



Clean Air Neighbourhoods

Climate and Ecology PAC

November 2022

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What are Clean Air Neighbourhoods

*At its heart, a Clean Air Neighbourhood is a comprehensive **Public Health initiative** with the ambition of reducing many of the impacts of poor air quality and improving the health of residents.*

It's more than just a **traffic scheme**, it's a **series of measures** that aim to;

- remove pollution from the streets,
- repurpose road space for active travel, leisure, art and ecology,
- mitigate climate change, and
- move to sustainable living

Safer, healthier and greener place to live, work and play

Air quality crisis

According to Public Health England (PHE), **poor air quality is the largest environmental risk to public health in the UK.**

Long term exposure to man-made air pollution in the UK has an estimated annual effect equivalent to 28,000-36,000 deaths (BHF).

Air pollution can lead to a variety of health problems, including cardiovascular disease, lung cancer and dementia.

The UK ranks 94 out of 118 countries in the AQI country ranking for air pollution. (IQ Air)

World Health Organisation – annual average limit for NO_x **10**ug/m³

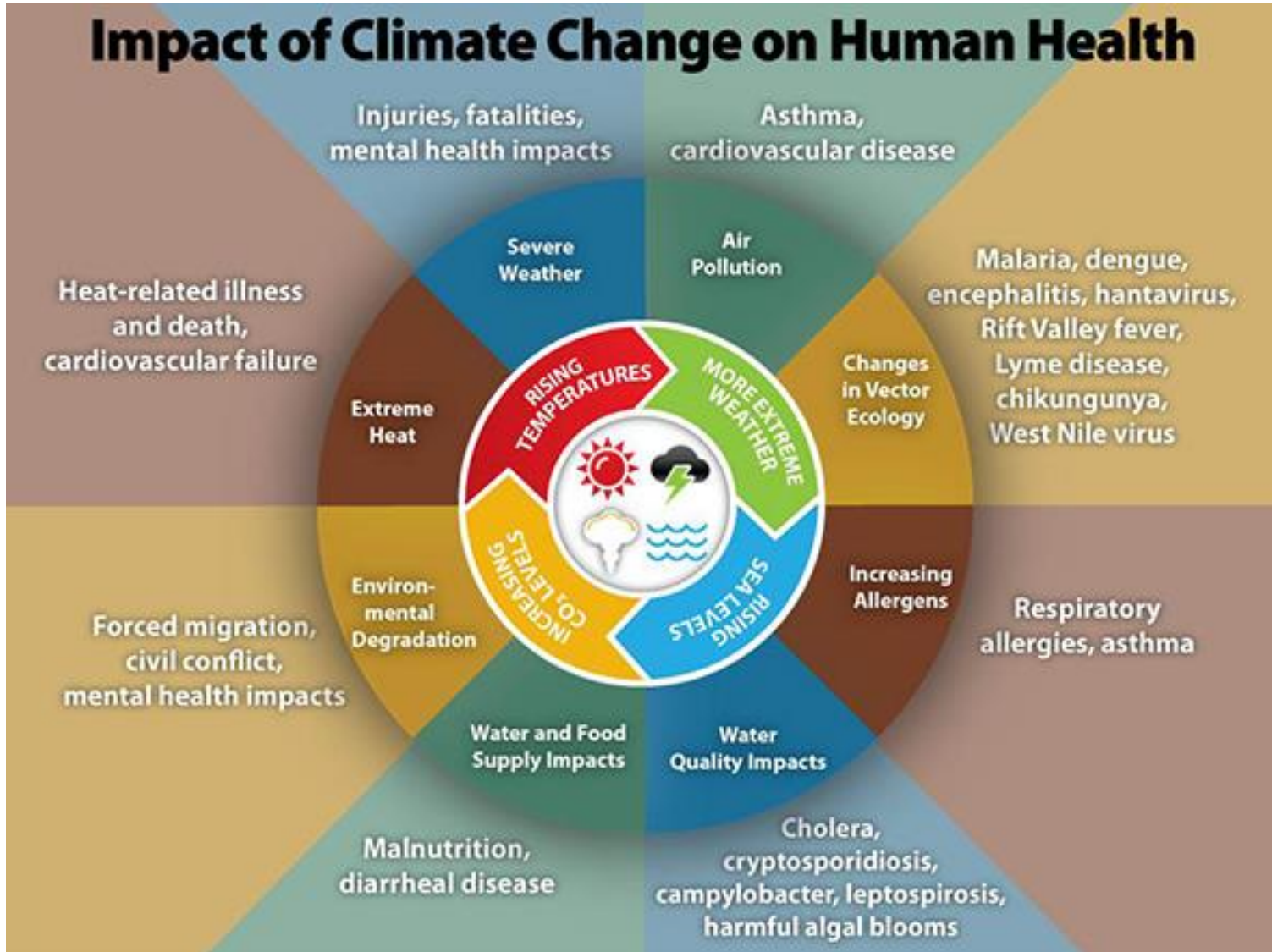
Average in LBHF is **30**ug/m³ with highs of **200**

circa 87 resident deaths per annum related to poor air quality

Air pollution costs **£20 billion** to the UK economy annually. (Royal College of Physicians) – at least **£54m in H&F**

Main causes of NO_x
50% road traffic
20% heat and power

Climate change is a health crisis



Cycle of
Warmer, wetter winters and
Hotter, drier summers

*More drought, more floods,
more ecological disasters and
more infrastructure failures*

=

More deaths

The most vulnerable are the most affected

Carbon targets

The UK has officially enshrined **net-zero by 2050** into law, joining Sweden and Norway as the first countries in the world to do so.

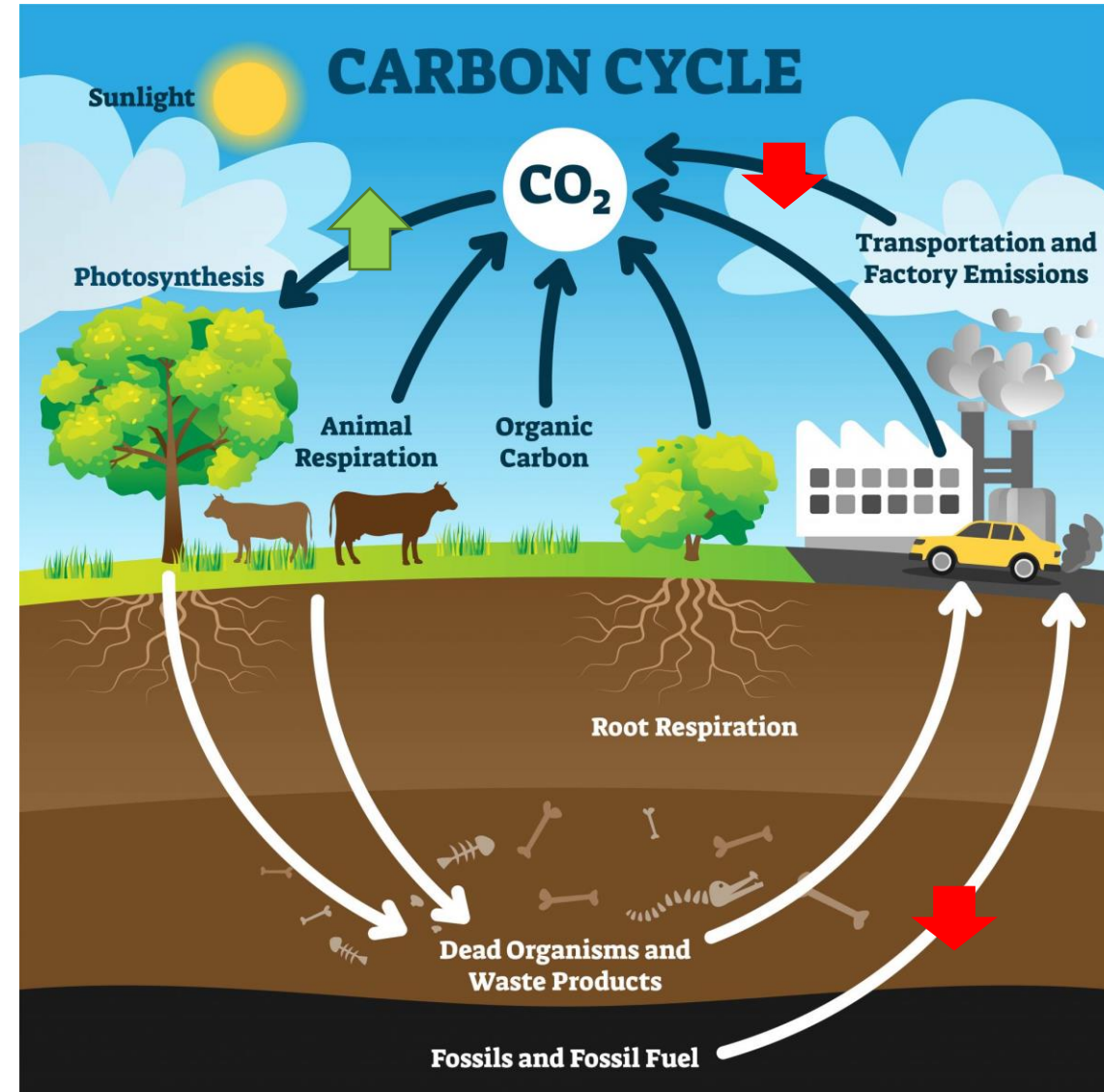
Net zero is delivered by

- reducing the amount of CO₂ coming from fossil fuels
- reducing the amount of CO₂ from industrial processes
- increasing the amount of things that consume CO₂ – such as greening and sustainable forestry

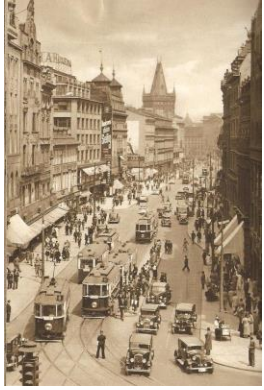
3 key areas to deliver net zero:

- Energy (production and consumption)
- **Transport**
- *Agriculture*

Relies heavily on cultural behaviour change



Traffic congestion is not a new problem

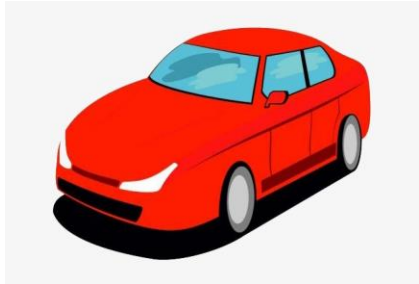


- Traffic in the borough is long standing and been difficult to address
- Majority of traffic is out of borough through traffic
- Traffic is a ‘sentient fluid’ it flows with purpose and intent through our streets – it can be altered.

The boroughs traffic is continually changing

Δ Population

More cars



More people



Δ Behaviours

More deliveries



Working at home



Δ Demand

Sat Nav



Road capacity



=

Problem

Population growth 33%

2016 179,000 – 2030 239,000

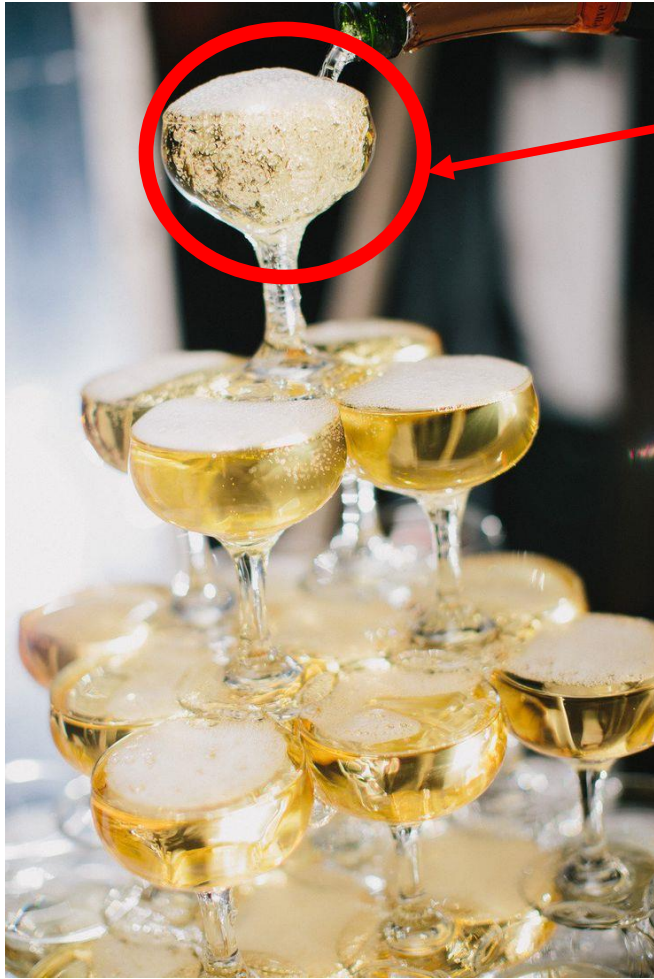
Households growth 18%

2016 114,000 – 2030 135,000

Job growth 15%

2016 137,000 – 2030 158,000

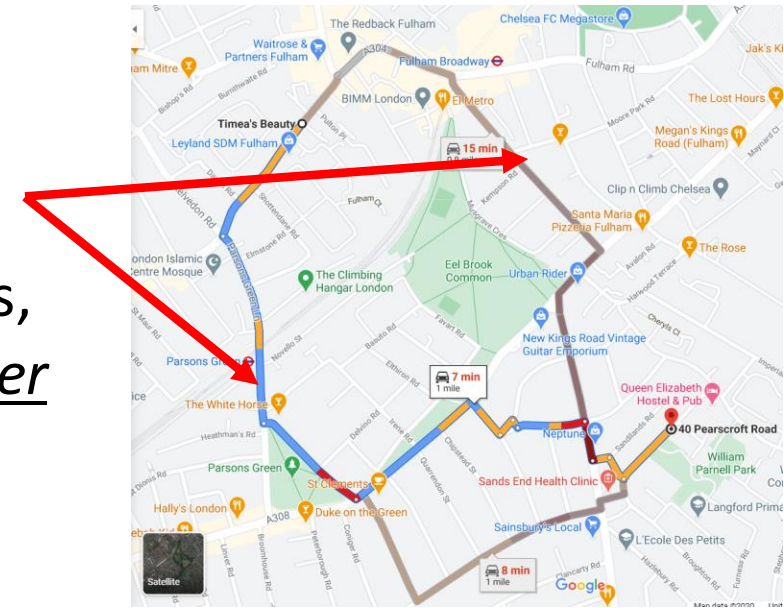
Why does through traffic use side streets?



Main roads are like glasses, traffic demand is the liquid in the bottle with an endless supply.

When there is too much, the glass overflows into other glasses until there are no more glasses left, add more glasses, the amount of liquid just gets bigger

Satnavs look for empty roads to flow traffic into
They will direct traffic to use residential side roads, even if longer, if it is faster

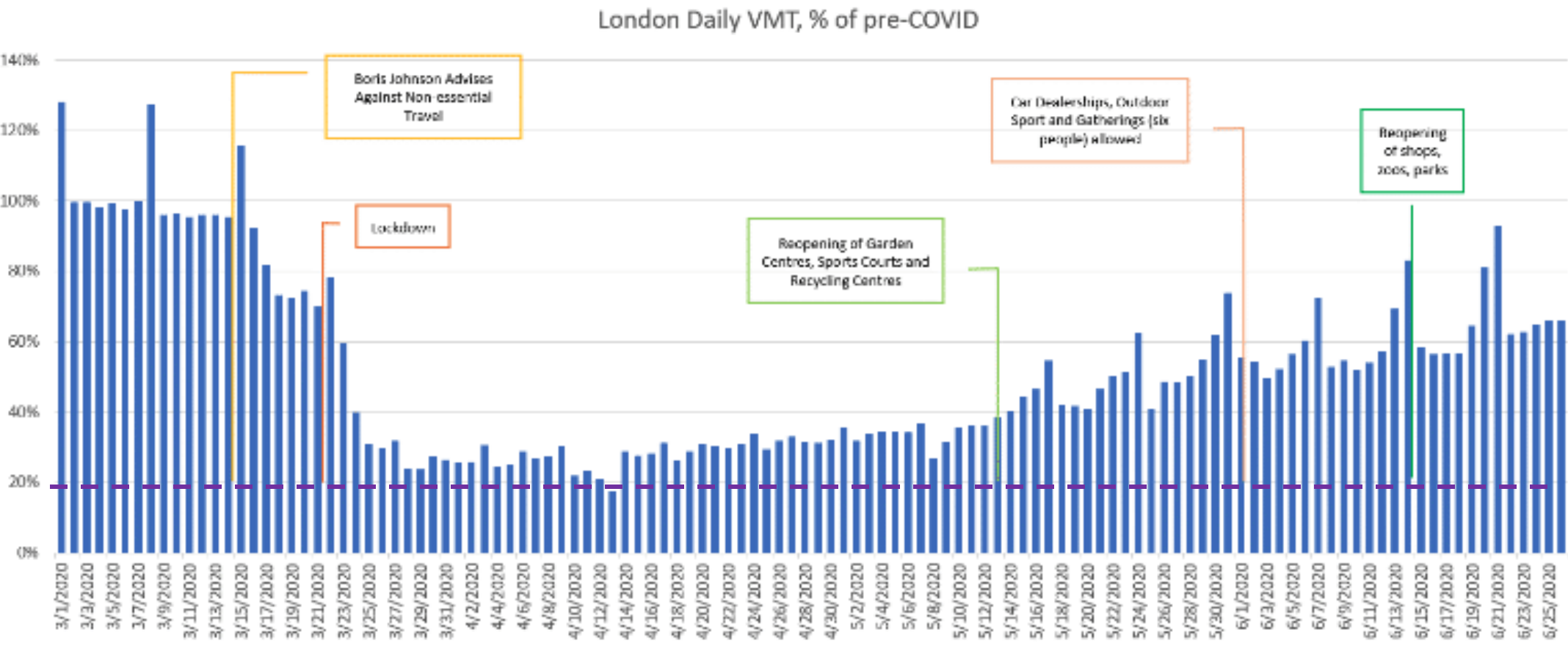


To control traffic on main roads, the side roads need a way to stop the flow

Traffic volume is directly proportional to road space
Less roads = less cars = less pollution = less carbon

There is hope!

Covid lockdowns allowed us to see exactly how much traffic a city needed to function - only **21%** meaning **79%** can be influenced to change



Traffic is the key to success

Less cars

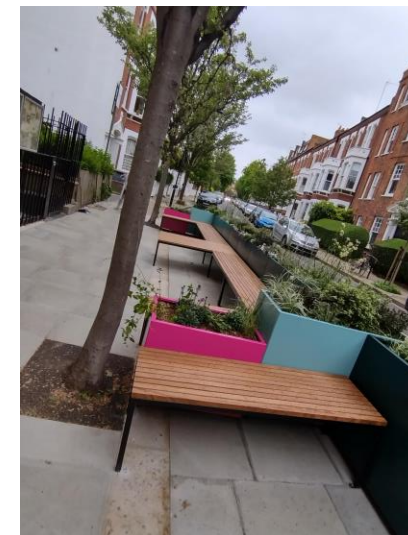


Through traffic is around 75% of the traffic problems in local roads

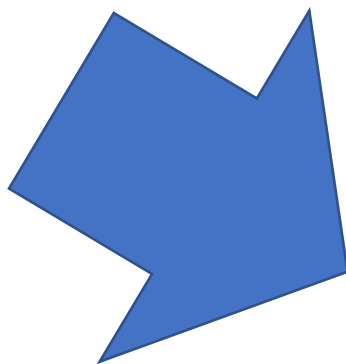


Better health and life chances

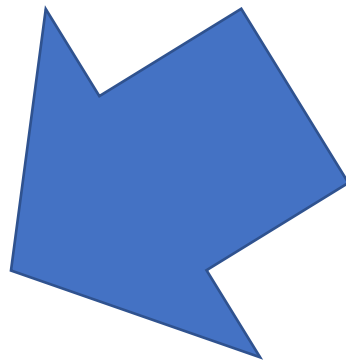
More space for change



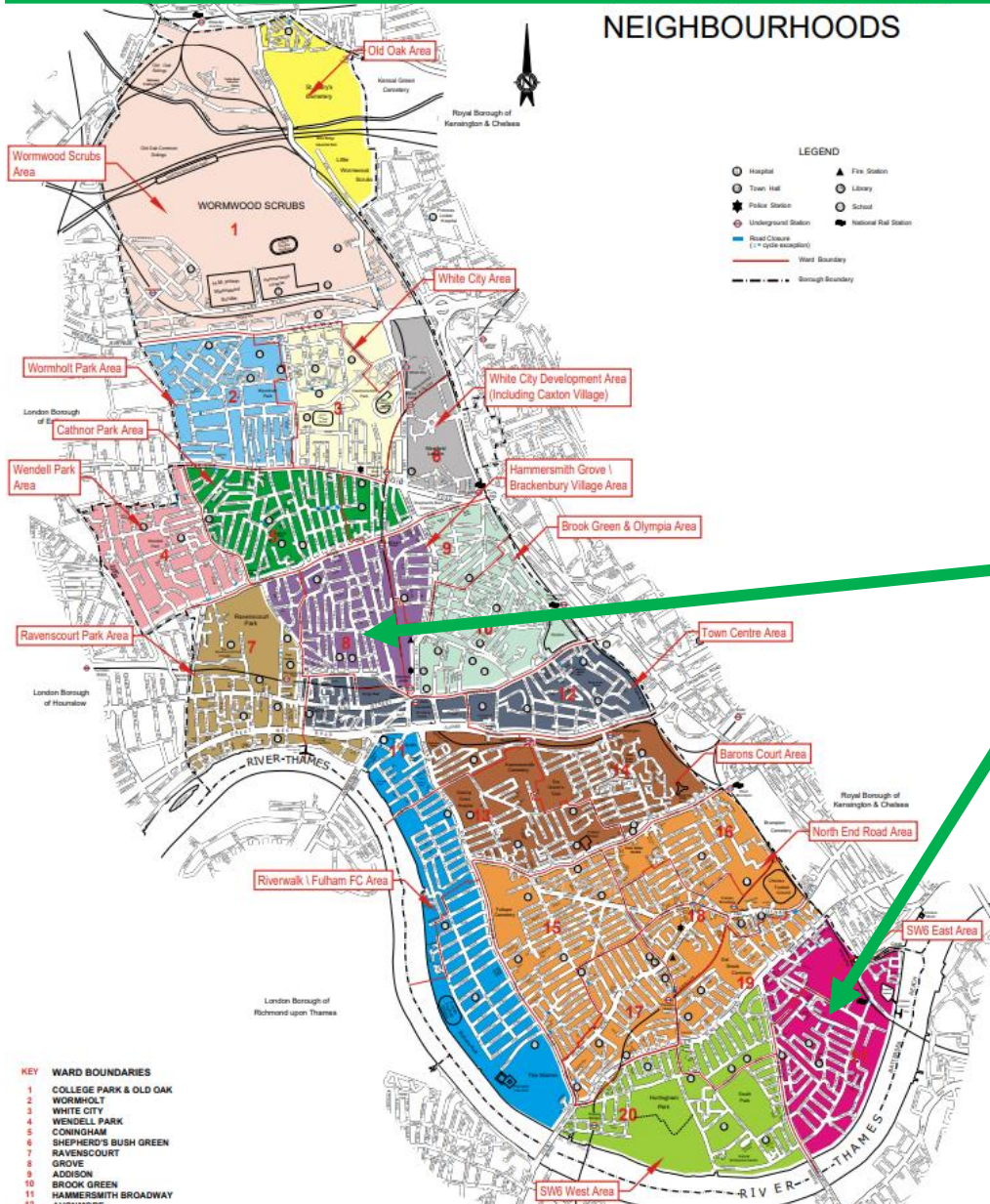
Greening, leisure/art/play, SUDs, active travel – cycling and walking



The mantra



Delivering Clean Air Neighbourhoods



Borough has be broken in to 15 neighbourhoods

The boundaries are defined by the main road that through traffic should be using

Areas may need to be looked at in sections due to size and complexity

Started in Brackenbury for areas above the A4 and South Fulham East for areas below the A4

The programme radiates out based on traffic impacts to other neighbourhoods and on resident buy in

The areas are interconnected



This is just the traffic density map generated from only the traffic crossing Wandsworth Bridge

Wandsworth Bridge is a strategic road crossing point for London with 44,000 crossings per day prior to East Scheme.

95% of those crossings are non local, using the bridge to connect both North-South and East-West Routes.

Workstreams for Clean Air Neighbourhoods

Work with residents and businesses throughout - Engagement, consultation, information and education

Monitor traffic, air quality, Sat Nav, traffic modelling

Reduce out of borough traffic

School Streets +

Encourage more walking and cycling

Initial measures on main roads to reduce capacity

Public realm improvements on main roads, improving active travel, safety, ecology and usefulness

Reduce pollution from construction, industrial activity and energy consumption in homes

Workstreams for Clean Air Neighbourhoods

Remove the traffic

Work with residents and businesses throughout - Engagement, consultation, information and education

Monitor traffic, air quality, Sat Nav, traffic modelling

Reduce out of borough traffic

School Streets +

Encourage more walking and cycling

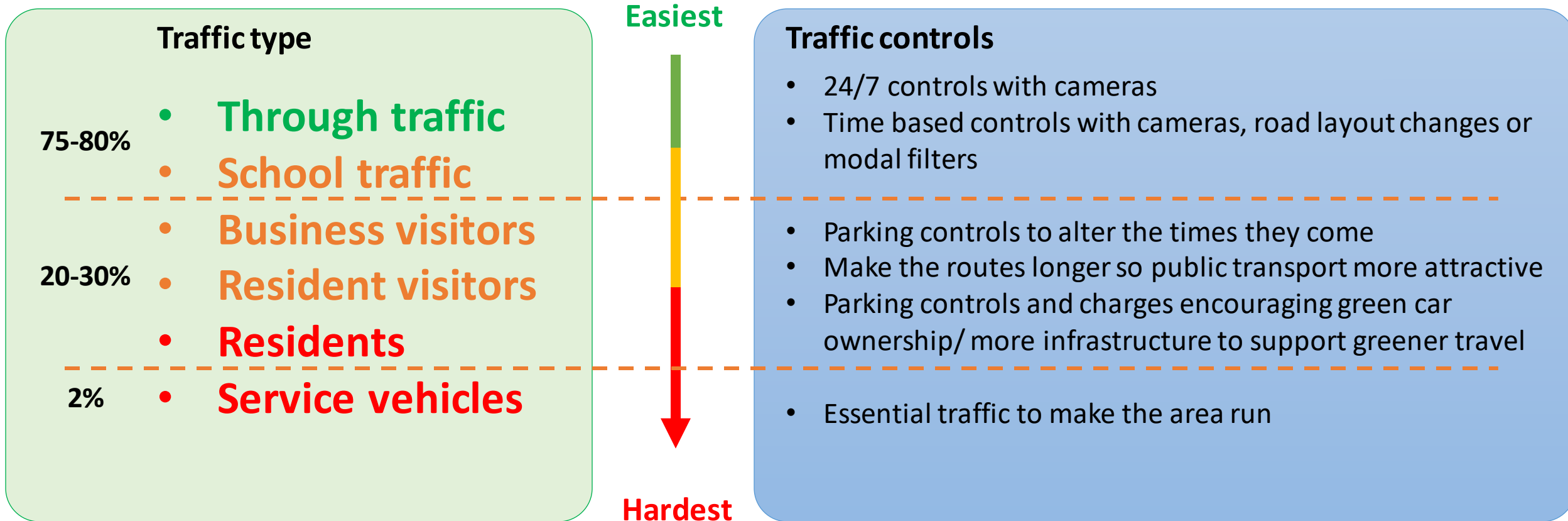
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Why start with through traffic?

First, you have to **remove the traffic**, then you can **reduce the traffic capacity**, which enables the **repurposing of the space**



CLEAN not LTN – right tool for the job



- CLEAN's are designed to **filter traffic** by using technology to select the vehicles to remove from the roads
 - It does achieve some modal shift but its not the schemes primary focus.
 - Precision tool for tackling **through traffic** but **NOT** for reducing **local** traffic activity
 - Very **low** impact on emergency vehicles, public transport and local activity
 - Constrains through traffic capacity across a wide area
- LTN's have various forms but they focus on modal shift of transport usage by making it more difficult for all vehicles. These include road closures, cycle lanes, school streets and pedestrianisation.
 - Blunt instrument for tackling rat running alone, more affective at reducing **all traffic** including local.
 - Very **High** impact on emergency vehicles, public transport and local activity
 - Re-distributes vehicle capacity to other transport modes

MAP OF PROPOSED SOUTH FULHAM TRIAL

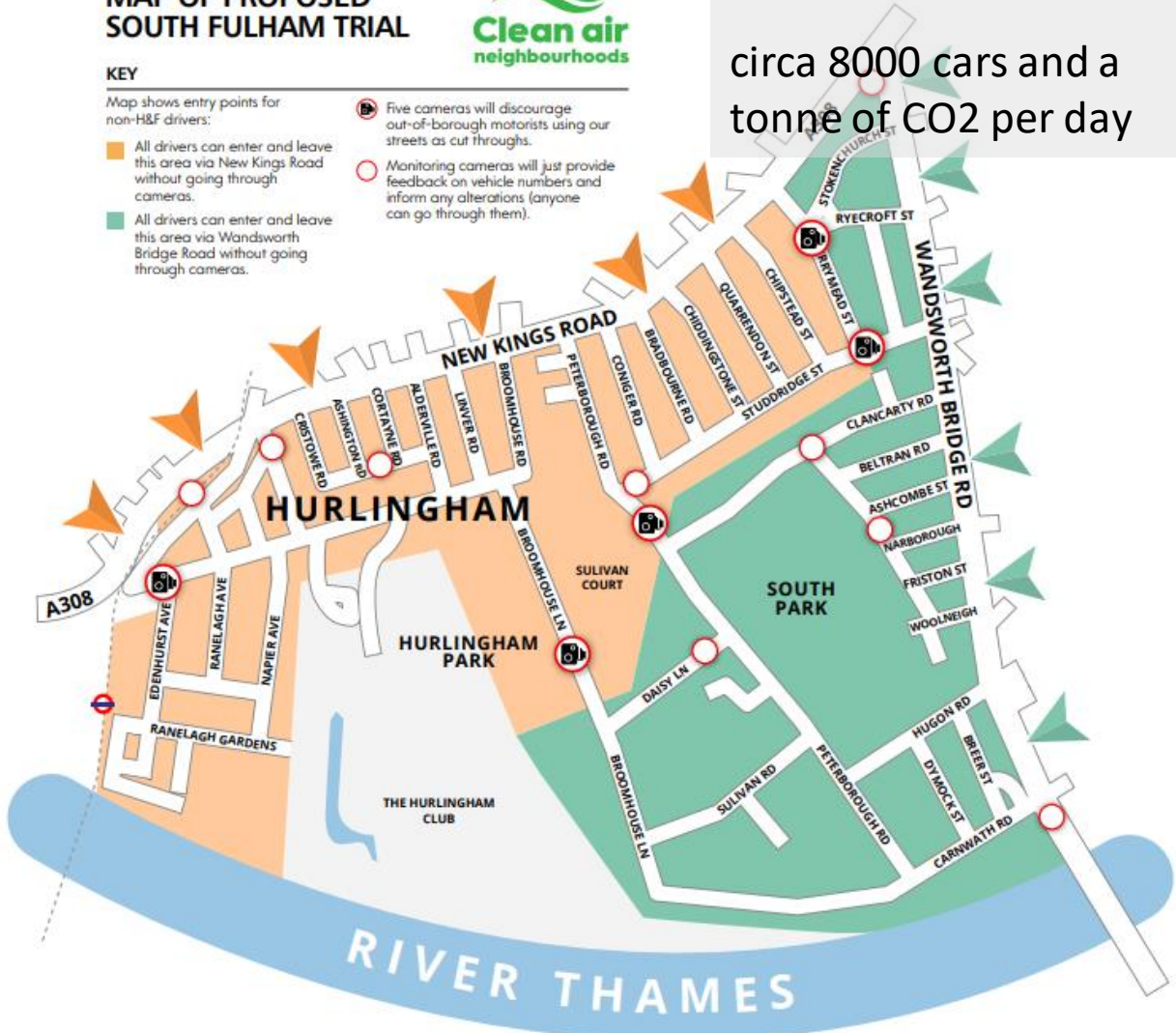


KEY

Map shows entry points for non-H&F drivers:

- All drivers can enter and leave this area via New Kings Road without going through cameras.
- All drivers can enter and leave this area via Wandsworth Bridge Road without going through cameras.

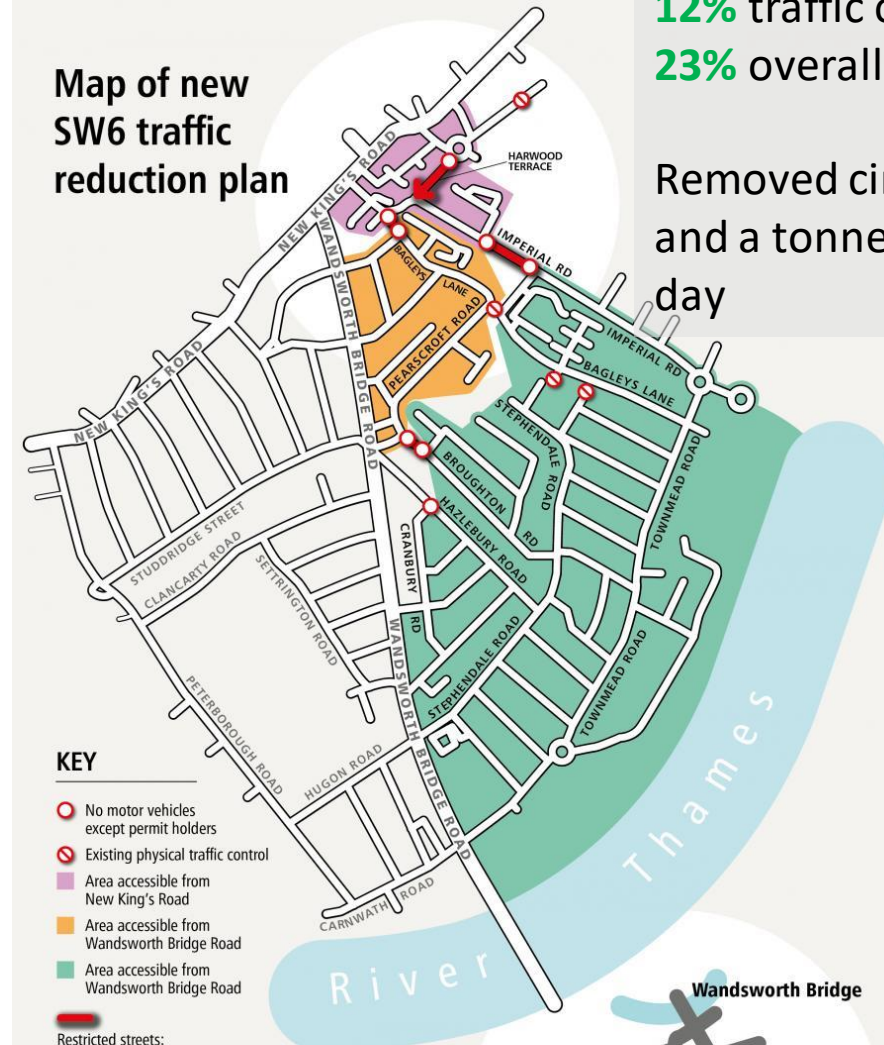
- Five cameras will discourage out-of-borough motorists using our streets as cut throughs.
- Monitoring cameras will just provide feedback on vehicle numbers and inform any alterations (anyone can go through them).



Expected to remove **79%** traffic on side roads
4% traffic on main roads
25% overall

circa 8000 cars and a tonne of CO2 per day

Map of new SW6 traffic reduction plan



KEY

- No motor vehicles except permit holders
- Existing physical traffic control
- Area accessible from New King's Road
- Area accessible from Wandsworth Bridge Road
- Area accessible from Wandsworth Bridge Road

Restricted streets:

- Harwood Terrace** - westbound
- Bagley's Lane** between Cresford Road and Harwood Terrace (access permitted for deliveries to properties on restricted street)
- Broughton Road** between Broughton Road Approach and Langford Road (access permitted for deliveries to properties on restricted street)
- Hazelbury Road** at the junction with Cranbury Road
- Imperial Road** between Emden Street and Fulmead Street

Removed **75%** traffic on side roads
12% traffic on main roads
23% overall

Removed circa 8000 cars and a tonne of CO2 per day



Filtering the through traffic - How the camera controls work

Step 1



Vehicle wants to pass through a control point



Step 2



YOUR REG

Camera, using ANPR, checks database to see if vehicle is eligible to enter or not (has a permit)

Step 3



If vehicle is eligible to enter, it's ignored



If vehicle is **not** eligible to enter, it's sent a **fine** in the post

Strategic roads in the area have a 'virtual gate'

Who can pass through a control point

Permitted vehicles

- All H&F residents and H&F permit holders
- Black taxis and Buses
- Emergency services
- Essential services (such as refuse, carer, etc)



On demand controlled by residents

- Visitors
- Who ever you want!



Excluded vehicles

- Out of borough through traffic using the route to cut corners



On demand permits need to be registered **BEFORE midnight** on the day to avoid a fine for the driver.
The permit can be issued **AFTER** the car has passed through.

Using ANPR technology, cameras will determine which vehicles to ignore and which to fine based on a valid permit.

Air Quality monitoring – measuring success



65 locations, mesh network of sensors – rolling out boroughwide

Samples air every 5 mins
Mix of
NO_x, O₃, CO, PM2.5, PM10.

First and largest AQM network of its kind

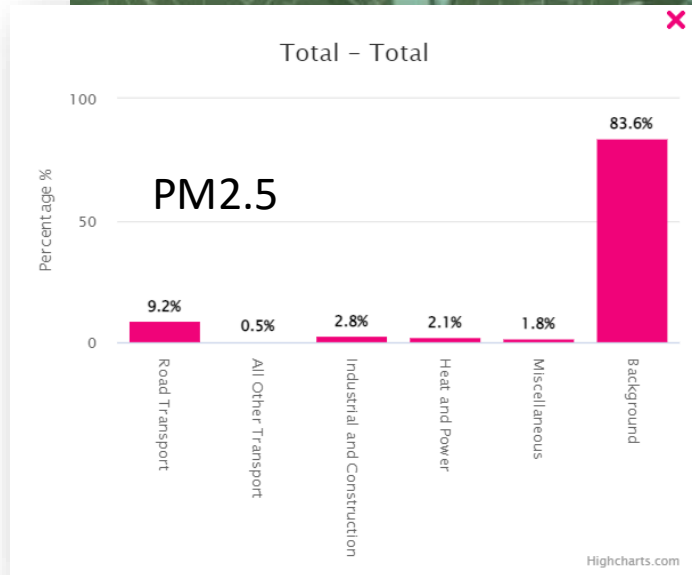
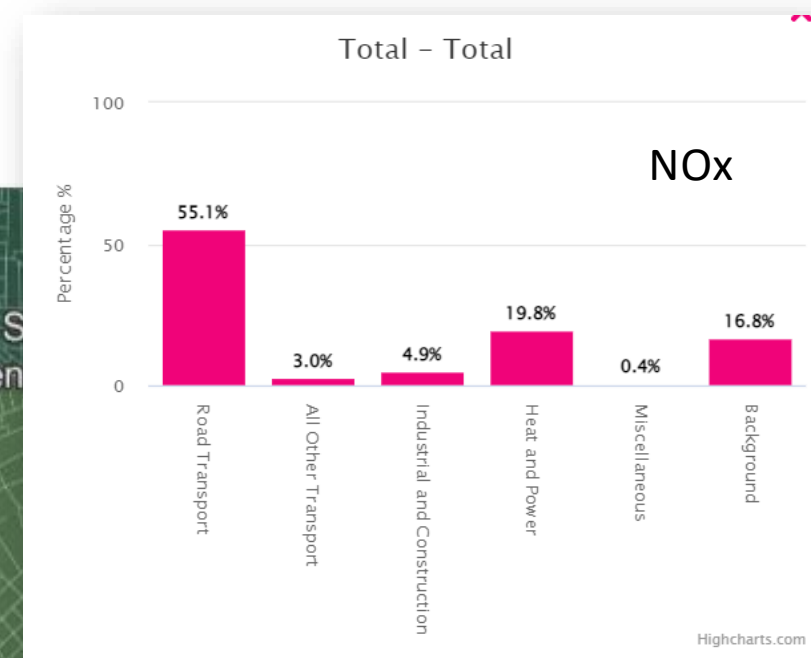
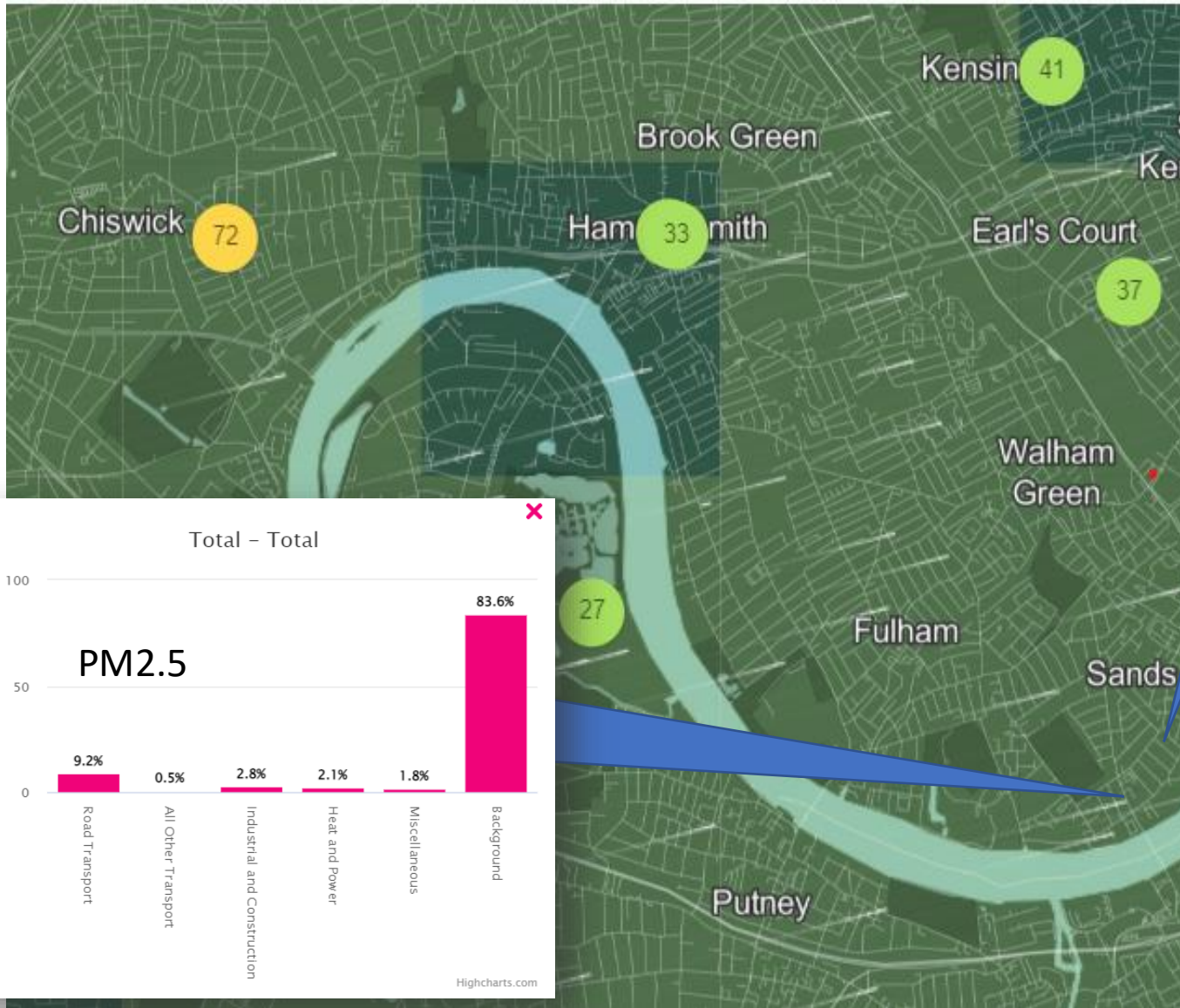
Upgraded existing Defra site and added a further 3, measure PM1.0

Installed sensors in and around schools as part of Breathe London initiative

Working with Imperial to analyse the data

Pollution map – 6/10 @11am

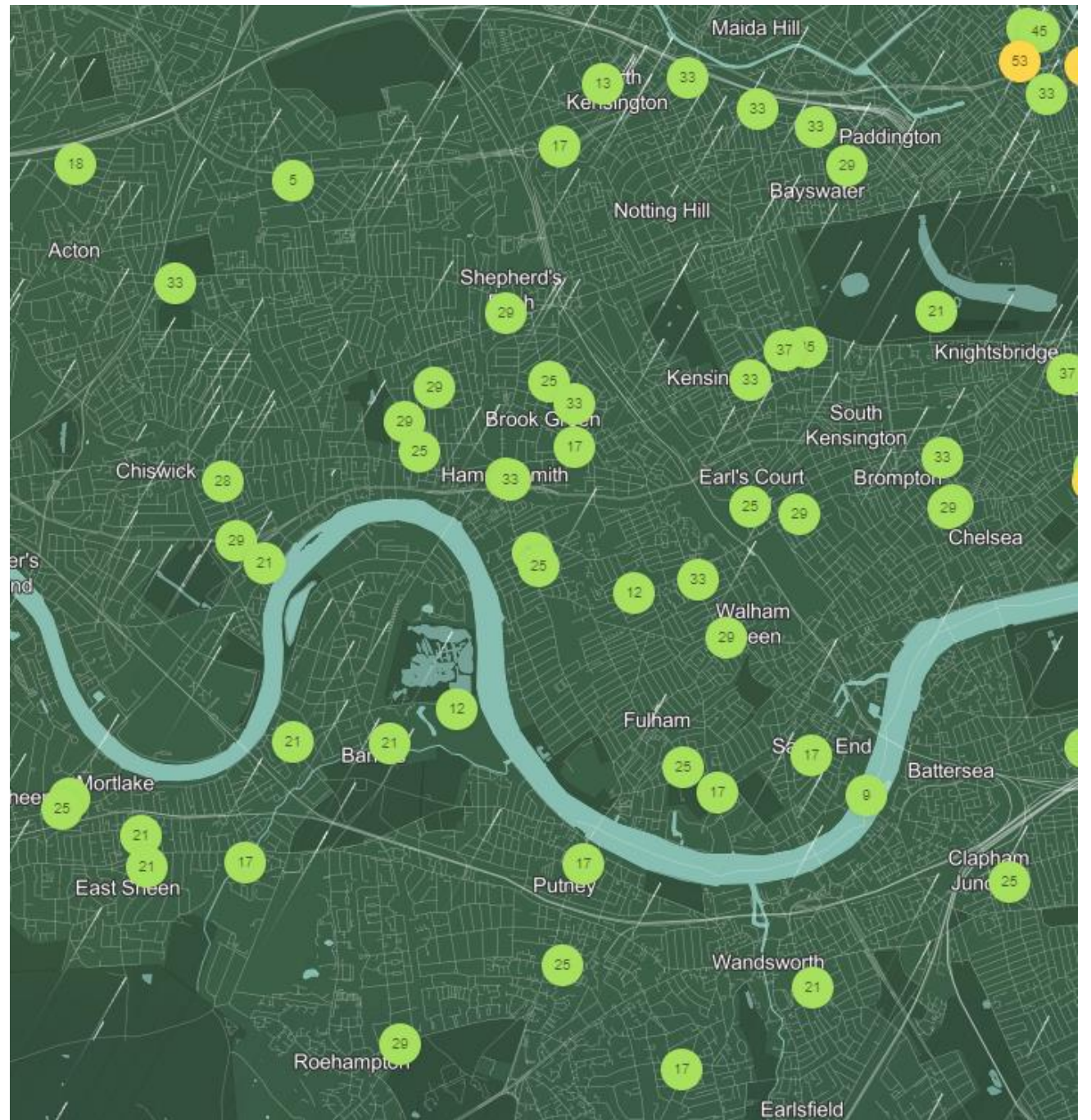
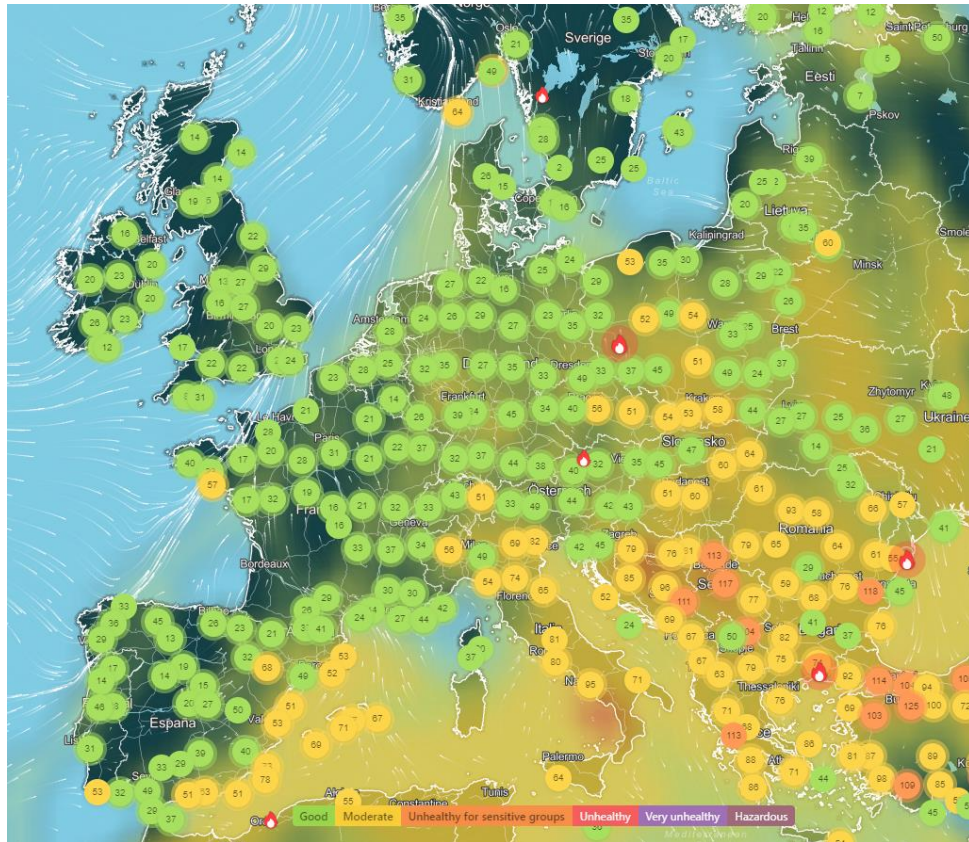
The Eastern scheme area is 1/3 lower than other parts of the borough



Not all pollution is local

Wind direction, temperature, air pressure and humidity, as well as pollution generating from surrounding areas all influence local air quality.

What is important is exposure to pollution over time and how much recovery time someone gets

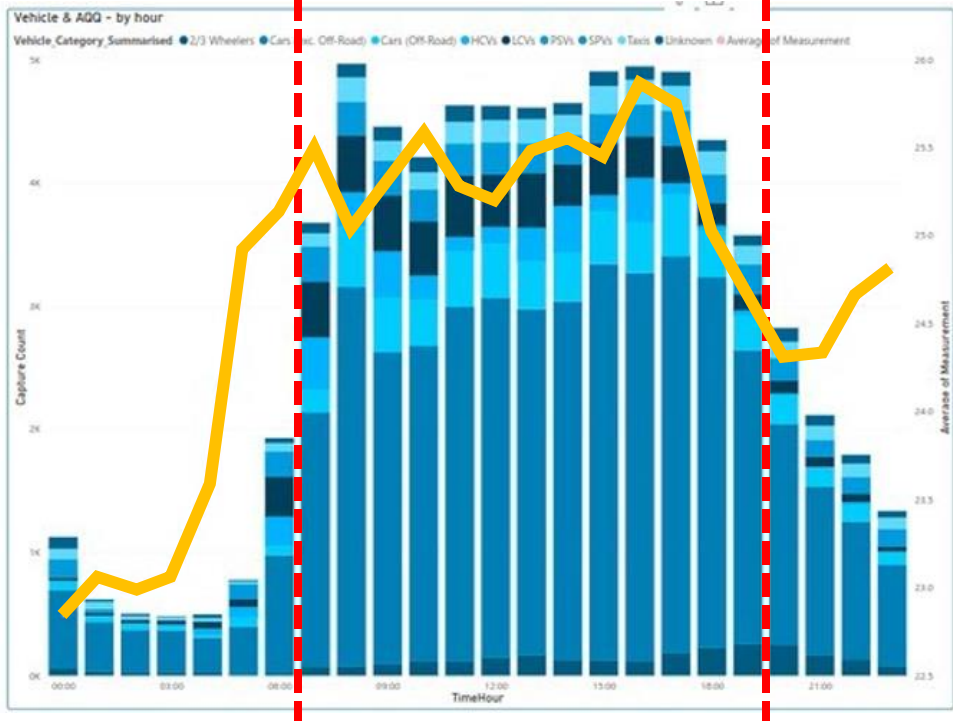


Air Quality comparison

River traffic and heating

Road traffic and industrial

River traffic and heating



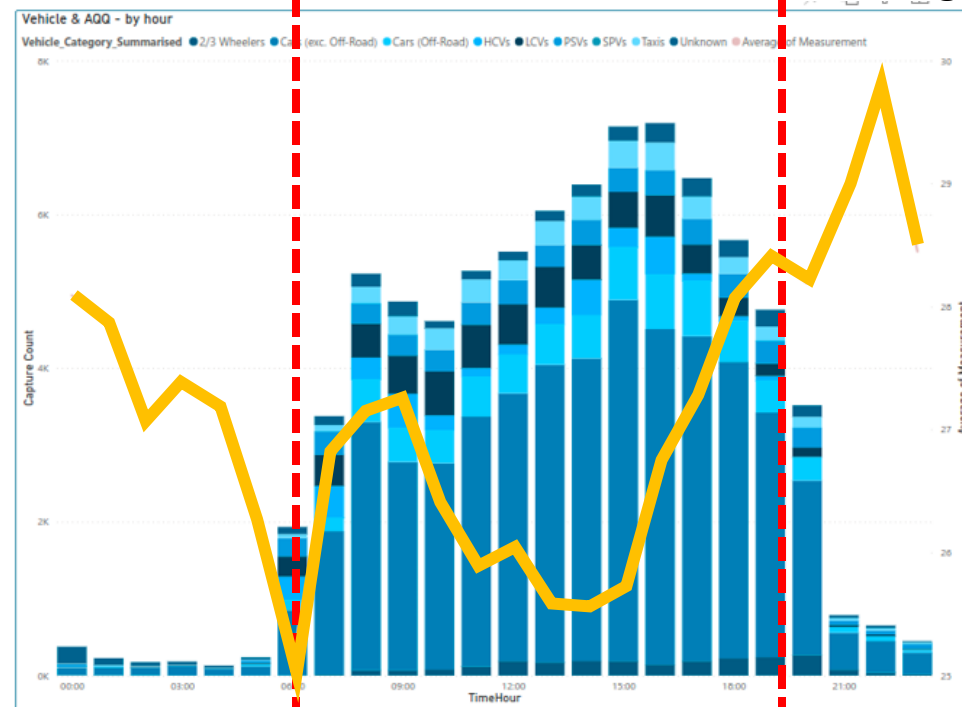
| Pollutant | Average | Min | Max | Samples taken |
|-----------------|---------|-------|-------|---------------|
| NO ₂ | 11.35 | 3.52 | 42.97 | 8577 |
| O ₃ | 71.74 | 41.42 | 86.43 | 8577 |

West – before scheme

River traffic and heating

Road traffic and industrial

River traffic and heating



| Pollutant | Average | Min | Max | Samples taken |
|-----------------|---------|-------|-------|---------------|
| NO ₂ | 10.01 | 4 | 27.03 | 9326 |
| O ₃ | 65.15 | 45.12 | 77.49 | 9326 |

East – after scheme

Traffic reductions in the South Fulham East trial

Traffic flow changes 7 day weekly average

On average removed **75%** traffic on side roads

12% traffic on main roads

23% overall

Removed circa 8000 cars and a tonne of CO2 per day

Removed 170,000 trips per week on the SW-NE Direction

| SURVEY LOCATION | BEFORE HT CLOSURE | DURING HT CLOSURE LTN | DURING SW6 EAST SCHEME CLEAN |
|---|-------------------|----------------------------|-----------------------------------|
| Bagleys Ln (South of New Kings Rd) | 44,990 | 56,562 (+25.7%) | 12,675 (-72% and -78%) |
| Imperial Rd (East of Emden St) | 77,999 | 51,083 (-34.5%) | 17,706 (-76% and -64%) |
| New Kings Rd (West of Maxwell Rd) | 190,486 | 153,007 (-19.7%) | 120,925 (-36% and -21%) |
| Townmead Rd (East of Bagleys Ln) | - | 65,886 | Not Counted Estimate – 29,000* |
| New Kings Rd (North of Crondace Rd) | 107,187 | 97,680 (-8.9%) | 93,480 (-13% and -4.5%) |
| Wandsworth Bridge Rd (South of Studdridge St) | 157,137 | 158,153 (+0.6%) | 148,701 (-5% and -6%) |
| Wandsworth Bridge Rd (South of Oakbury Rd) | 155,308 | 152,025 (-2.1%) | Not Counted (bridge -15%) |
| Harwood Terrace WB | 27,790 | 0 (-100%) | 4,420 -84% |

Workstreams for Clean Air Neighbourhoods

Remove the opportunity for the cars to come back

Work with residents and businesses throughout - Engagement, consultation, information and education

Monitor traffic, air quality, Sat Nav, traffic modelling

Reduce out of borough traffic

School Streets +

Encourage more walking and cycling

Initial measures on main roads to reduce capacity

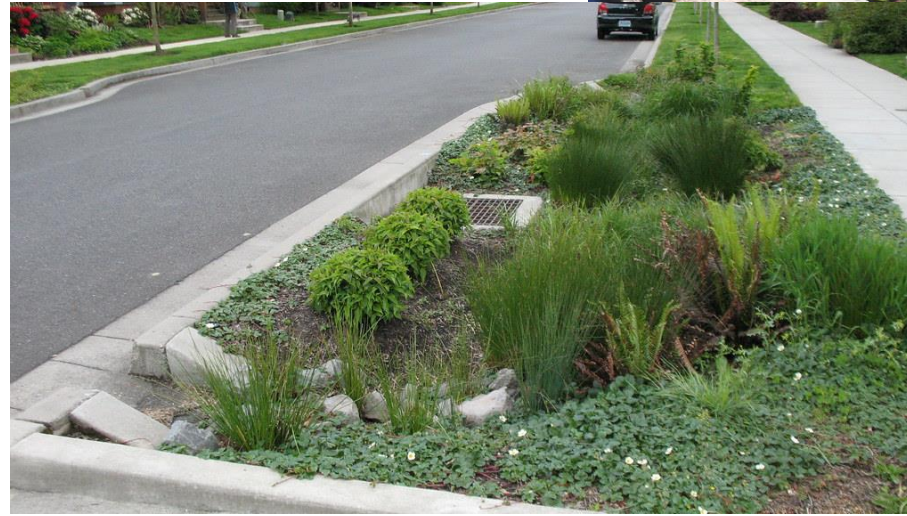
Public realm improvements on main roads, improving active travel, safety, ecology and usefulness

Reduce pollution from construction, industrial activity and energy consumption in homes

Minimising the threat of climate change to residents

Flooding – wetter warmer winters, growing population, non permeable surfaces and Victorian infrastructure.

Use SUDs and Rain gardens to drain the water naturally



Heat – streets create canyons for extreme heat build up

Urban forests using tree canopy to cool the street
Water features to cool the air

Reshaping the neighbourhoods and re-wilding

Bold and innovative approaches to repurpose the space left by cars
Green highways for ecology to re-establish

Limited only by imagination



Benefits of re-wilding

- Helps wildlife adapt to climate change
- Reverses biodiversity loss
- Supports diversified economic opportunities
- Improves our health and wellbeing

Conservation is not preservation
Streets need to adapt and change,
it is a managed environment with
multiple demands

**Diversity of space = thriving
ecology**



The street scene plays a vital part in **connecting up habitats** and **providing wildlife bridges.**

Re-imagine main roads

After a trail scheme to control through traffic goes live, traffic on main roads can be controlled better.

Reducing lanes at junctions with SUDs/ rain gardens, increasing cycle lanes, reducing spaces to stop, changing the priority for cars or shared spaces

Main roads do not have to be traffic centric – they are places too

This requires local buy in and a vision for the area



Brand identity

Combination of local and H&F logos for the neighbourhoods to bring both a collective and local identity

Looking at options for branding

Street nameplates, green and active travel hubs, banners, gateways

Road surfaces, coloured lighting, 'city trees' air purifiers





‘it starts with traffic, but it’s more than just a traffic scheme’