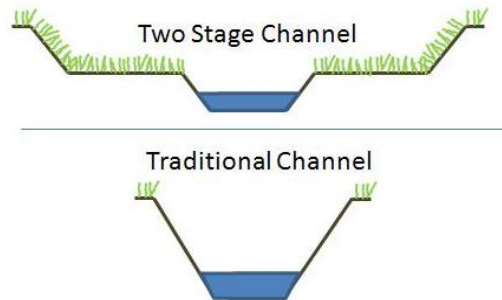


# Channel Improvement Examples

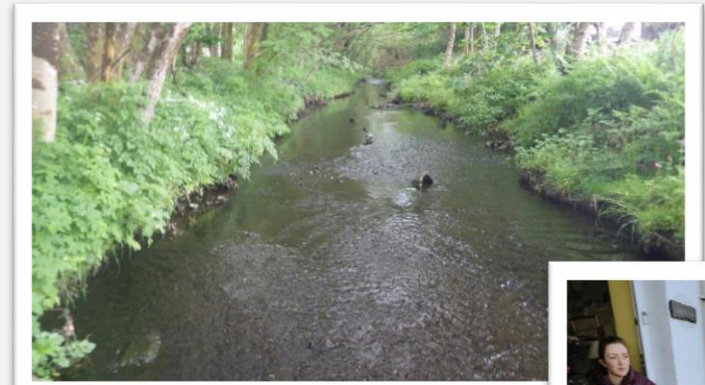
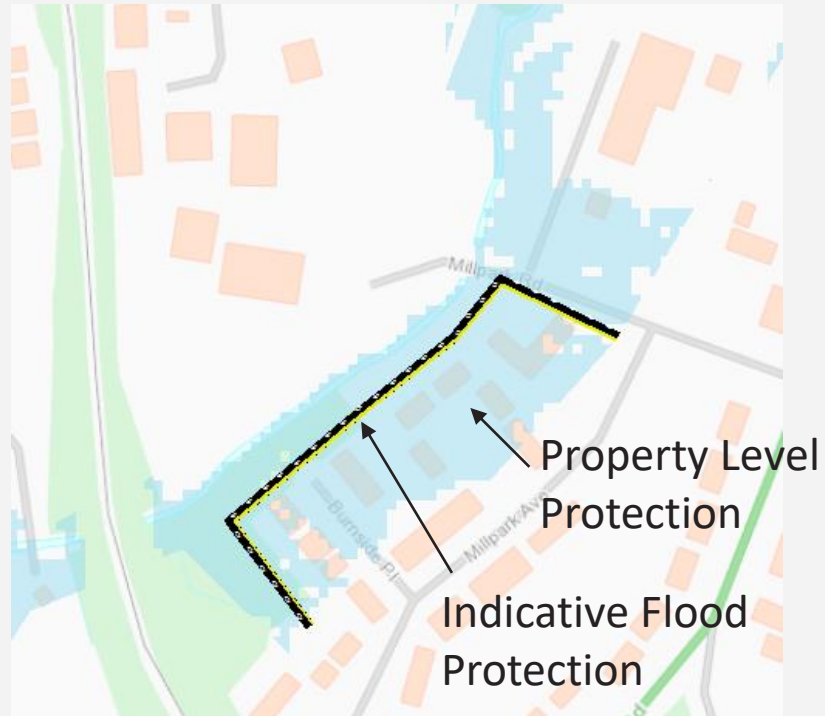
Kilmardinny Burn, Glasgow



Pow Burn, Montrose



# Millpark Corridor





# Glenshellach Corridor

- Temporary Storage in Lon Mor:
  - Floodplain capacity improvement
  - Raise bund (footpath)
  - Constrict outlet



- Drainage improvements



# Mossfield

- Temporary storage
- Multi-functional use



# Miller Road

- Combined with upstream storage in Mossfield
- Flood relief culvert  
OR
- Streetscaping / routing along along Miller road



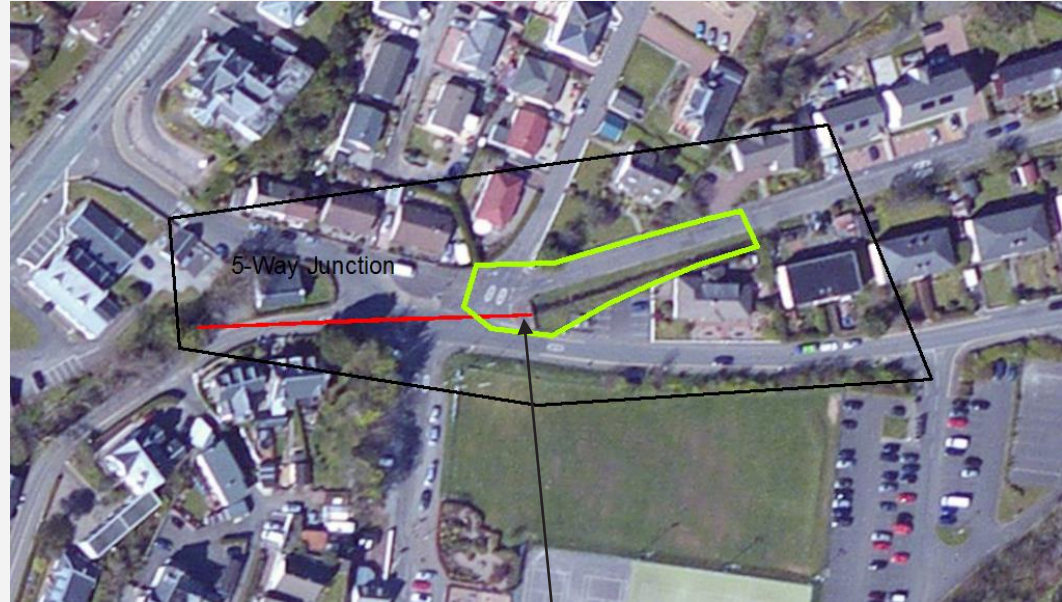
# Glencruitten Corridor

- Temporary Storage
- Natural Flood Management
- Multi-functional use



# 5-way Junction

- Short-term:
  - Maintenance
  - Temporary storage
  - Streetscaping / routing along road
  - Access diversions & local property protection
- Long-term:
  - Structural upgrades



# Flood Management Strategy

## Long-term Adaptation

- Catchment-wide
- Building resilience
- Adapting to climate change
- *e.g. Sustainable Drainage, Natural Flood Management*

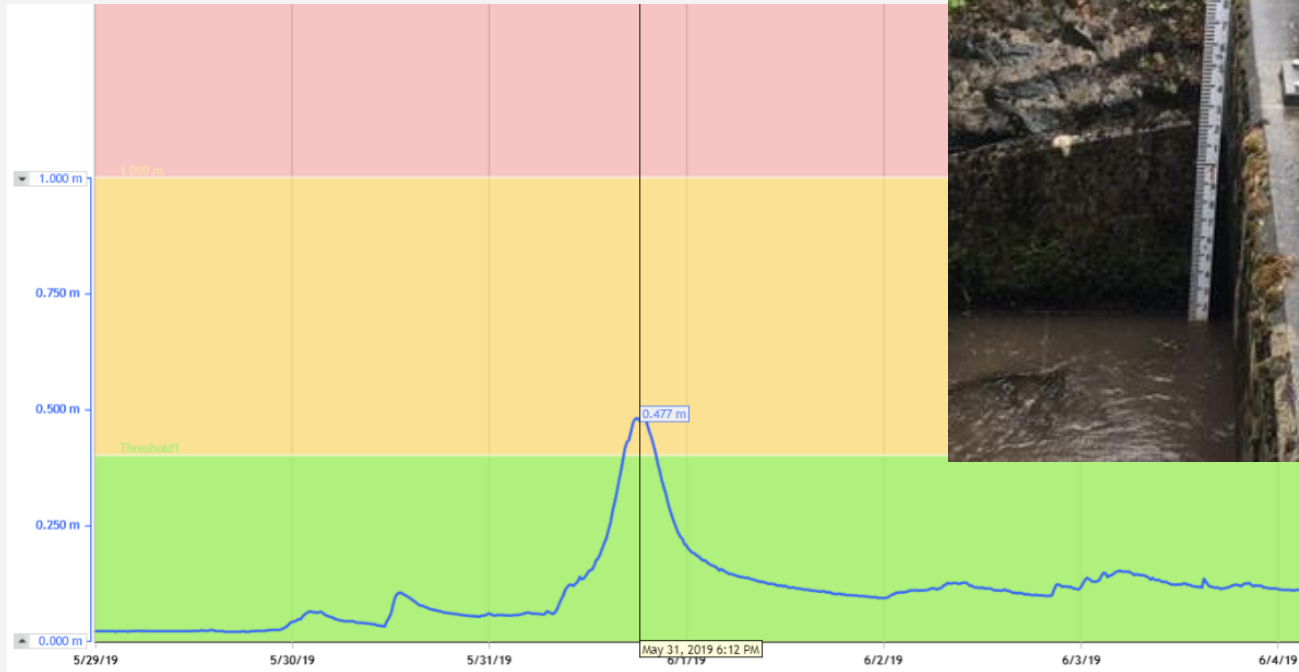
## Short-term Priorities

- Focus on flood risk hotspots
- Defending people & property at most urgent risk
- *e.g. Targeted flood routing / flood walls*



# Short-term: River Level Monitoring

## Black Lynn Water Level Monitoring Station



# Long-term Adaptation: Natural Flood Management

Focus on Upper Catchment

Difficult to quantify

Multiple benefits ('no regrets')

- Native Woodland:

- Woodland planting
- Riverside buffers
- Cross-slope shelterbelts / hedgerows

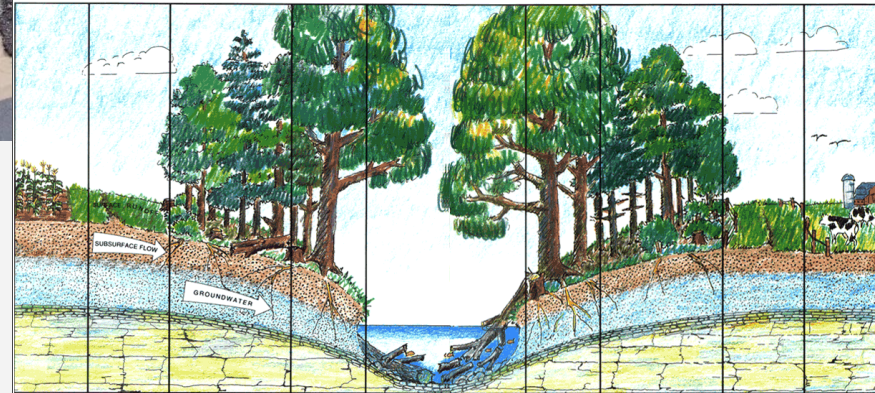


Image: Stroud Water Research Center



## Wetland Restoration:

- Restore blanket peat
- Floodplain wetlands
- Wet woodlands





## Questions & Discussion

- Are priority options being considered appropriate?
- Potential challenges or concerns?
- Suggestions for effective implementation?
- How can the local community help?
- What are the next steps?

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