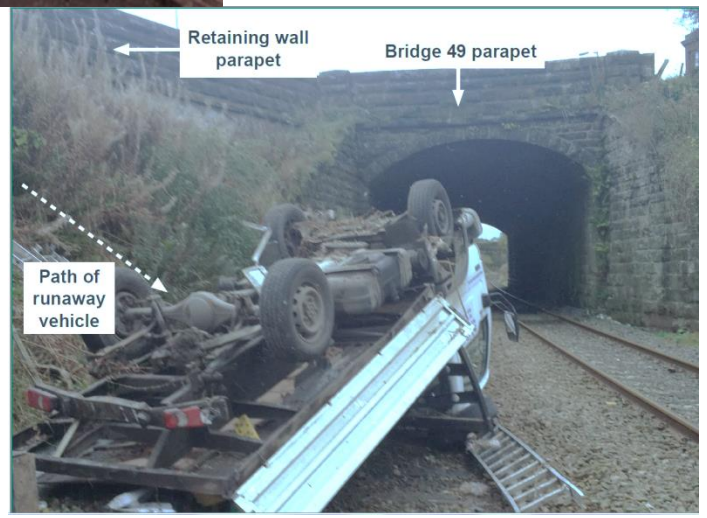
SEPTEMBER 2017

Road – Rail Interface : Addressing the risk of vehicle incursion

WHAT IS THE VEHICLE INCURSION FOR THE RAILWAY NETWORK ?

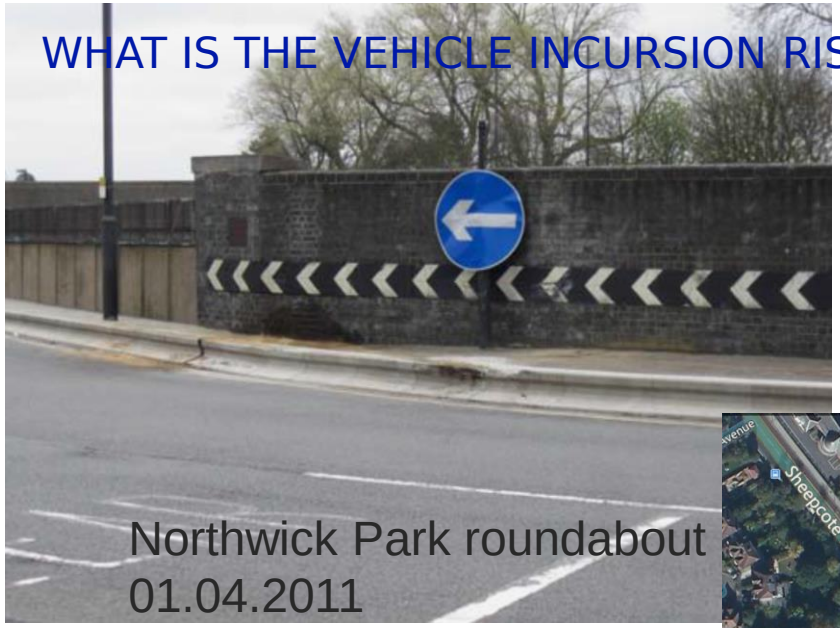
Great Heck, 2001

Oxshott, 2010

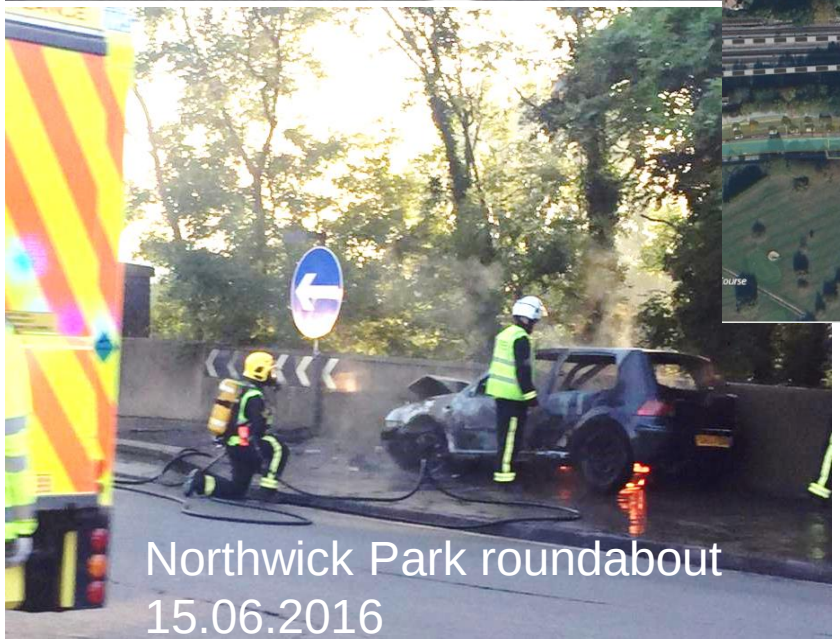


Aspatria, 2013

WHAT IS THE VEHICLE INCURSION RISK FOR THE LONDON UNDERGROUND NETWORK ?



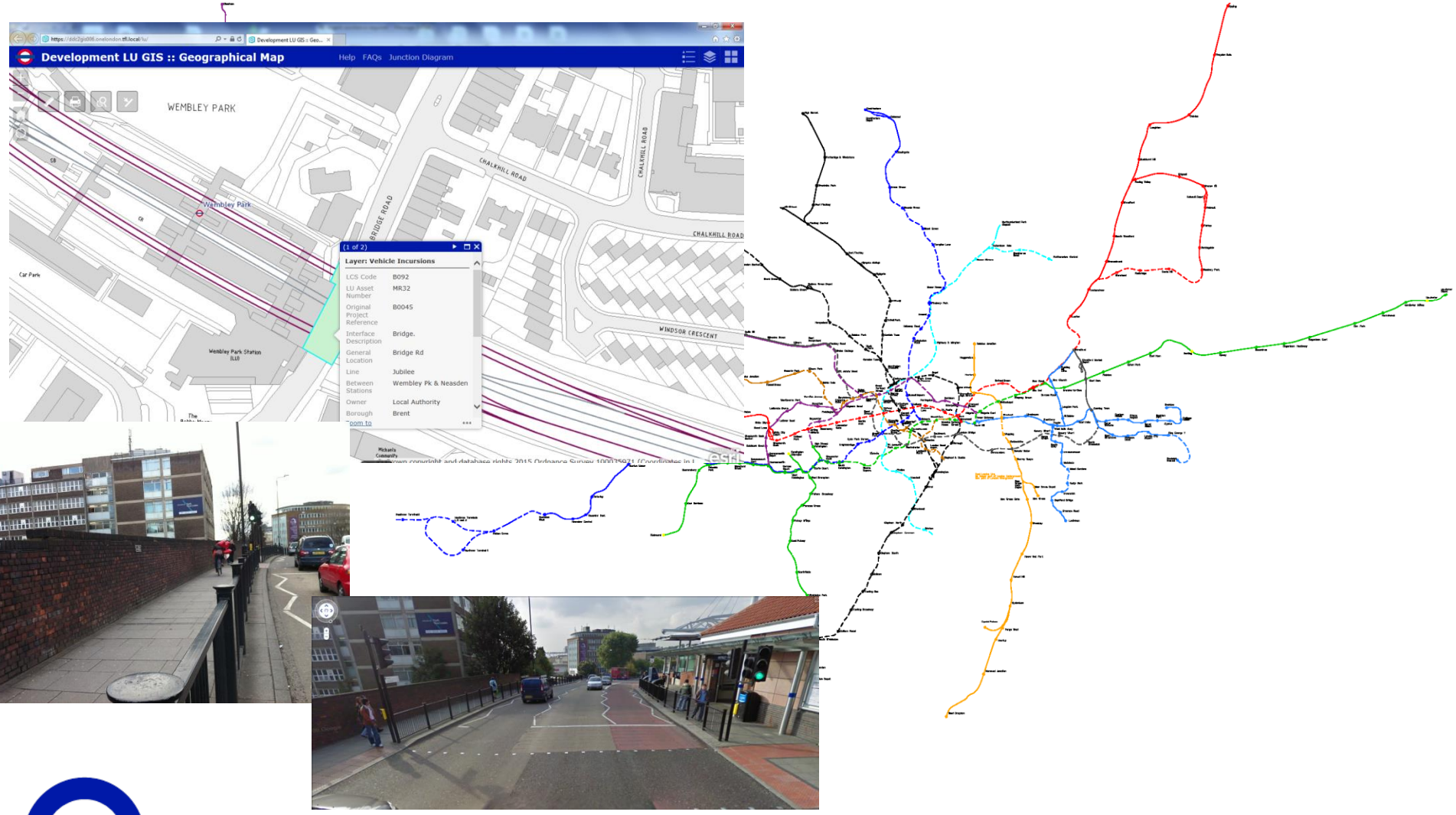
Northwick Park roundabout
01.04.2011



Northwick Park roundabout
15.06.2016

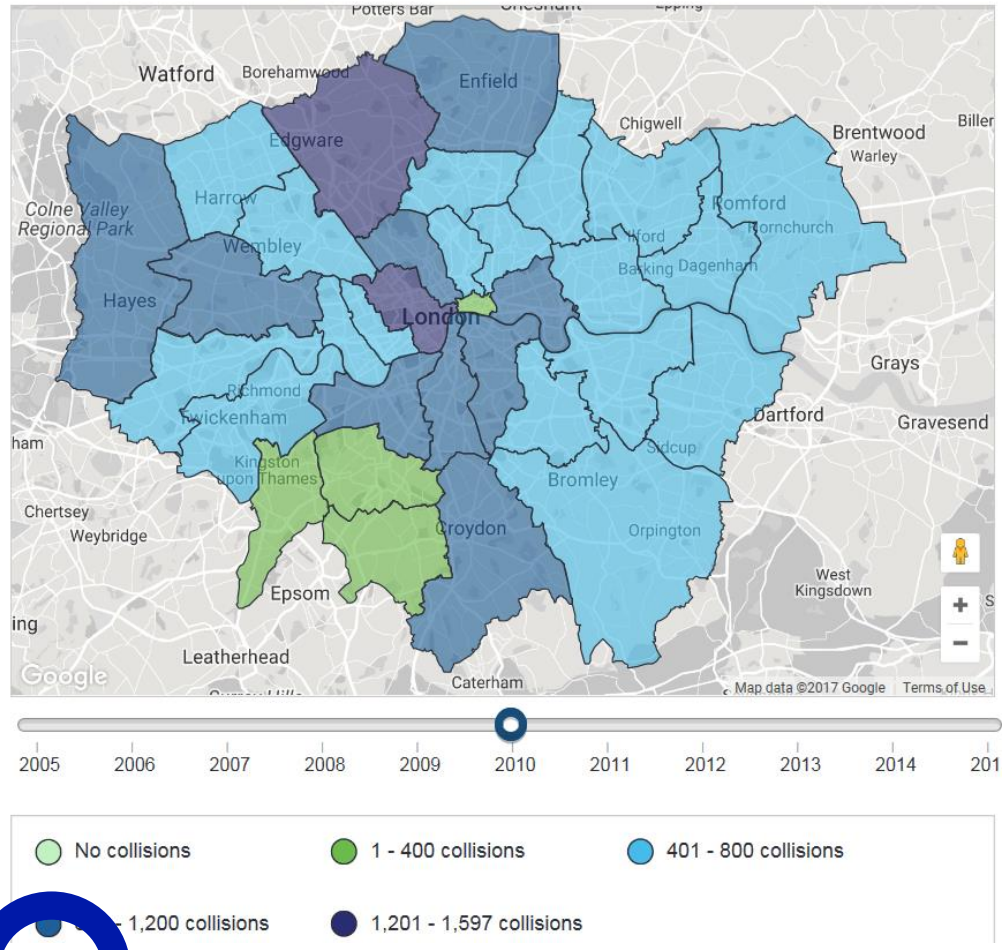
Barnet 17.10.2015

WHAT IS THE VEHICLE INCURSION RISK FOR LONDON UNDERGROUND NETWORK ?

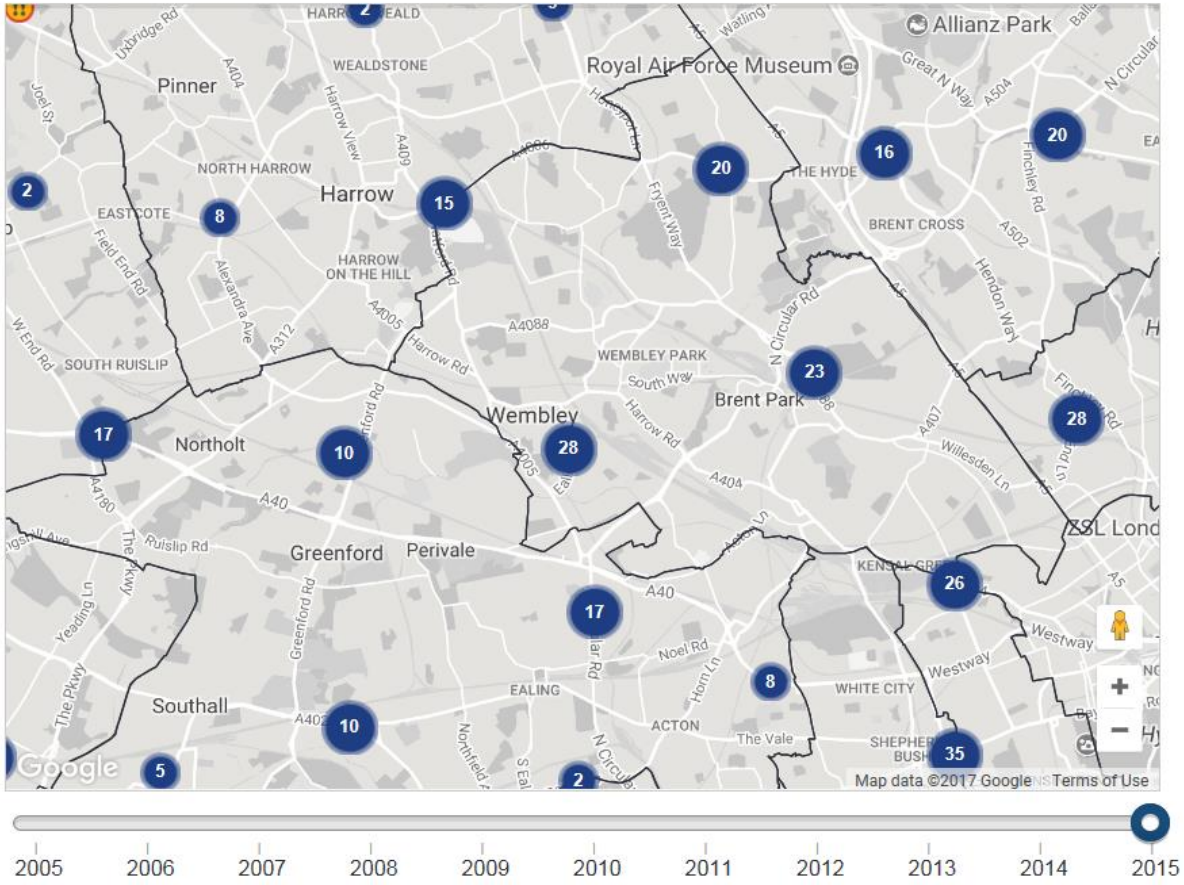


WHAT IS THE VEHICLE INCURSION RISK FOR LONDON UNDERGROUND NETWORK ?

Fatal, serious and slight collisions during 2010

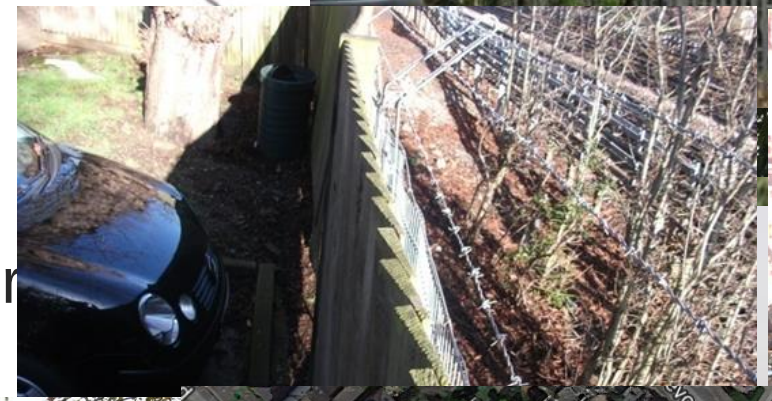


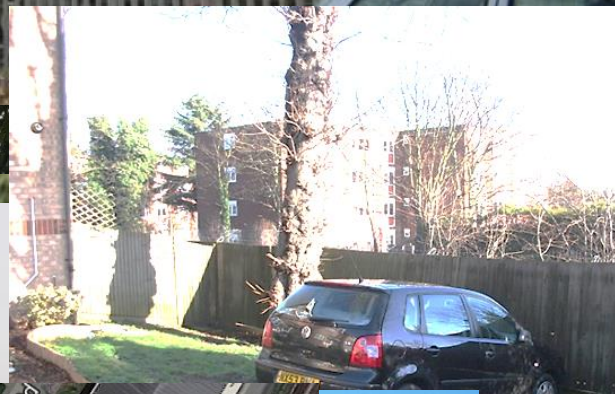
Fatal and serious collisions during 2015



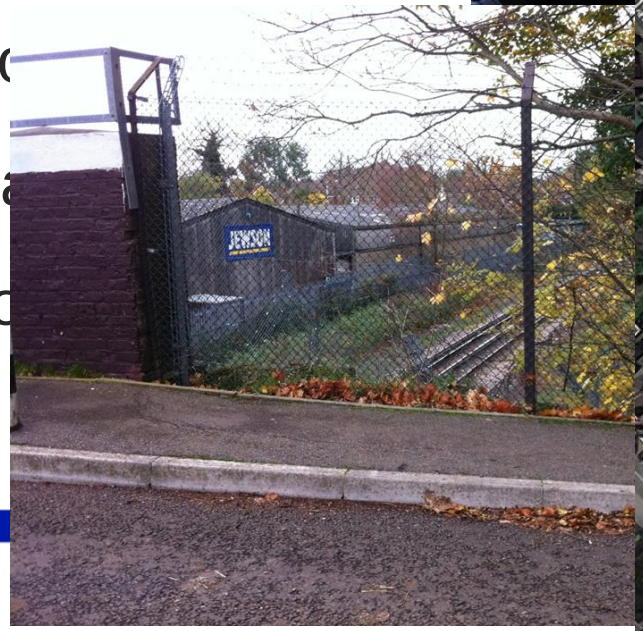
WHAT IS THE VEHICLE INCURSION RISK FOR LONDON UNDERGR

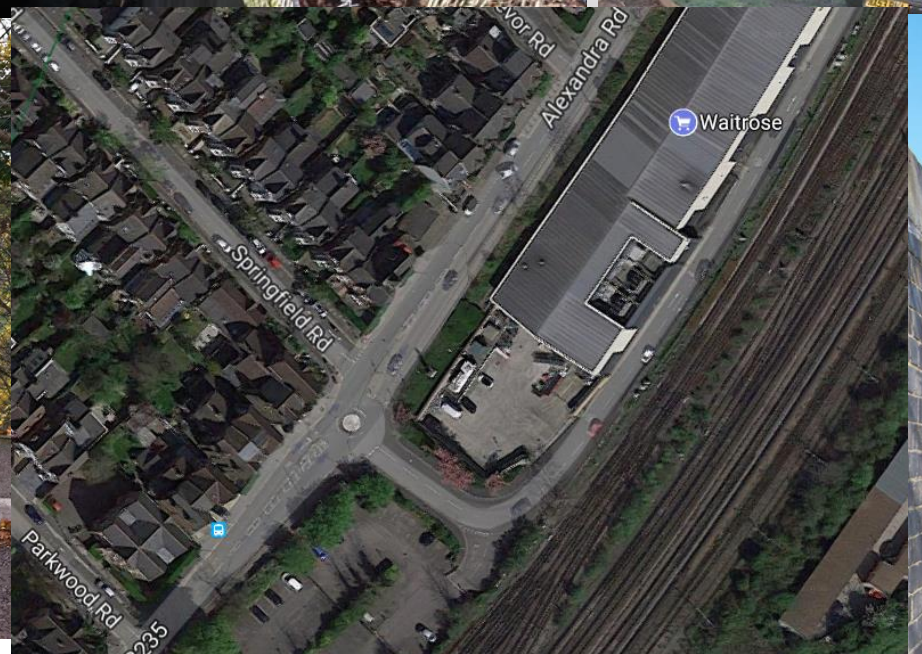
- Extended network
- Various types of interfaces
- Existing arrangements and degr

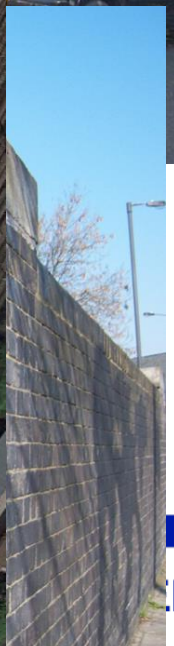


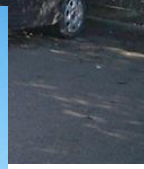


- Topography or c restrictions
- Frequency of tra
- Various stakeho

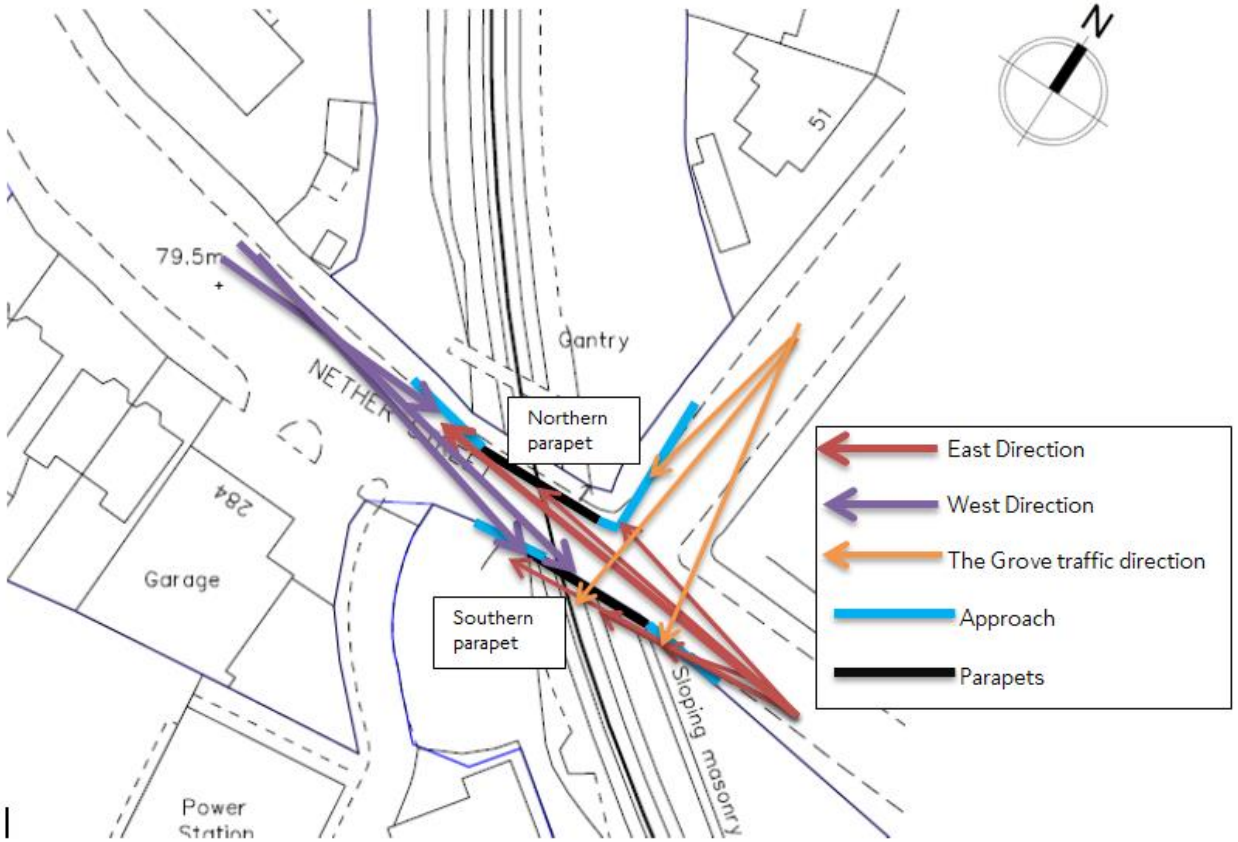








WHAT IS THE VEHICLE INCURSION RISK FOR LONDON UNDERGROUND NETWORK ?



Picture showing some of the possible events and different vulnerable locations

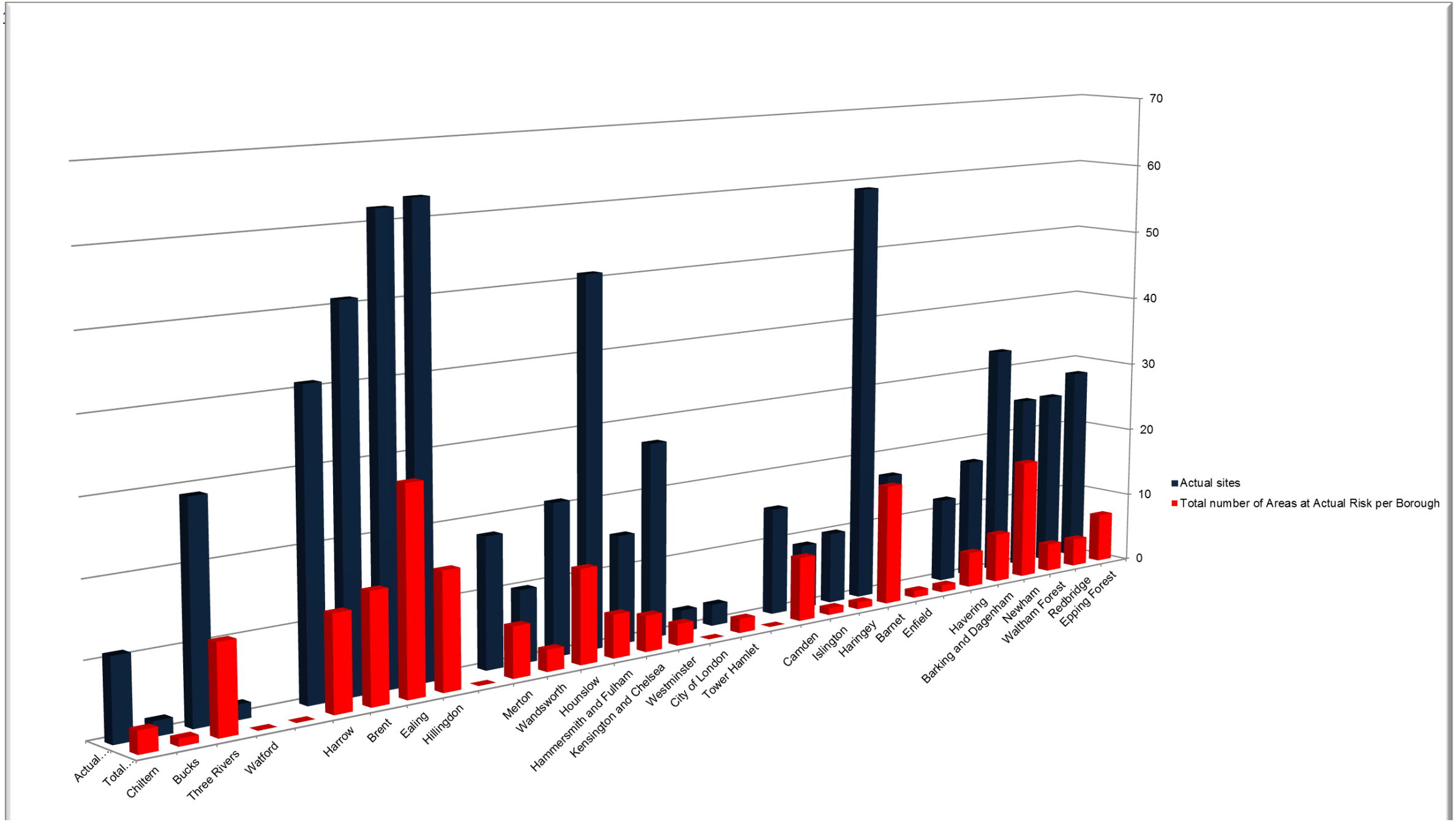
ASSESSING THE VEHICLE INCURSION RISK

"Managing the accidental obstruction of the railway by road vehicles" guidance (DfT guidance)

- Score
- Urban environment
- Causal factors
- Assessment factors
- Traffic incident history
- Traffic calming measures

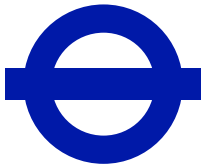
2017 review

Borough	Actual sites	Bridges	High Rated bridges	Actual bridges at risk	Junctions, kissing points	High Rated junctions, kissing points	Actual Junctions at risk	Dead ends/ car parks	High Rated Dead ends / parkings	Actual Dead Ends & Car parks at risk	Total number of Areas at Actual Risk per Borough
Epping Forest	28	8	4	3	4	2	2	10	1	2	7
Redbridge	25	4	1	2	8	1	1	7	1	1	4
Waltham Forest	25	6	2	3	1	0	0	6	0	1	4
Newham	33	11	9	6	10	10	10	1	1	1	17
Barking and Dagenham	17	5	3	4	2	2	2	3	0	1	7
Havering	12	5	3	3	0	0	0	7	1	2	5
Enfield	17	4	1	1	3	0	0	7	1	0	1
Barnet	59	15	12	13	8	2	2	32	2	2	17
Haringey	10	2	0	1	1	0	0	2	0	0	1
Islington	9	2	1	1	1	0	0	0	0	0	1
Camden	15	7	5	5	0	0	0	4	2	4	9
Tower Hamlet	3	3	2	2	0	0	0	0	0	0	2
City of London	3	1	0	0	0	0	0	0	0	0	0
Westminster	27	10	3	3	0	0	0	7	0	0	3
Kensington and Chelsea	15	4	4	4	1	1	1	1	0	0	5
Hammersmith and Fulham	51	8	5	6	2	0	0	14	0	0	6
Hounslow	21	9	7	8	2	2	2	5	2	3	13
Wandsworth	10	2	2	2	2	1	1	2	0	0	3
Merton	18	3	3	3	5	3	3	4	1	1	7
Hillingdon	63	16	10	14	3	0	0	32	2	2	16
Ealing	62	23	18	19	0	0	0	28	4	9	28
Brent	51	16	10	12	4	0	1	24	1	2	15
Harrow	41	12	8	9	7	1	2	17	0	2	13
Watford	2	0	0	0	0	0	0	1	0	0	0
Three Rivers	29	10	9	8	5	3	3	11	1	1	12
Bucks	2	1	1	1	0	0	0	0	0	0	1
Chiltern	11	3	3	3	0	0	0	7	0	0	3
Totals	659	190	126	136	69	28	30	232	20	35	201


70
60
50
40
30
20
10
0
Actual sites
Total number of Areas at Actual Risk per Borough
Actual…
Total…
Chiltern
Bucks
Three Rivers
Watford
Harrow
Brent
Ealing
Hillingdon
Merton
Wandsworth
Hounslow
Hammersmith and Fulham
Kensington and Chelsea
Westminster
City of London
Tower Hamlet
Camden
Islington
Haringey
Barnet
Enfield
Havering
Barking and Dagenham
Newham
Waltham Forest
Redbridge
Epping Forest

BASIC PRINCIPLES

- Road Rail Interface Safety is a shared issue
- Prevention is better than protection
- Cost of a measure is less than the cost of an accident
- Budget is always “elusive”



- COMMUNICATION IS A KEY ISSUE
- COLLABORATION ON CERTAIN LOCATIONS WOULD REDUCE THE COSTS

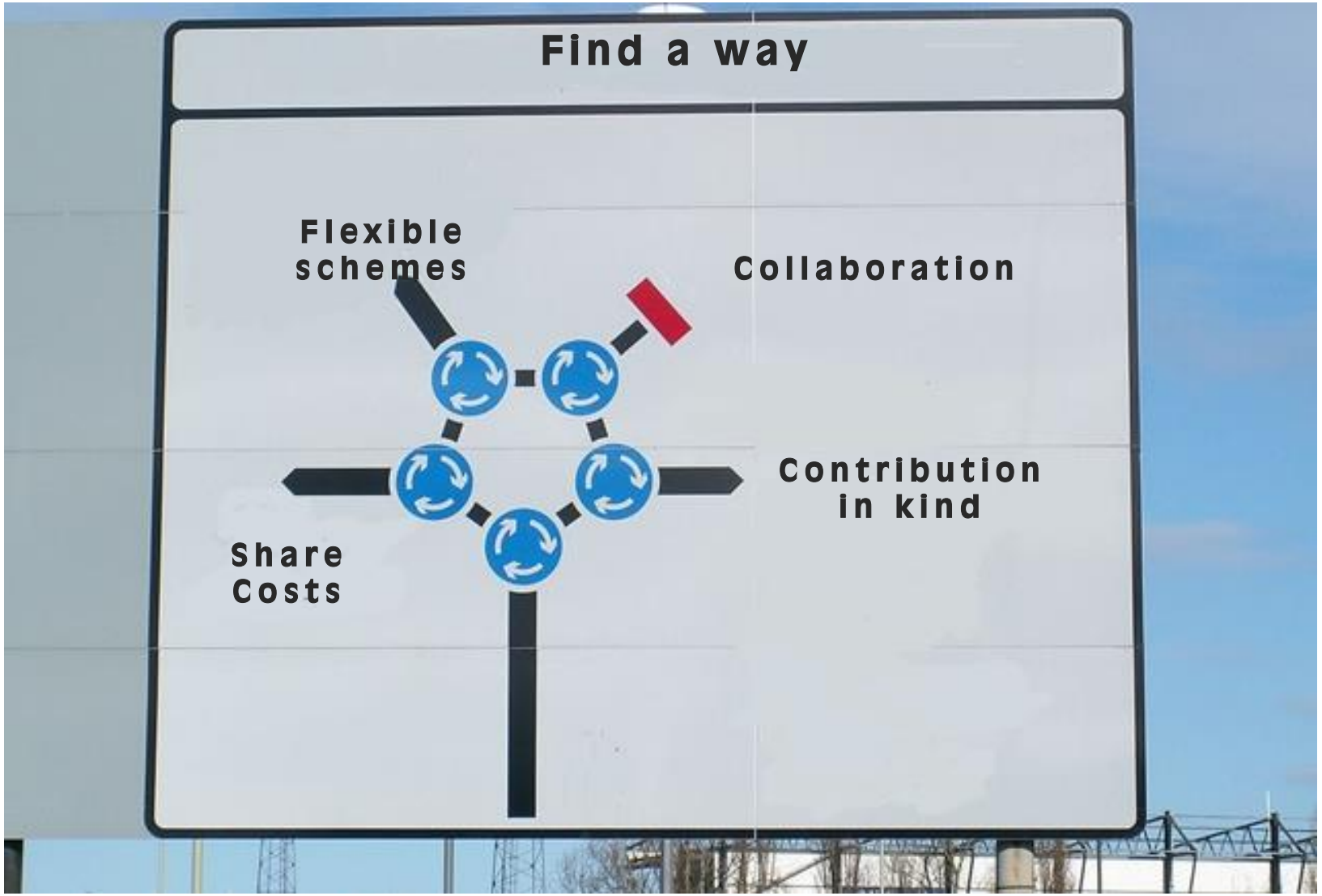
Shared risk+ DfT guidelines+ **?** = Vehicle Incursion Risk reduction

What is safe enough ?

$\uparrow Safety$
COST
$\downarrow Risk$

$$R = \frac{S}{C}$$

Design
Construction
Maintenance




700
Moorgate
Hammersmith & City line

Thank you


parapet
share
cooperation
consensus
risk
barrier
brief
safety
participate
facilitate
interface
bollards
improve
support
contribution
collaboration
engage
road
assist
concord
rail
provide
coordination
approach

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