Clean Air Fund (CAF) Programme

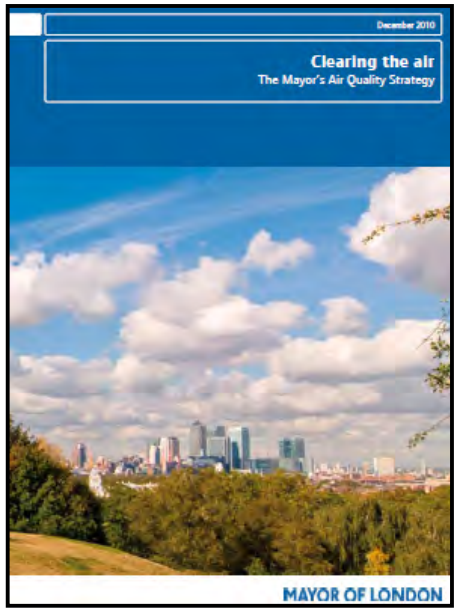
Nick Blades

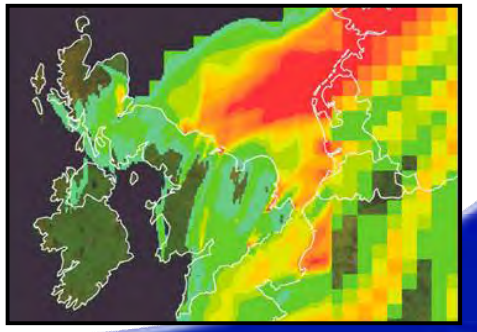
Programme Manager, Delivery Planning

Surface Transport, Transport for London

Air Quality in London

- Air pollution and Londoners' health
- Pollutants: Particulate Matter (PM) & NO_2
- Mayor's Air Quality Strategy (MAQS):
  - Air Quality is improving in London
  - Vast majority of London meets annual average EU limit values for PM_{10} but not for NO_2
  - Local 'PM_{10} hotspots' are at risk of exceeding daily limit values
  - Road transport - major local source of pollution
  - Significant pollution sources are not within London - 40% of PM_{10} coming from outside London



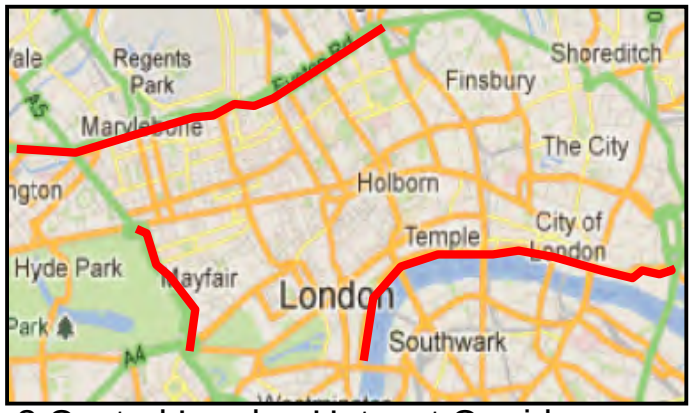


What has TfL been doing to improve air quality?

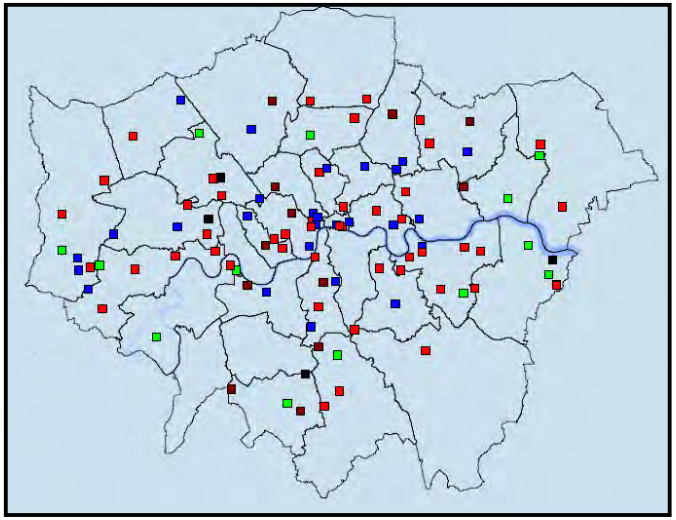
- Delivered a range of measures in the Mayor's Air Quality Strategy to deliver cleaner transport:
  - Low Emission Zone – tightening standards
  - Reducing emissions from London's bus fleet
  - Introduced age limits for London's taxi and private hire vehicle (PHV) fleet
  - Improving public transport and investment in cycling and walking
  - Measures to smooth traffic flows
  - Encouraging uptake of electric vehicles
  - Promoting Smarter Travel Initiatives

The Clean Air Fund

- MAQS committed to deliver and test 'local measures' to address PM_{10} hotspots
- Mayor secured a grant of £5m from the DfT for CAF in Spring 2011 that:
  1. short term & targeted local PM_{10} 'hotspots'
  2. innovative and helped test effectiveness of local measures
- MAQS modelling identified 3 main hotspot corridors 'at risk' in Central London
- LAQN monitoring identifies other locations with high PM_{10} pollution



3 Central London Hotspot Corridors


London Air Quality Monitoring Network

Green Infrastructure – planted towers, green walls and tree planting to trap PM

Clean Air Fund Local Measures

CLEANER AIR FOR LONDON

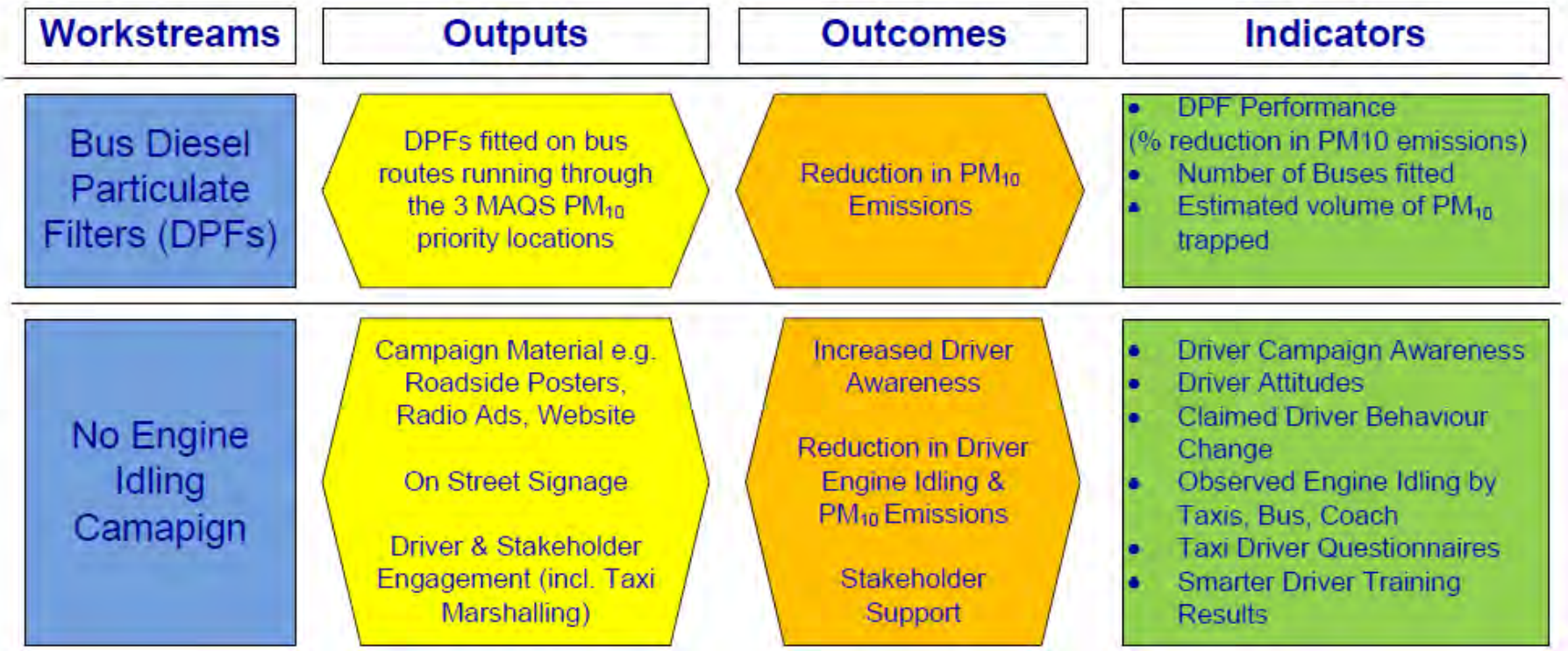
Diesel particulate filter fitments to buses on key routes to reduce PM emissions

Trials of **Cleaning and Application of Dust Suppressants** to trap PM

Business Focused Transport Measures to reduce emissions

No Engine Idling Campaign & **Taxi Marshalling** at busy ranks to reduce PM emissions

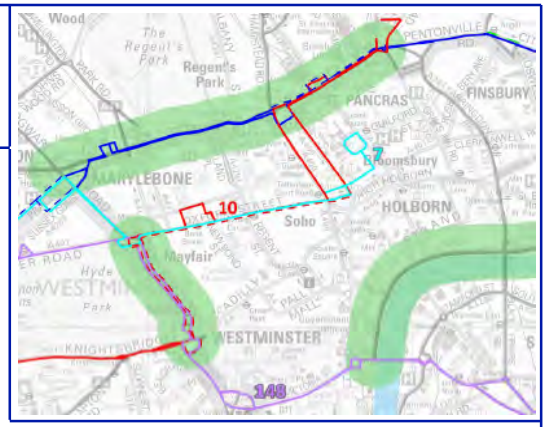
How did we evaluate the effectiveness of the CAF measures?



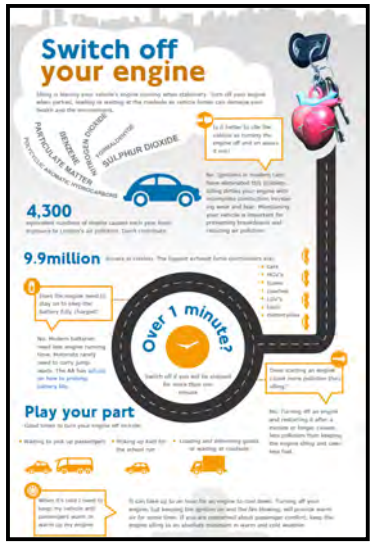
Diesel Particulate Filters on Selected Bus Routes

Bus Diesel Particulate Filters

Measures Delivered	• Retrofit to 120 vehicles • Targeted at routes 10, 148, 205, 49, 7
Effect	• 77% reduction in bus PM_{10} exhaust emissions • 5 routes = reduction of 580kg in annual PM_{10} emissions • Routes 10 and 205 - DPFs will reduce total annual bus exhaust PM_{10} emissions on Euston Road by 33%
Conclusions	• Significant reduction in emissions • Good as can be targeted at specific buses on specific routes • Requires considerable technical input



No Engine Idling Programme



No Engine Idling Programme

Measures Delivered	(1) Awareness & Education Campaign • Media & Communications Activity (2) Engagement Activity, including: • Taxi Marshalling & Driver Training • Fleet Operators & Drivers (bus, coach, freight) (3) Targeted Signage	
Effect	• Campaign recognition 40% • Idling On-Street - Overall reduced by 5% - Coaches (-11%), HGVs (-16%) • Marshalled taxi ranks – engine idling reduced by 9%. • Smarter driving training (Taxi and PHV) - fuel savings of 25% and 12%	
Conclusions	• Very positive indicators of effectiveness: - establishing awareness - changing driver behaviour • 'No Engine Idling' message needs to be sustained	

Green Infrastructure

Green Infrastructure

Measures Delivered	• 600 new trees & other planting
	• 2 Green Walls
	  • LU Station - Edgware Road
	  • Mermaid - Upper Thames St
		

Effect	• Research confirmed GI traps small quantities of PM_{10} • Wider environmental benefits – soaks up rain run off, temperature regulation, biodiversity	
Conclusions	• Supports increasing evidence base on GI's air quality benefits • Green Walls offer excellent awareness raising opportunity • Represents a positive supporting measures	

Cleaning & Application of Dust Suppressants

Cleaning & Application of Dust Suppressants

Measures Delivered	• Trial applications of CMA to road surface to suppress dust
	• Expanded trial applications in range of locations
	  • Along 6 road corridors (20 miles)
	  • 5 industrial sites and 2 construction sites
		

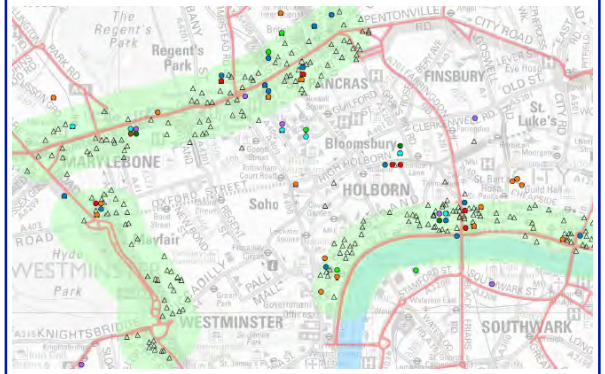
Effect	• **Road Corridor Study Sites**
	  • c16% reduction in total PM_{10} concentration monitored at Upper Thames St
	  • Unclear results or no effect at four other road locations
	• **Industrial Study Sites**
	  • Beneficial impacts monitored at three of the four sites
	  • Horn Lane - clear drop in local PM_{10} (31% and 59%)	

Conclusions	• Valuable in identifying a typology of places where likely to be effective
	• Supports use in very specific locations:
	  • high proportion of local resuspended PM_{10}
	  • can maximise surface area applicable for treatment
	  • examples - Industrial waste, construction and demolition sites	

Business Transport Measures & Engagement

Business Transport Measures & Engagement

Measures Delivered	• Engagement with over 600 businesses • 8 Business Best Practice Guides • Nine Delivery Servicing Plans • Electric Charge Points (cars/LGVs) • Electric pool bikes trialled with 6 employers • Promoting walking – Legible London walking maps, guided lunch walks • airTEXT daily health bulletins in hotspots
Effect	• Good business and staff uptake of measures • Some evidence of increased use of sustainable modes
Conclusions	• Engagement work around transport measures can change travel behaviour and in turn help to deliver air quality benefits • Many businesses are not aware their impact on local air quality and must present attractive business case examples with evidence of real financial savings



Clean Air Fund Report

Conclusions

- Successfully delivered a wide range of measures with tangible impacts on awareness, behaviour and PM emissions
  - Bus DPFs, No Engine Idling both give short term tangible emission reduction benefits
  - Green Infrastructure has local air quality and wider benefits
  - Business Engagement can change travel behaviour and deliver air quality benefits
  - Dust Suppressants can produce positive benefits in very targeted locations – industrial waste and construction sites
- Demonstrates that local measures can play a supporting role to London wide emissions reduction measures

Next Steps

- **Publish and share CAF report and research findings**
- **Significant 10 year investment proposed in draft TfL Business Plan, including:**
  - Major investment in public transport, cycling and walking
  - Reducing bus emissions:
  - 1,600 cleaner hybrid buses by 2016
  - Retrofitting upto 900 of London's older buses to reduce NO_x emissions
  - Ongoing activity to deliver the 'No Engine Idling' message
  - Promote delivery of green infrastructure incl. green walls
  - Electric vehicle delivery project
  - Mayor's Air Quality Fund – for delivery of local air quality measures by Boroughs