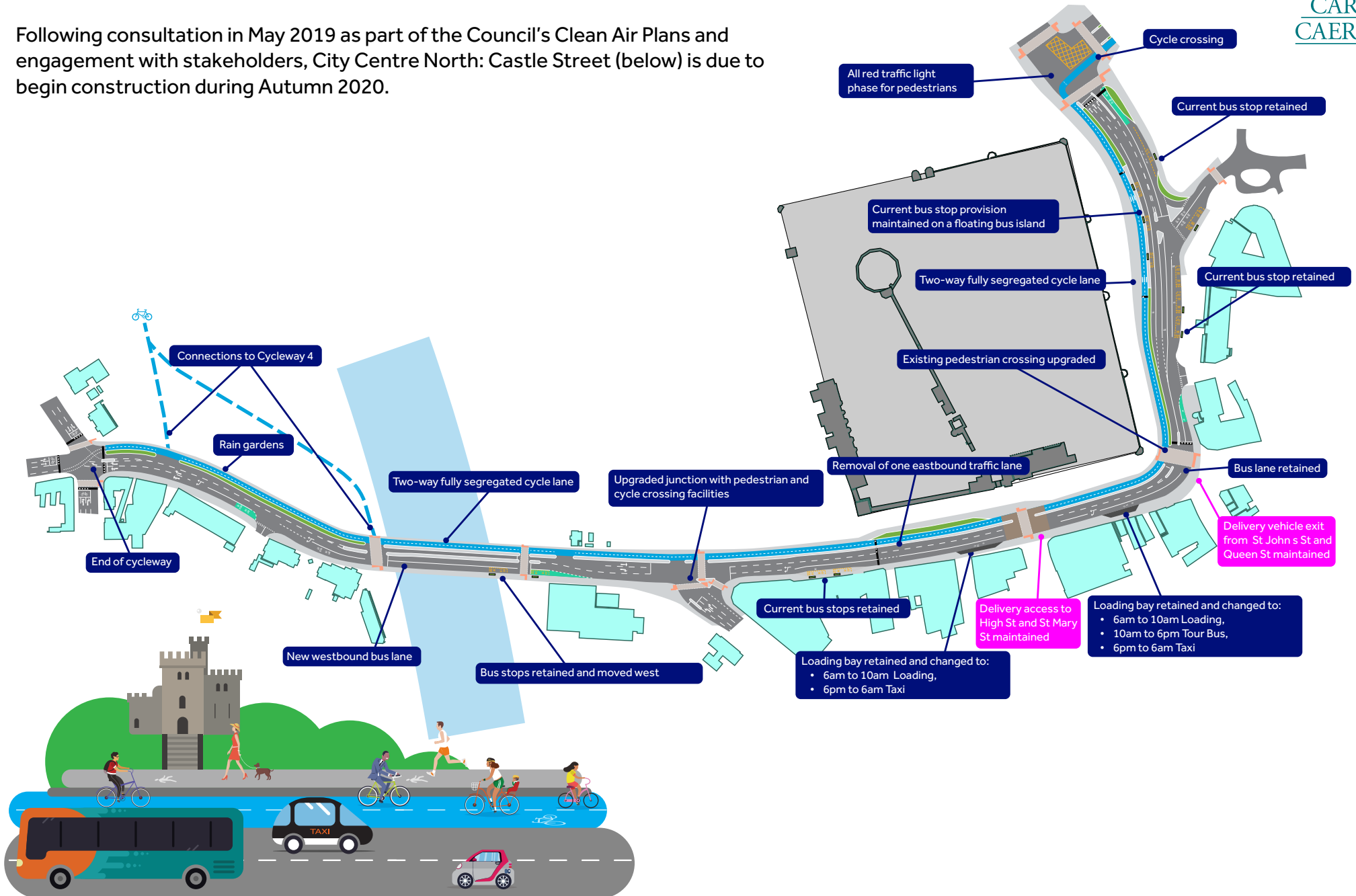


Castle Street

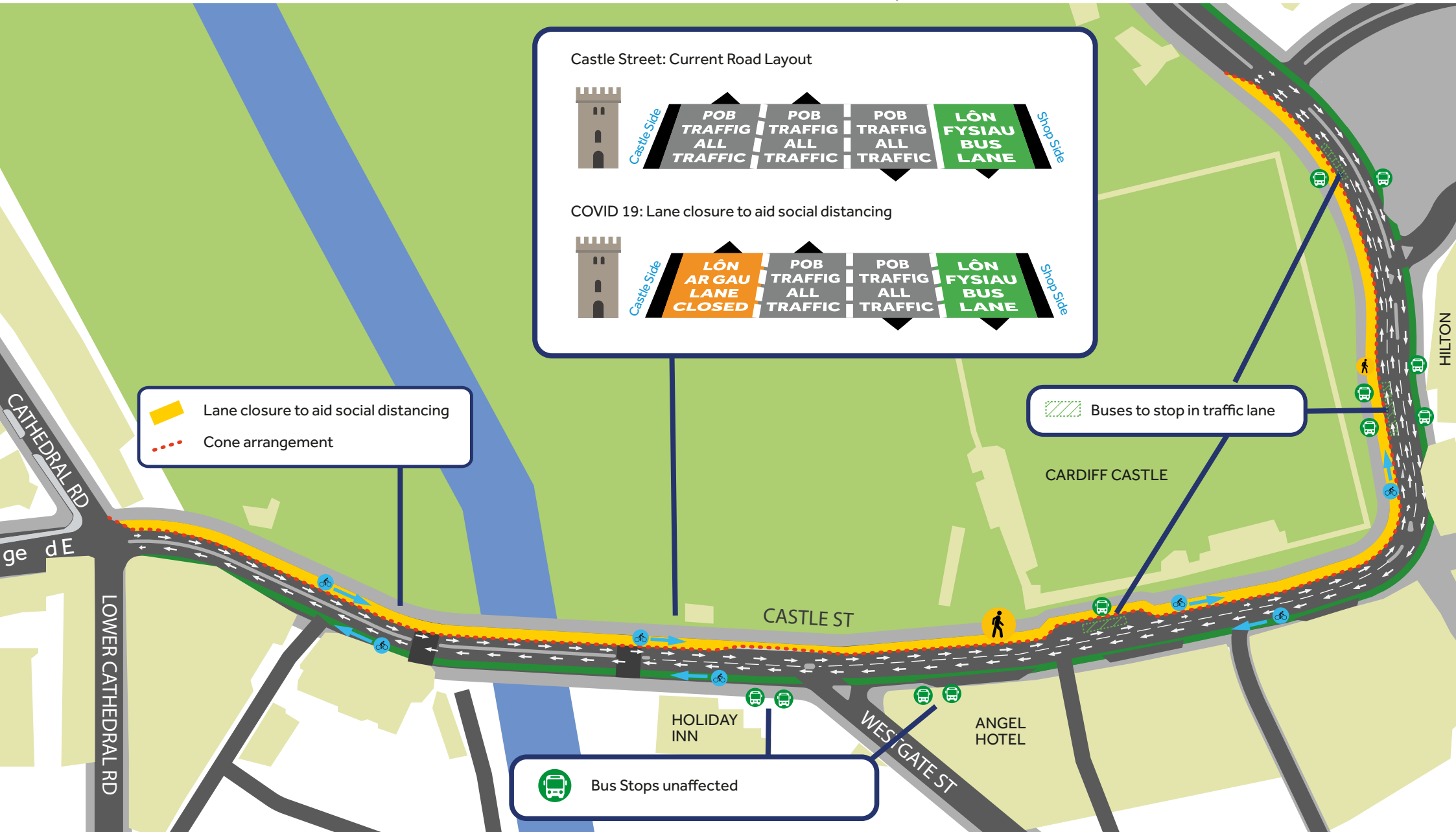
Following consultation in May 2019 as part of the Council's Clean Air Plans and engagement with stakeholders, City Centre North: Castle Street (below) is due to begin construction during Autumn 2020.



Castle Street

This is the current COVID19 Social Distancing Measure in place on Castle Street.

The final construction scheme will take over from this in the Autumn, further information and updates will be sent out in due course.



Castle Street

Details

Improvements for Air Quality and the Environment

- Reduction in traffic will reduce air pollution below legal limits.
- Installation of sustainable drainage and rain gardens.
- Bio-diverse planting on bus stops.

Improvements for Cycling

- New bi-directional segregated cycle lane from Cardiff Bridge to Boulevard de Nantes.
- At Boulevard de Nantes, cyclists will continue onto another bi-directional segregated cycle lane (to be delivered as part of another phase of works) via a cycling-specific traffic light phase.
- At Cardiff Bridge, cyclists will continue on to the Taff Trail or Cycleway 4 to be delivered as part of another phase.

Improvements for Walking

- New signalised pedestrian crossings on all arms of the Boulevard de Nantes junction. The existing underpass on North Road to be replaced with an at-grade crossing point.
- New footway surfacing and public realm improvements.
- New tabled area in front of Cardiff Castle.

Improvements for Buses

- Bus stop layouts modified to include bypasses for cyclists.
- The westbound bus lane will be extended to the west of the junction with Westgate Street towards Cardiff Bridge.
- Current bus lanes retained.
- Reduction in general traffic using the area.

Road Design and Layout

- One eastbound traffic lane, on Castle Street, will be removed to facilitate the new cycle lane.
- The two raised table sections on Castle Street will be merged to create an extended section of raised table.



Castle Street

Improving Air Quality in Cardiff

Air pollution is a local and national problem, Public Health Wales have stated that poor air quality is the most significant environmental determinant of health.

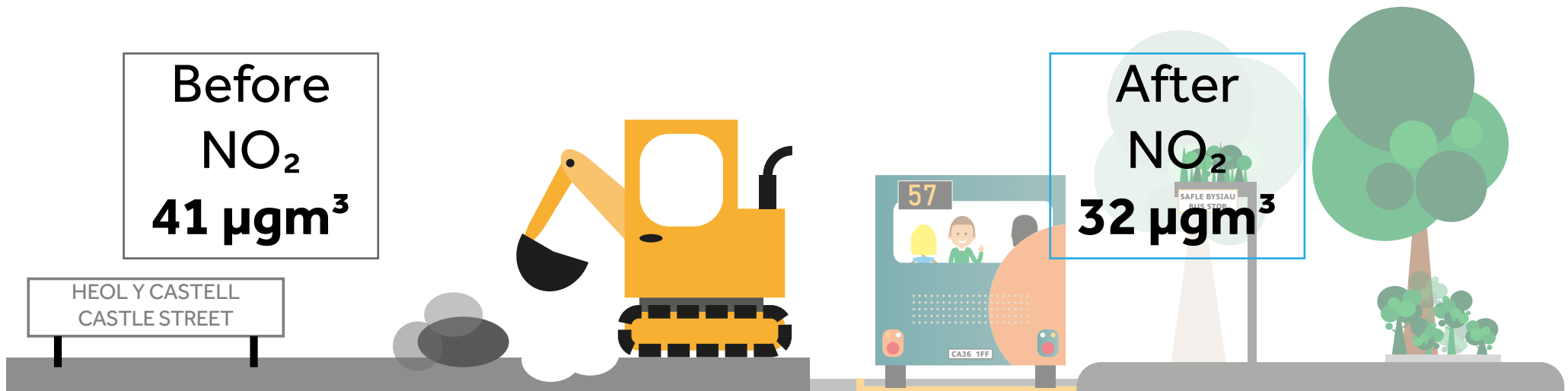
In response to a legal requirement issued by Welsh Government the Council assessed air pollution levels in Cardiff. We identified that levels of nitrogen dioxide (NO₂) on Castle Street would continue to exceed legal limits unless mitigation measures to address the levels of pollution were implemented.

The Council has designed and developed this Scheme with a key objective to ensure that pollution levels on Castle Street comply with legal limits by the end of 2021. This scheme was included in our Clean Air Plan which was approved by Welsh Government at the end of 2019.

The Council will undertake real time monitoring from equipment installed on Castle Street and elsewhere in the city centre to demonstrate the improvements in air quality from the Scheme. The data will be publicly available online.

“Clean air is essential for a good quality of life, and poor air quality is considered the largest environmental risk to public health in the UK.”

World Health Organisation



Castle Street

Sustainable Drainage Systems (SuDS)

When rain falls in the natural environment, natural features such as trees, plants, grasses, earth along with rivers and streams; all help to process this water and this forms an integral part of the water cycle. In the built environment the normal stages of the water cycle are severely impeded. Problems resulting from this damaged cycle include flooding, pollution and issues of erosion. This water which cannot enter the natural water cycle puts additional strain on the sewer system. SuDS provide a natural approach to surface water management by creating a 'mini water processing site'.

SuDS benefits:

- Natural traffic calming measures.
- Improve the micro-climate.
- Improve the air quality.
- Bring nature into the urban environment.

Biodiverse bus shelters and Rain Gardens are examples of SuDS.

Planting Locations

Canopies formed in the tree tops, catch the rain which slowly evaporates, reducing water reaching the surface.

Biodiverse bus stop: supports ecosystems and provides a rainwater filtering location.

Biodiverse bus stops: contain a mixture of green plants and wild flowers. They will attract and sustain insects and other biodiverse wildlife.

Rain garden

Biodiverse bus shelters

With a mixed variety of planting, not only do they support the reduction and slowing of water entering the drainage system, the entire roof of the bus shelter will create a habitat to support insects, other wildlife along with wide array of wild flowers.

Rain Gardens

These are usually a planted area with a variety of species, the plants perform several key functions; intercepting and cleaning both rainwater and surface water runoff. The reduced water volume either drains to a natural watercourse or the drainage system.

Rain Garden Cross Section

Green spaces improve the urban environment.

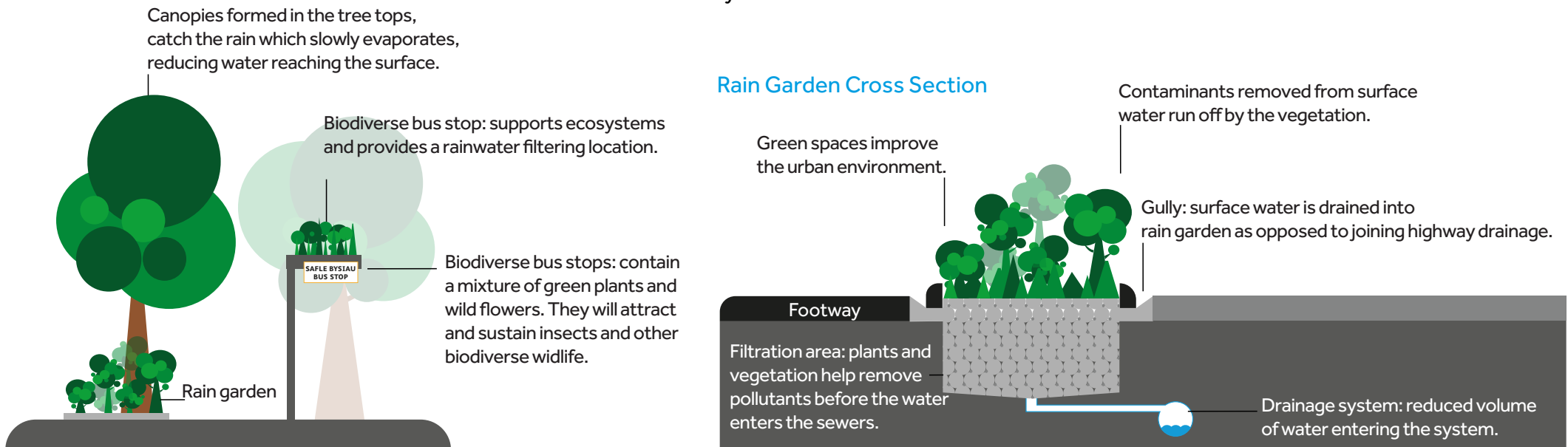
Contaminants removed from surface water run off by the vegetation.

Gully: surface water is drained into rain garden as opposed to joining highway drainage.

Footway

Filtration area: plants and vegetation help remove pollutants before the water enters the sewers.

Drainage system: reduced volume of water entering the system.



Castle Street



Bus Islands

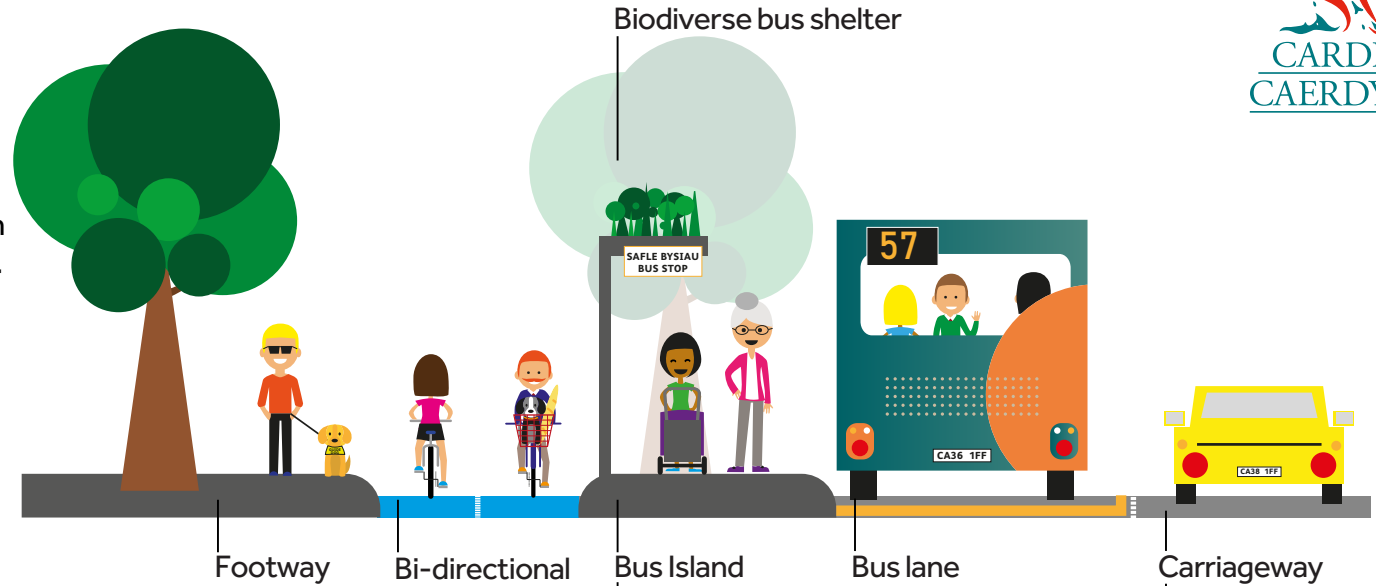
Castle Street

- Northbound bus stops on Kingsway will sit on an island in between the cycle track and road.
- There will be zebra crossings, where cyclists will give way to pedestrians to access the island and get to the bus stops.

Bus Stops are Green

- Many of the new bus stop roofs across the city centre will be planted with shrubs and greenery to help encourage important insects and bugs into our environment.
- The new greener bus stops also help with water drainage issues, absorbing a proportion of the rainfall and diverting from our busy drains.

Bus Island Cross Section



Bus Island Plan View



Zebra crossing; cyclists give way to pedestrians

Castle Street

North Road and Boulevard de Nantes junction

- Tabled junction.
- Three new at grade straight across pedestrian crossings with countdown timers (toucan facility included).
- Public realm improvements to link the City Centre with the Civic Centre and Bute Park.
- Two-way cycle crossing with a dedicated traffic light stage.
- Rain gardens.



Visualisation Only

Castle Street

North Road and Kingsway junction

- New floating bus island with bio-diverse bus stops.
- Two-way segregated cycle lane.

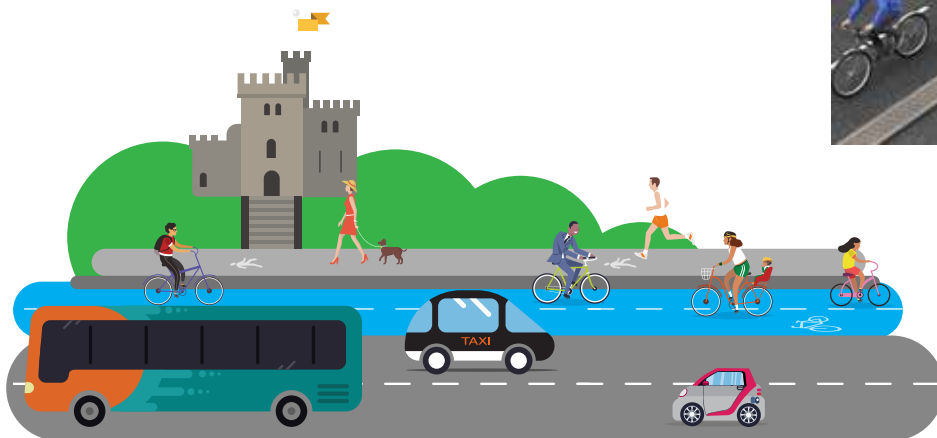


Visualisation Only

Castle Street

Castle Street

- Two-way segregated cycle lane.
- New tabled area in front of Cardiff Castle.
- Public realm improvements.
- Upgraded pedestrian crossings.



Visualisation Only