

# Am I at risk of flooding?

## Crindau Flood History

The dangers of flooding are nothing new to the community of Crindau. The low lying area has flooded a number of times in the past. Most notably in 1981 when 500 homes and businesses were affected, and more recently, extensive flooding was only very narrowly avoided!

### 1981 Flooding

On December 13th 1981 a storm surge and high tides coincided to cause extensive flooding of Crindau.

- 500 homes and business flooded
- Average depth of flooding 300mm. Chest high in some areas.
- Tide level of 8.4mAOD recorded at Newport Docks

#### **COLD, WET, WINDY** What's next? we ask



From page 1  
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Hundreds flee freak flood

PICTURES: Peter Dash, David

### 2014 Flooding

At 8:30am January 3rd 2014 tide levels reach 8mAOD at Newport Docks causing minor flooding of Crindau. The event was just inches away from causing far more extensive flooding!

- Estimated to be a 1 in 10 year event
- Evacuation warnings given to many homes
- Sandbags deployed to prevent overtopping of low spots
- 6 homes and businesses flooded
- Alderney Street flooded to around 300-400mm



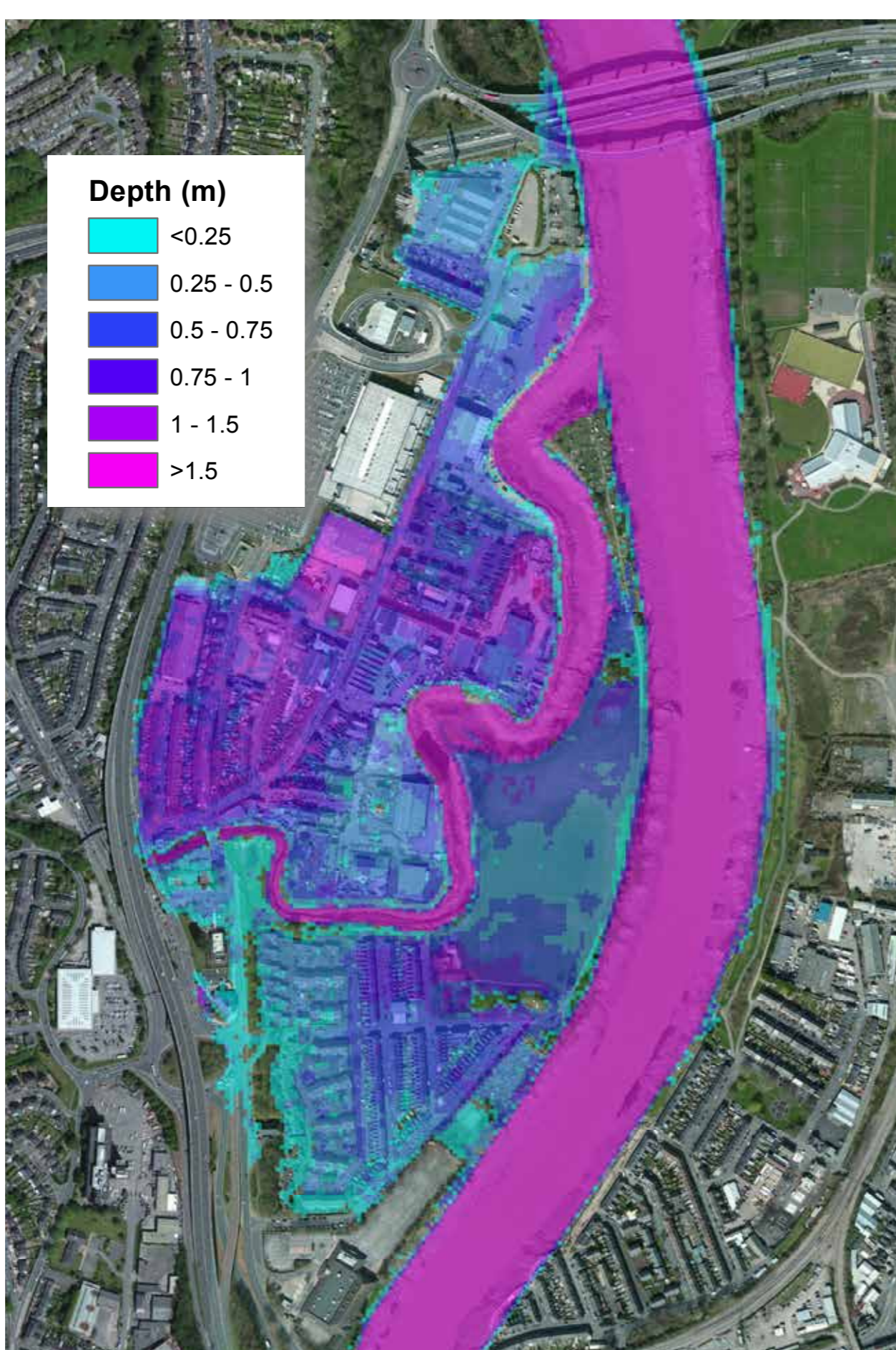
## Present Day Flood Risk

The Crindau area is presently protected by a number of walls and embankments, many of which are in a poor condition.

Detailed flood modelling carried out by Natural Resources Wales estimates that Crindau can expect to see extensive flooding on average once in every ten years.

We predict that a 1 in 200 year event, as show in the map to the right, would flood 650 properties and cause damages of **£45 million**.

Annual average damages are estimated at **£1.3 million**.



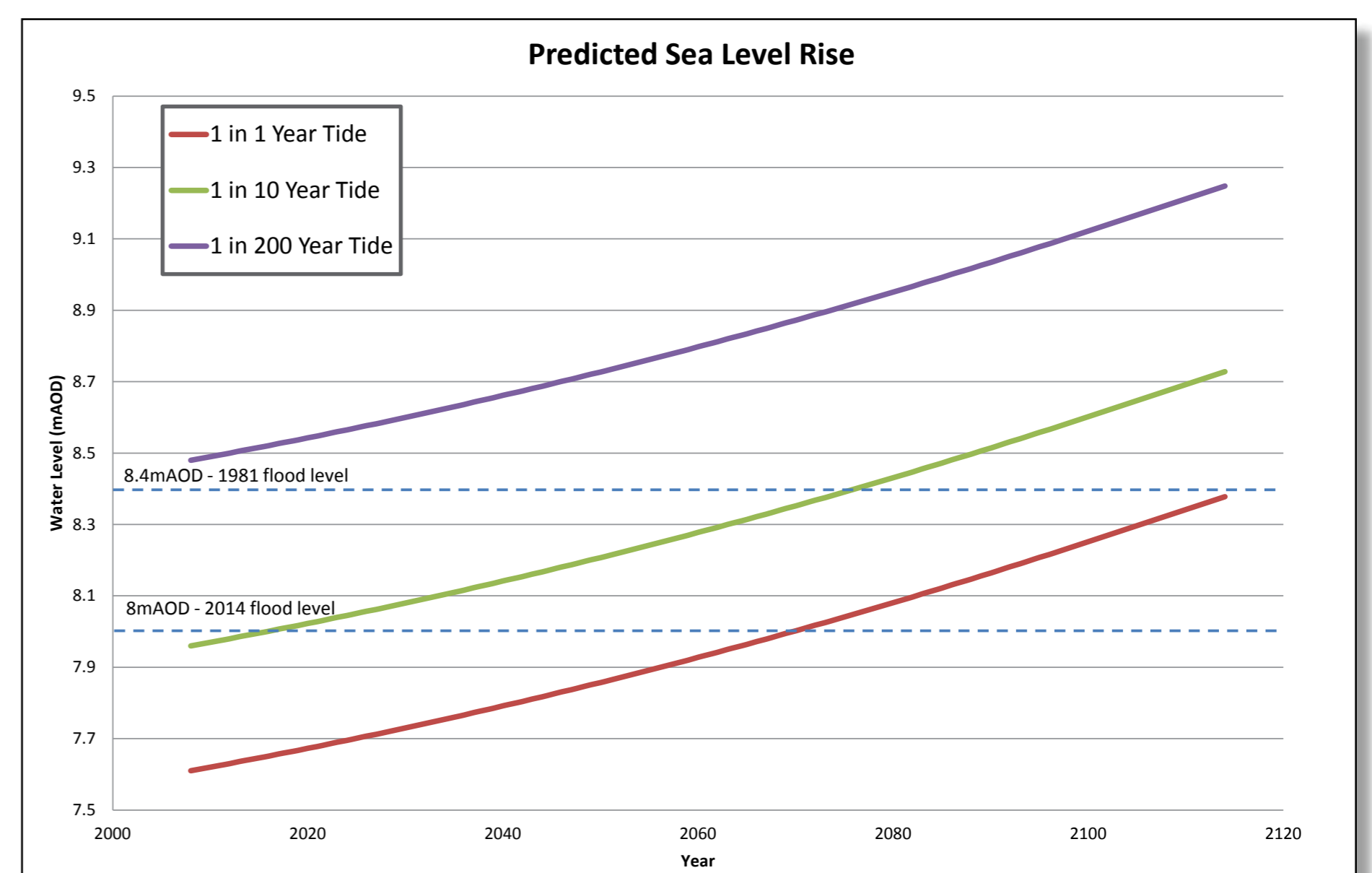
## Future Flood Risk

Sea levels are increasing as a result of climate change. This will increase the frequency and severity of flooding.

The flooding that occurred in 1981 was approximately a 1 in 100 year event. However this may become an annual occurrence by 2114!

There may be over 1100 homes and businesses at flood risk in the Crindau area by 2114

The proposed flood defences for Crindau will be designed to account for and adapt to climate change.

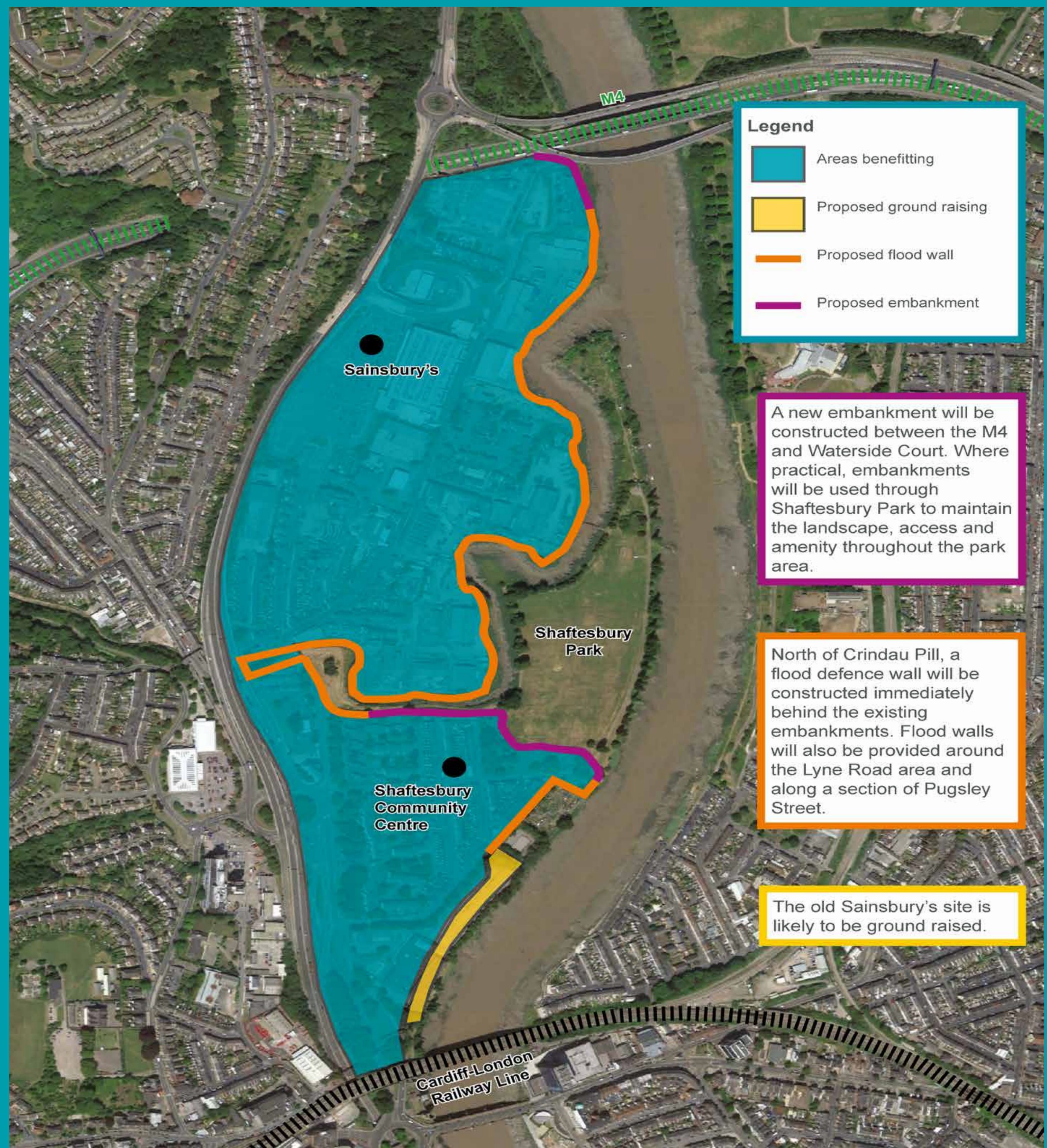


# What is the proposed solution?

## Scheme Overview

The proposed Natural Resources Wales scheme will extend along the banks of the River Usk and Crindau Pill between the M4 motorway south down to the London to Cardiff railway line.

The scheme will be made up of multiple components, including walls, embankments and ground raising. Following careful consideration of the feasibility, costs, benefits and impacts, the preferred option is to construct the new defences to provide protection against a 1 in 200 year event, including an allowance for effects of climate change over the next 50 years. The design will also be adaptive, so that it can more easily be 'topped up' in the future if required.



## What has informed our design?

### Environment

- The River Usk is an important wildlife site and has a high level of environmental protection
- The Crindau Pill is home to protected reed beds and is sometimes visited by otter
- Japanese Knotweed, a non-native, invasive species, is prevalent along areas of Crindau Pill
- There are a lot of large, mature trees (some protected) throughout Crindau
- Ground contamination has been found in many locations

### Community

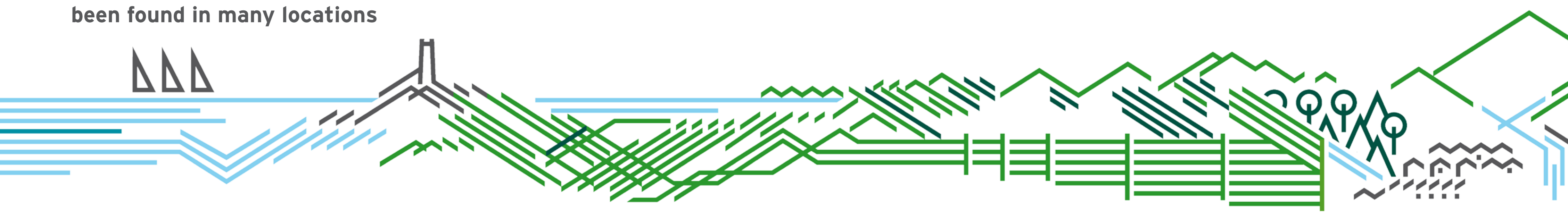
- Crindau is a built up area with limited space between riverbanks and properties
- Some properties are immediately adjacent to the riverbank
- Residential properties will be close to proposed construction works
- Lyne Road Bridge is one of only two vehicle access routes into north Crindau
- Awareness of flood risk may be low

### Recreation

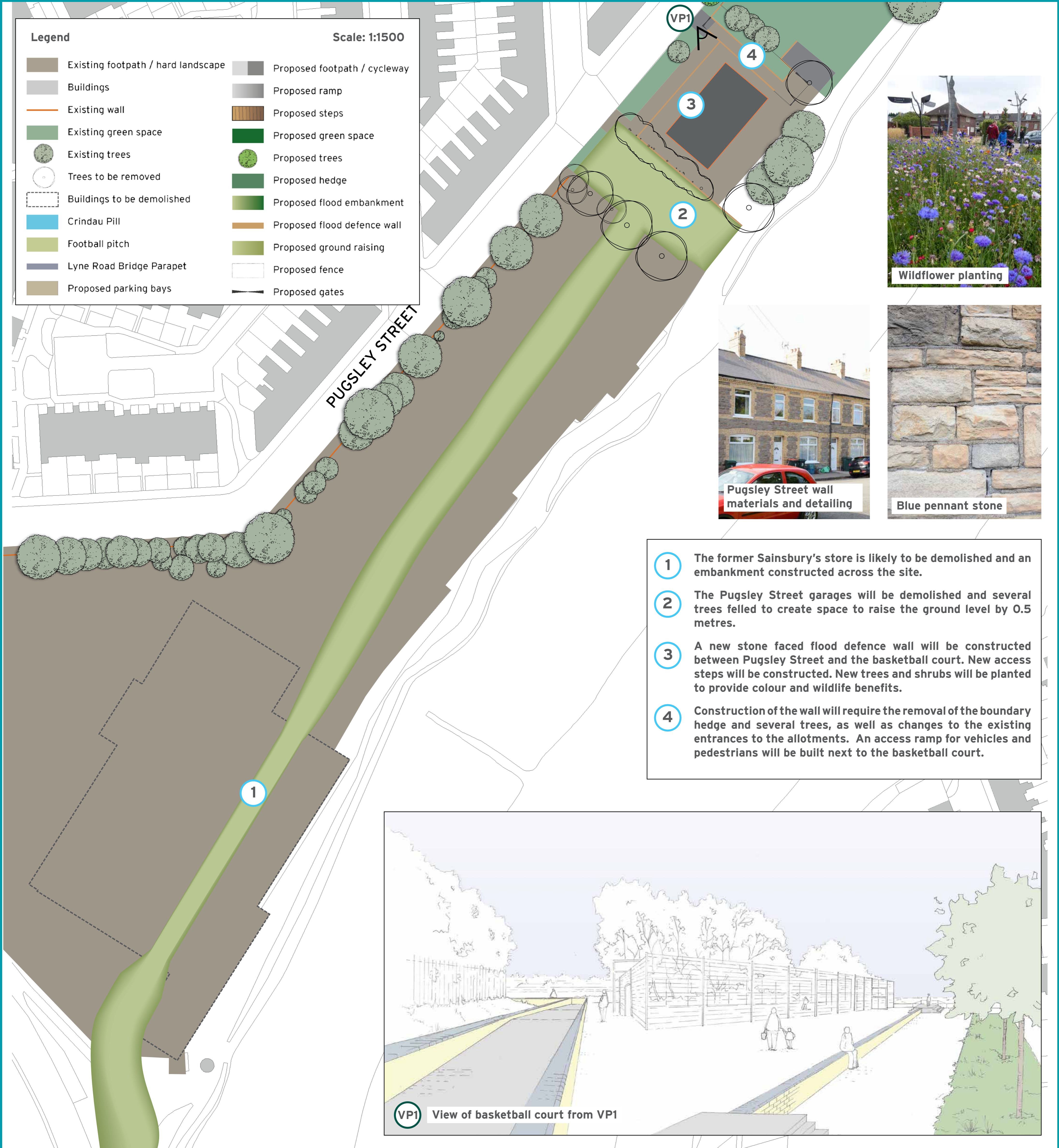
- Shaftesbury Park is an important community facility used for sport, events and general recreation
- There have been recent improvements to the children's play area
- Busy footpaths and cycleways pass through the Park
- There is a well-used allotment along Pugsley Street
- There is an all-weather basketball and football area on Pugsley Street

### Flood Risk

- There is a significant tidal range
- Tidal events are typically well forecast
- Poor ground condition may force flood water under raised defences
- High tides can cause surface water systems to back up
- Climate change may significantly increase flood risk



# Scheme Design

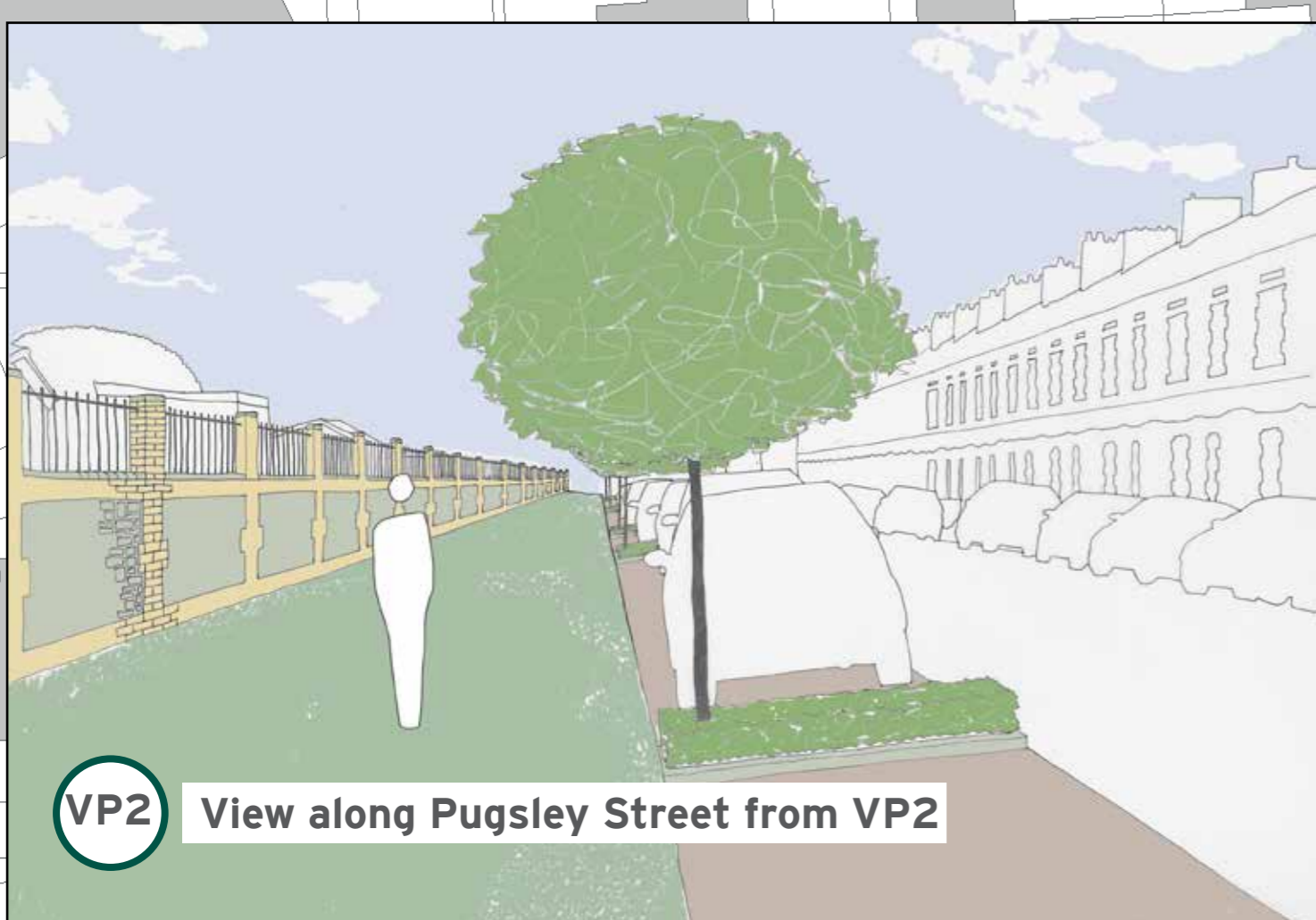


# Scheme Design

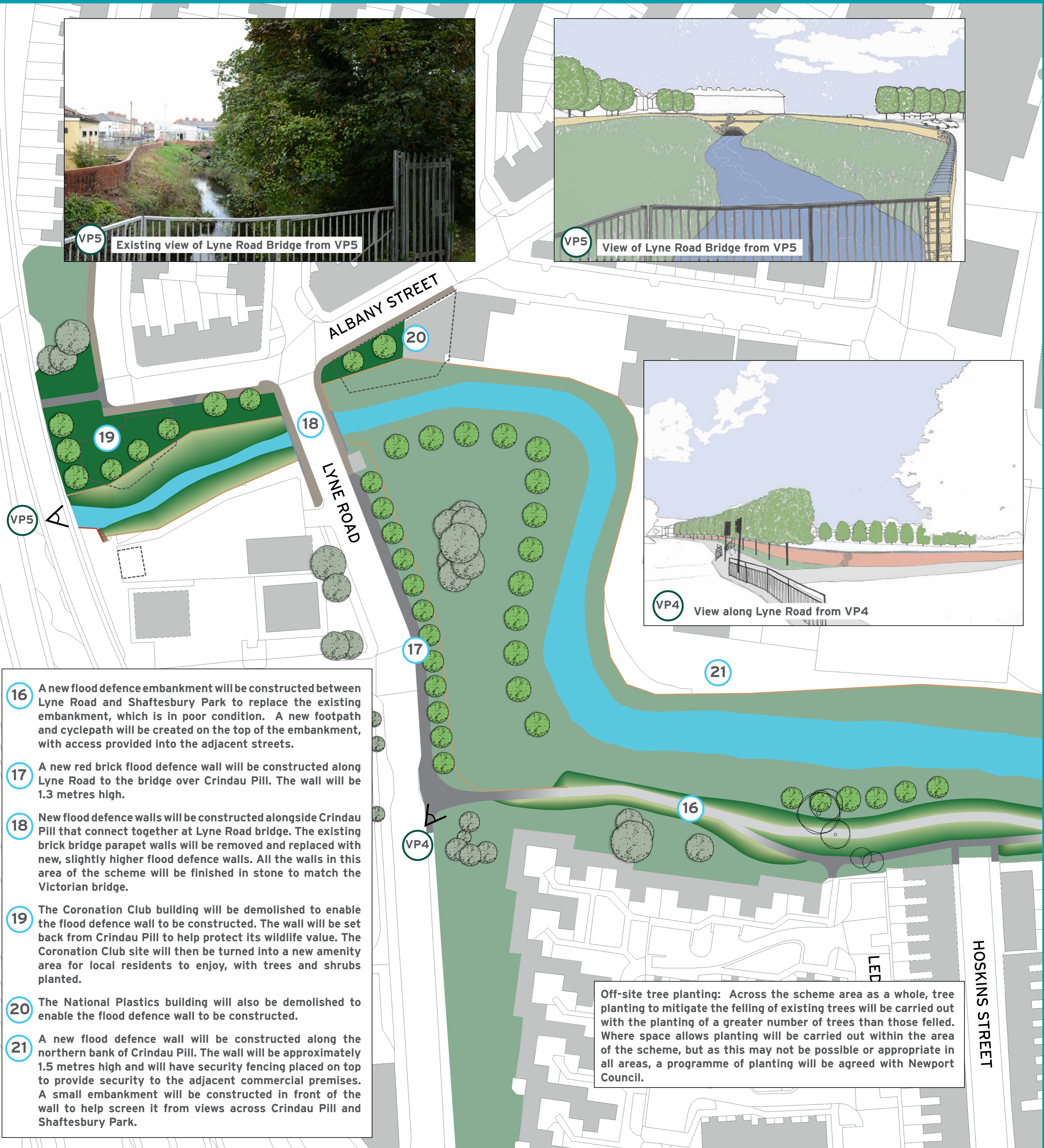
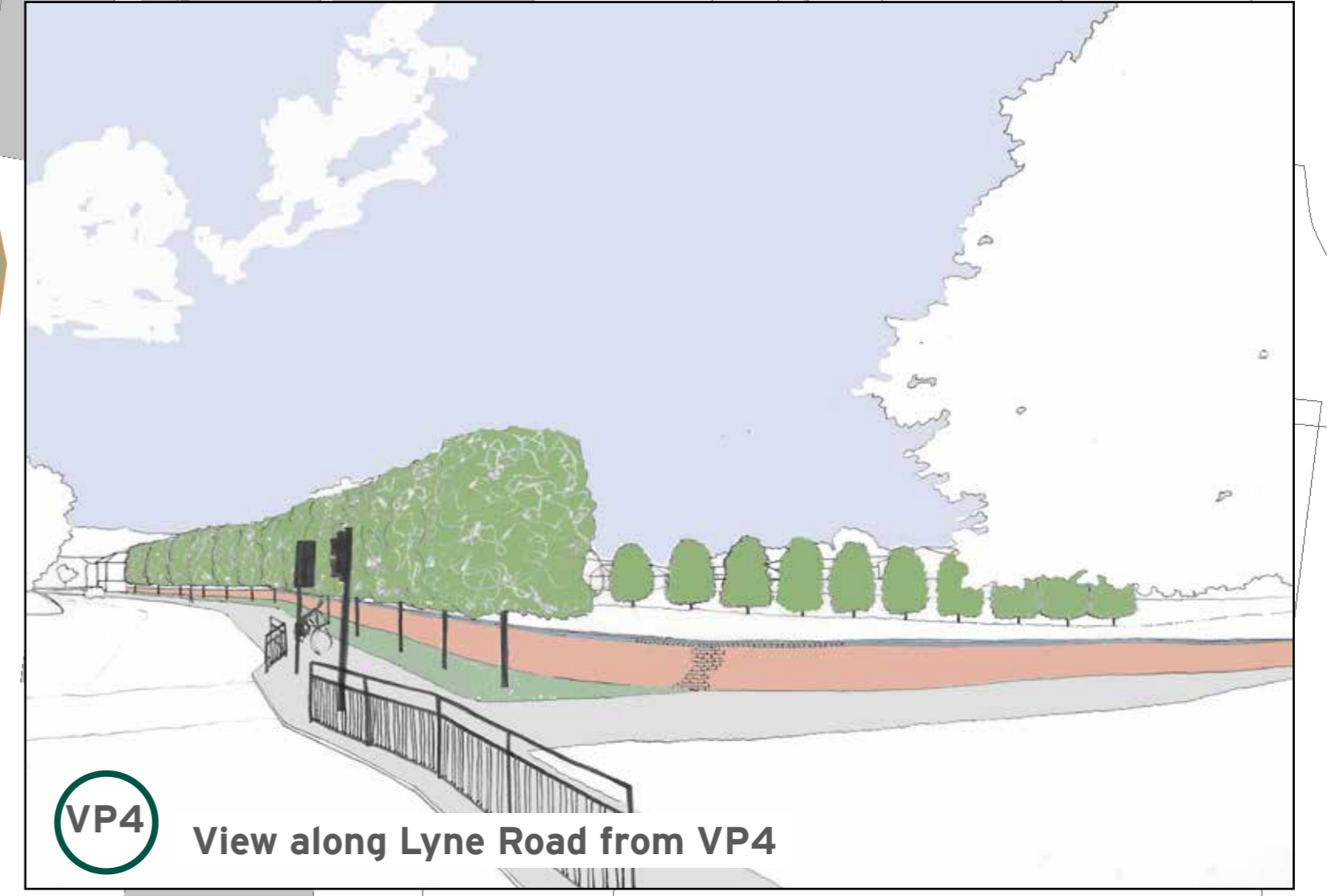
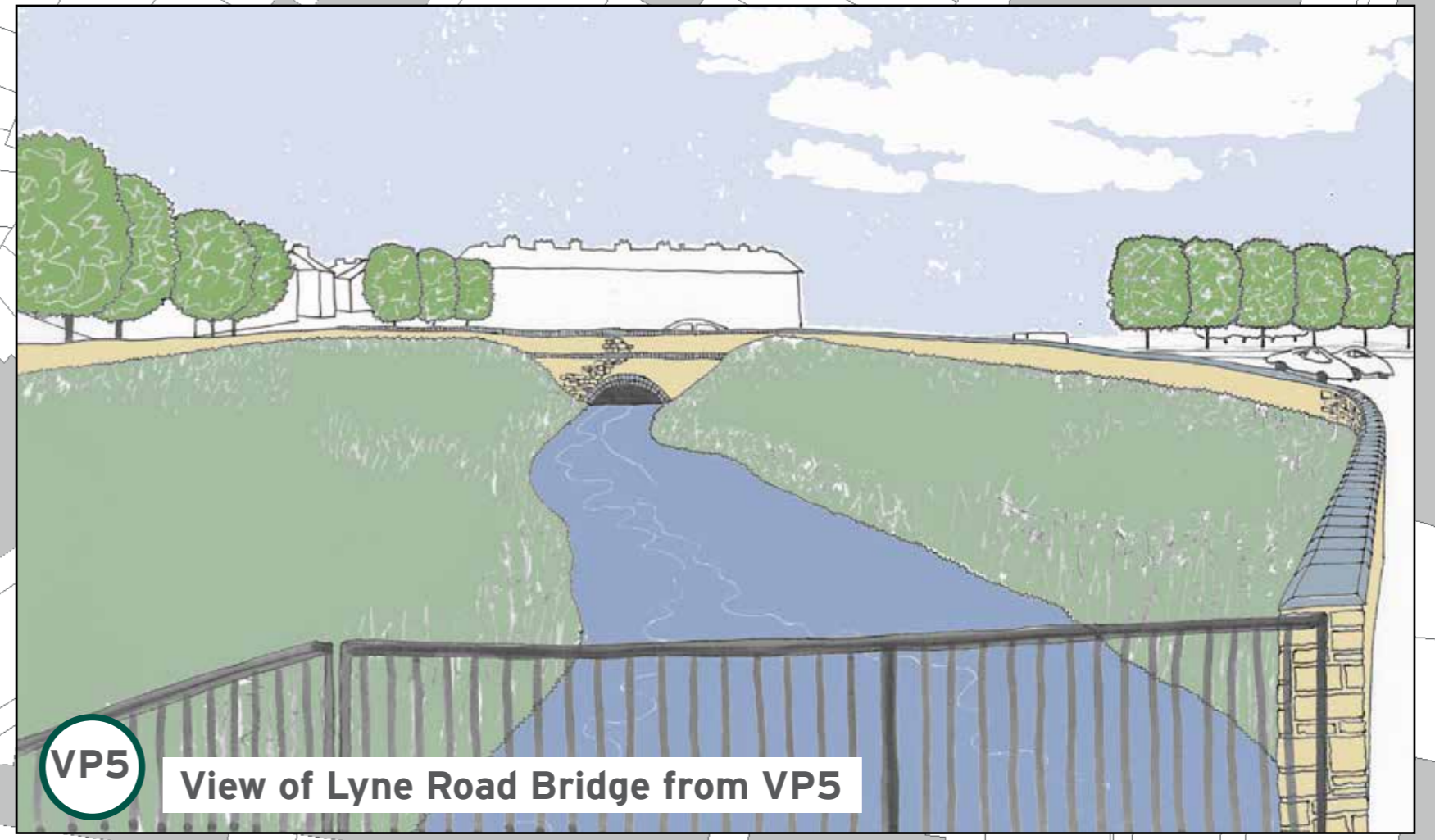
- 5 A new stone faced flood wall 1.5 metres high will be constructed alongside the allotments. Railings will be mounted on top of the wall for security. Trees will be planted in a series of new planting areas created along Pugsley Street.
- 6 New steps will be provided to enable pedestrian access into the allotments.
- 7 A flood defence wall will be constructed around the children's play area and will be buried for almost all of its length and will not be visible above ground.



- 8 Where the flood defence wall is visible, it will be clad in red brick to match the existing wall in the play area.
- 9 Several trees will need to be felled to enable the flood defence wall to be constructed. The largest tree in the play area, a London plane, will be protected. New flower beds will be created and new seating provided so that park users can enjoy views of the River Usk.
- 10 A new flood defence embankment approximately 1.5 metres high will be created between the play area and the entrance to the Park off Lyne Road. The footpath and cyclepath will be placed on the top of the embankment.
- 11 New access steps and a ramp will be constructed to enable people to access the football pitches from the changing rooms. New grassed terraces may be created along the embankment next to the football pitches.
- 12 Construction of the flood defence embankment will require the demolition of the disused toilet block and changes to the garden of The Lodge.
- 13 The embankment here will include a small section of wall, which will be finished with red brick to match the surrounding buildings and will include a timber fence placed on top for security.
- 14 The embankment continues between Shaftesbury Park and Lyne Road, replacing an existing flood defence embankment that is in poor condition. Several trees will need to be removed to enable the embankment to be built, but these will be replaced with new trees to create a picturesque avenue into the park.
- 15 Public access to the neighbouring streets will be maintained by new footpaths onto the embankment.



# Scheme Design



- 16** A new flood defence embankment will be constructed between Lyne Road and Shaftesbury Park to replace the existing embankment, which is in poor condition. A new footpath and cyclepath will be created on the top of the embankment, with access provided into the adjacent streets.
- 17** A new red brick flood defence wall will be constructed along Lyne Road to the bridge over Crindau Pill. The wall will be 1.3 metres high.
- 18** New flood defence walls will be constructed alongside Crindau Pill that connect together at Lyne Road bridge. The existing brick bridge parapet walls will be removed and replaced with new, slightly higher flood defence walls. All the walls in this area of the scheme will be finished in stone to match the Victorian bridge.
- 19** The Coronation Club building will be demolished to enable the flood defence wall to be constructed. The wall will be set back from Crindau Pill to help protect its wildlife value. The Coronation Club site will then be turned into a new amenity area for local residents to enjoy, with trees and shrubs planted.
- 20** The National Plastics building will also be demolished to enable the flood defence wall to be constructed.
- 21** A new flood defence wall will be constructed along the northern bank of Crindau Pill. The wall will be approximately 1.5 metres high and will have security fencing placed on top to provide security to the adjacent commercial premises. A small embankment will be constructed in front of the wall to help screen it from views across Crindau Pill and Shaftesbury Park.

**Off-site tree planting:** Across the scheme area as a whole, tree planting to mitigate the felling of existing trees will be carried out with the planting of a greater number of trees than those felled. Where space allows planting will be carried out within the area of the scheme, but as this may not be possible or appropriate in all areas, a programme of planting will be agreed with Newport Council.

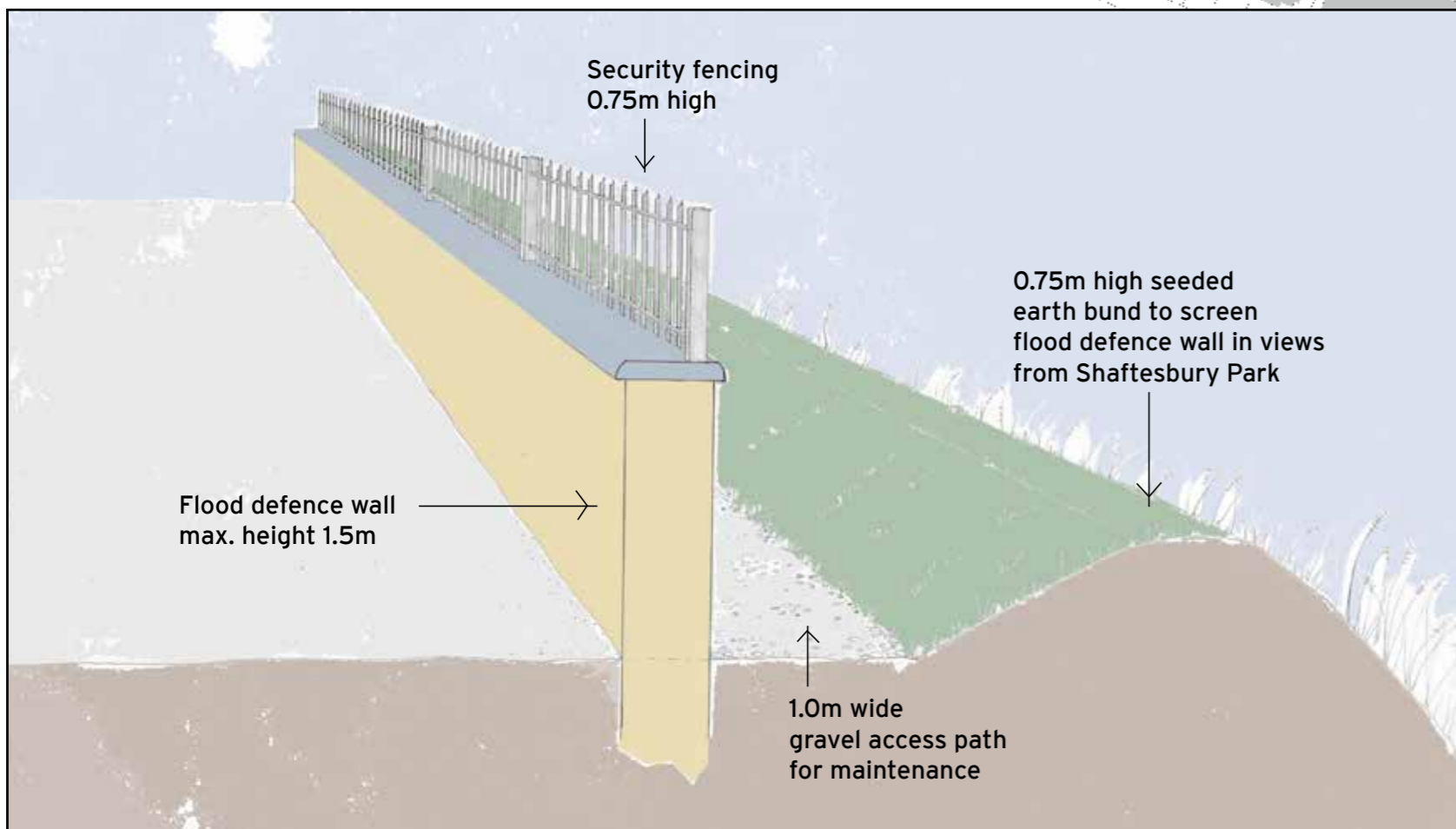


# Scheme Design

**22** A new flood defence wall will be constructed along the northern bank of Crindau Pill. The wall will be about 1.5 metres high and will have security fencing placed on top to provide security to the adjacent commercial premises. A small embankment will be constructed in front of the wall to help screen it from views across Crindau Pill.

**23** Where Crindau Pill meets the River Usk, a 0.25m flood defence wall will be constructed along the western bank of the River Usk to the M4 road bridge. The wall will be faced in yellow brick to match the buildings at Waterside Court.

**24** An embankment will be constructed to tie into higher ground by the M4 road bridge and the low wall in front of Waterside Court. The existing cyclepath will continue up and over the embankment.



## Legend

Scale: 1:1000

	Existing footpath / hard landscape		Proposed footpath / cycleway
	Buildings		Proposed ramp
	Existing wall		Proposed steps
	Existing green space		Proposed green space
	Existing trees		Proposed trees
	Trees to be removed		Proposed hedge
	Buildings to be demolished		Proposed flood embankment
	Crindau Pill		Proposed flood defence wall
	Football pitch		Proposed ground raising
	Lyne Road Bridge Parapet		Proposed fence
	Proposed parking bays		Proposed gates

## Environmental enhancements

We hope that as part of the flood defence scheme we will deliver a range of environmental enhancements. These include:

- New tree and shrub planting.
- Creation of new grassed terraces in Shaftesbury Park to enable spectators to watch football matches.
- Improvements to the appearance of Lyne Road bridge.
- Creation of a new public amenity area on the Coronation Club site.
- Improvements to the former allotments site in Shaftesbury Park to create a nature reserve.
- Installation of bird and bat boxes to benefit local wildlife.
- Opportunities to include public art features around the flood defences.



# What happens next?



Natural Resources Wales plan to finish working on the detailed design for the scheme and then submit a planning application to Newport City Council in mid-December 2014. This is one of several permissions required to enable the scheme to be built.

We hope to secure planning permission by April 2015 after which we will tender for and appoint a contractor to build the scheme. Once all permissions have been obtained, and a contractor appointed, work on constructing the scheme can then begin. We currently anticipate construction would start in late 2015 and take 12 to 18 months to complete.

For the latest news and updates on the Crindau flood alleviation scheme please visit the NRW Crindau webpage at:  
<http://naturalresourceswales.gov.uk/about-us/our-projects/crindau-flood-alleviation-scheme>



## Tell us what you think...

It is important to us that we hear and take on board your views. Members of the project team are on hand to answer any questions and record any feedback and suggestions that you may have.

We would be particularly interested on hearing your thoughts on the following:

Did you know Crindau is at risk of flooding?

Have you flooded before?

Do you support the scheme design we've presented here?

Do you have any concerns with the scheme?

Do you think the scheme will enhance or threaten the character of Crindau?

How can we improve on the design?

A number of enhancements will be delivered alongside the scheme. These include cycleway improvements, a new amenity area, seating and bird and bat boxes. Which of these options should be priorities and do you have any additional suggestions?

FOR MORE INFORMATION PLEASE CONTACT MELISSA MAHAVAR-SNOW ON 03000 654369  
OR MELISSA.MAHAVAR-SNOW@NATURALRESOURCESWALES.GOV.UK

