

# The Environmental Capacity of Streets – 50 years on

Transport Solutions Wales 2013

Thursday 2<sup>nd</sup> May 2013

By Robert Spriggs

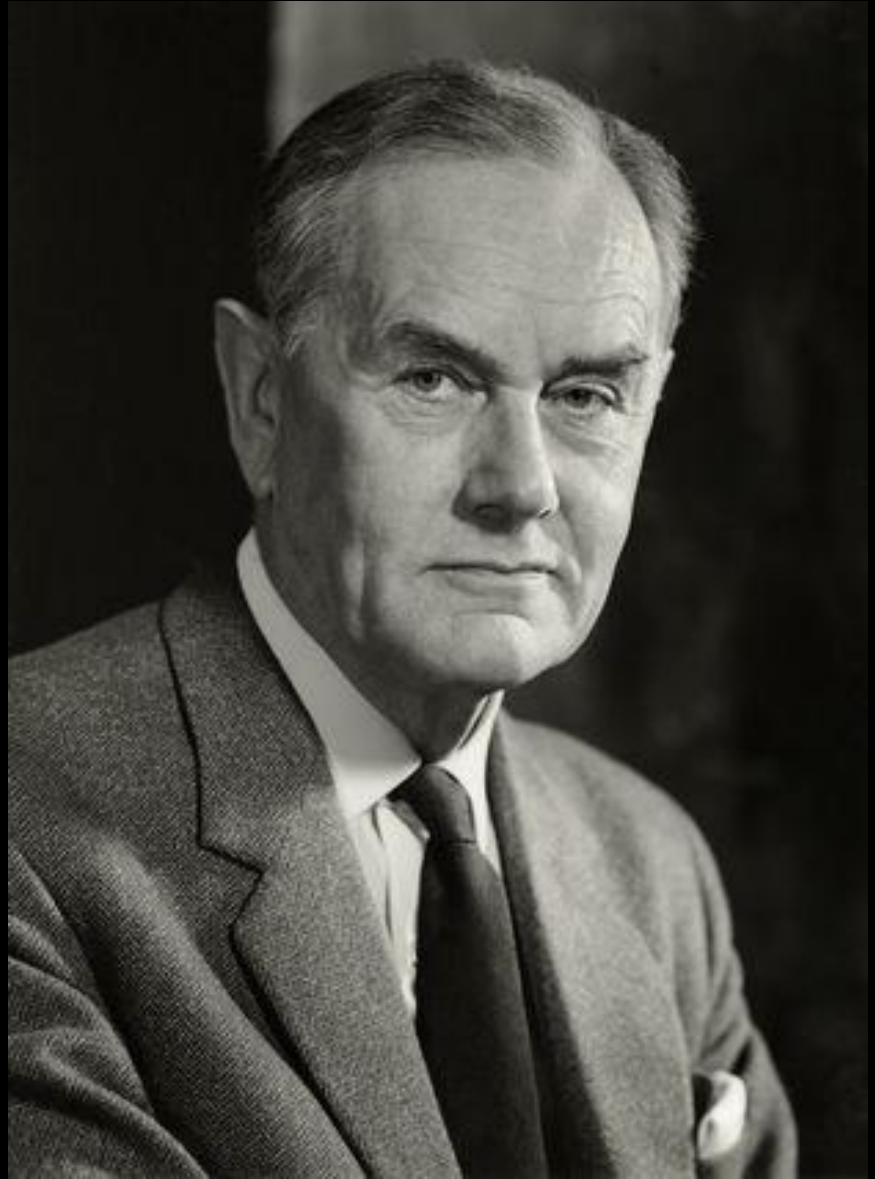
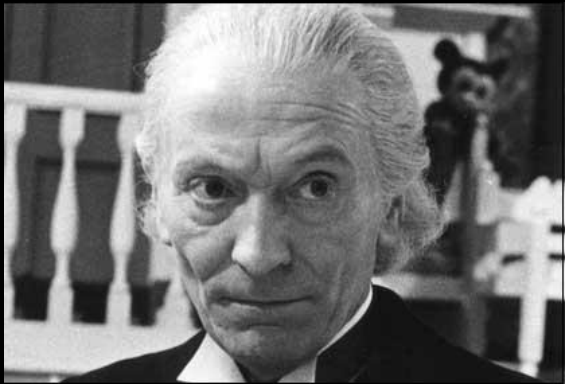
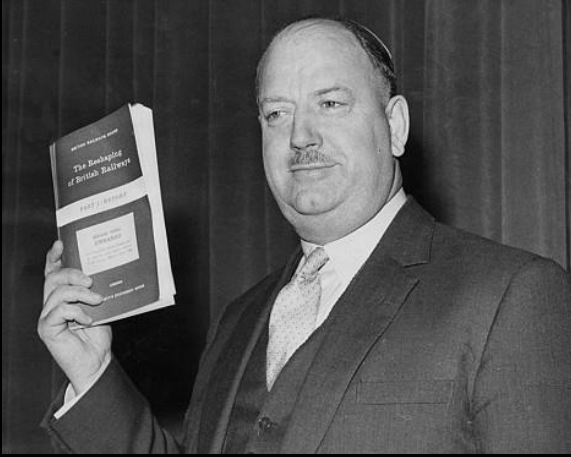




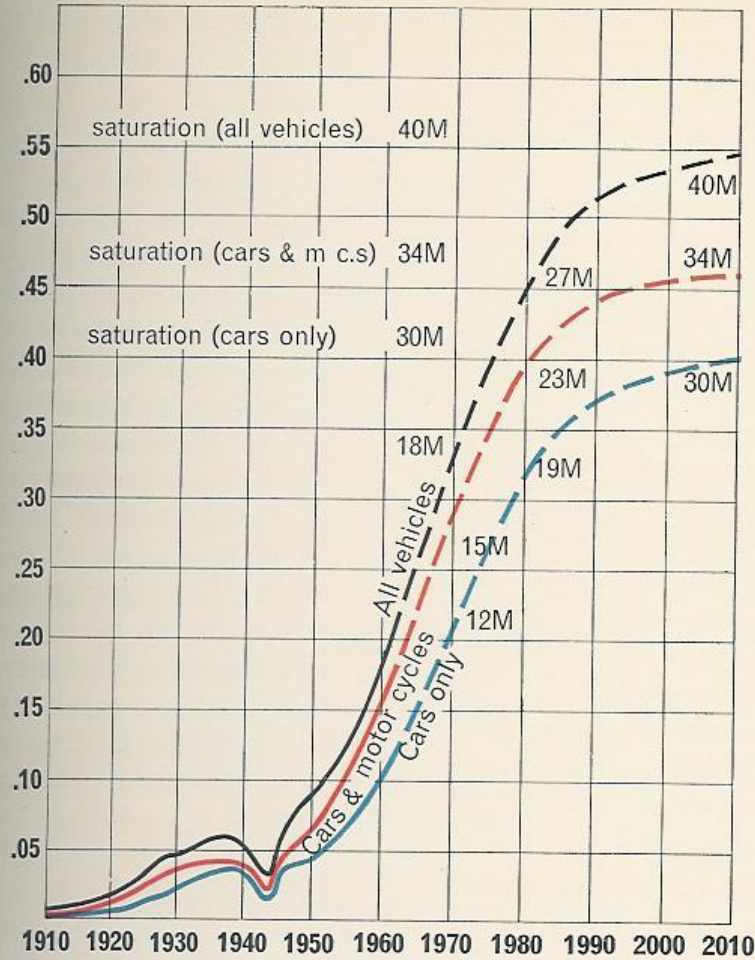
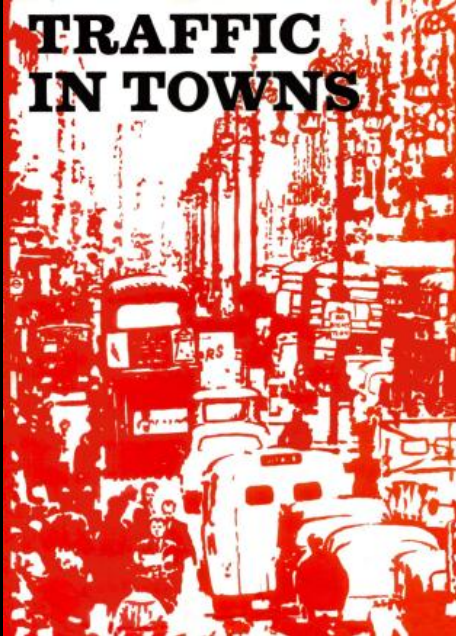
## London Road, Bath

- 24,500 vpd
- 6% HGV
- AQMA declared



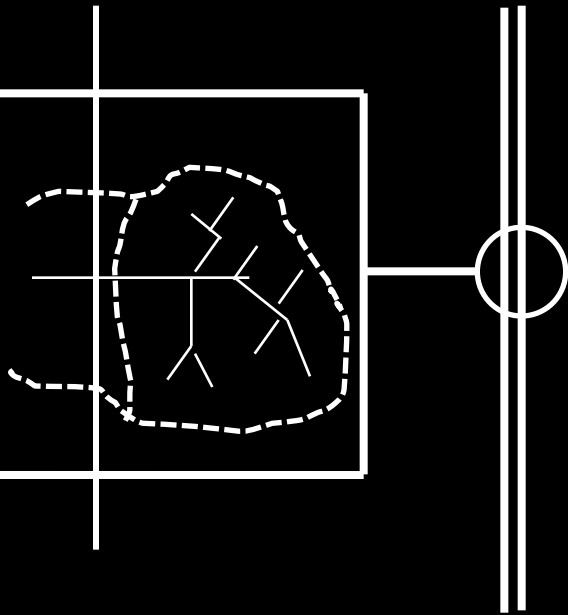


# Traffic in Towns

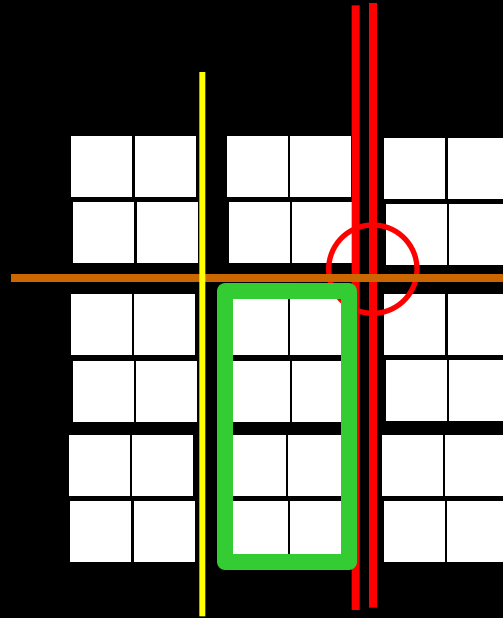


# Polarised opinion

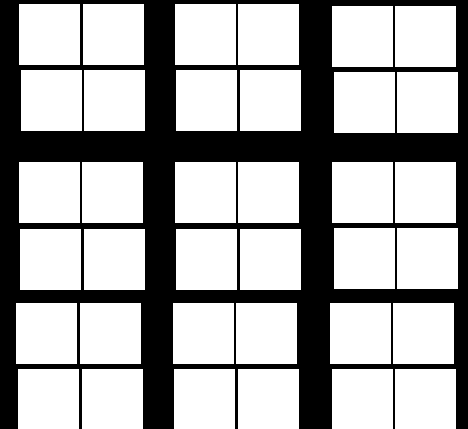
Le Corbusier



Buchanan

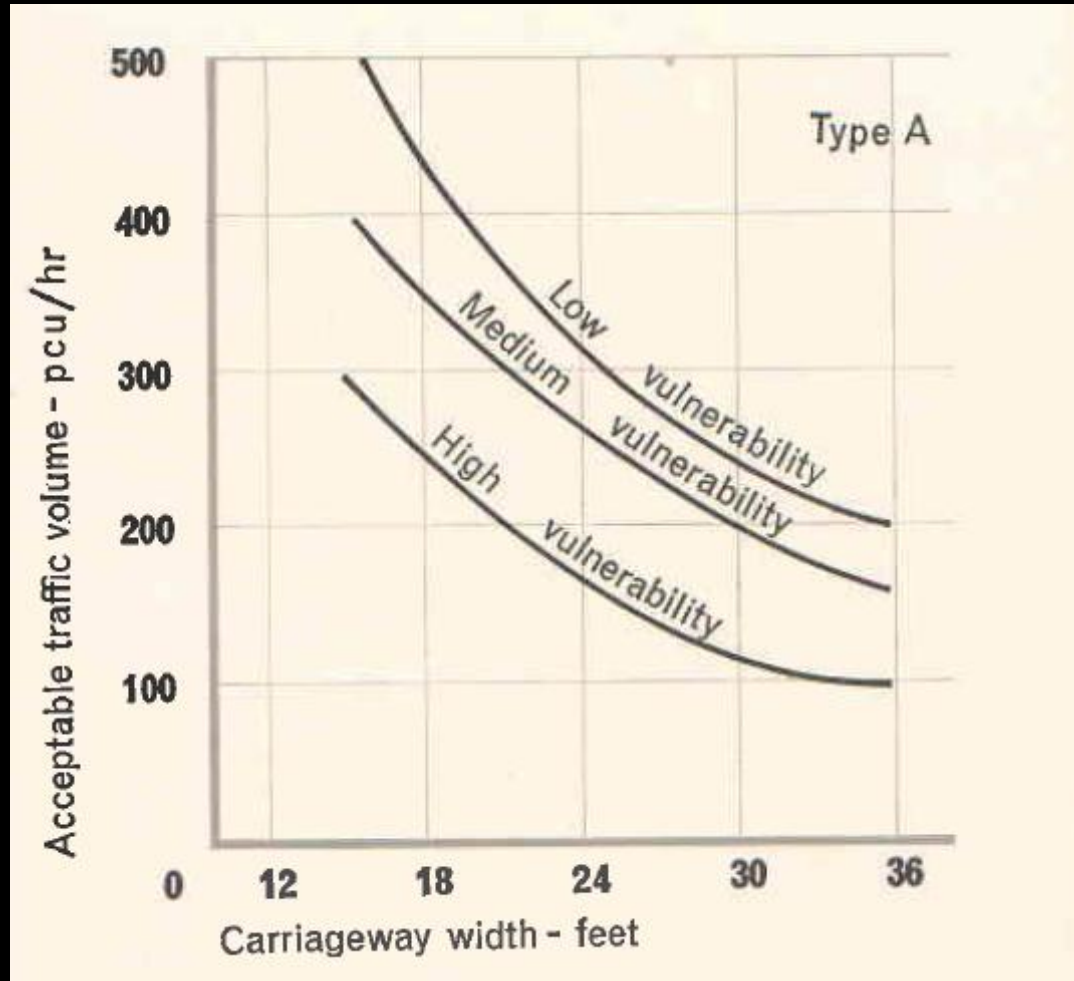


Jacobs





# Buchanan's Theory



Width (metres)	3.7	5.5	7.3	9.1	11.0
DMRB UAP3	-	1100	1300	1530	1620
DMRB UAP4	-	900	1140	1320	1410

# Buchanan's Theory

Accessibility [A]		Environment [E]	
Item	/ Score	Item	/ Score
Safety	40	Safety	60
Convenience	15	Convenience	15
Distribution	25	Comfort	15
Directness	20	Appearance	10
TOTAL	100	TOTAL	100

$$\text{Accessibility} = \frac{\text{Crude Capacity} \times A}{\text{Potential Generation}}$$

$$= \frac{1600 \times 54}{1250}$$

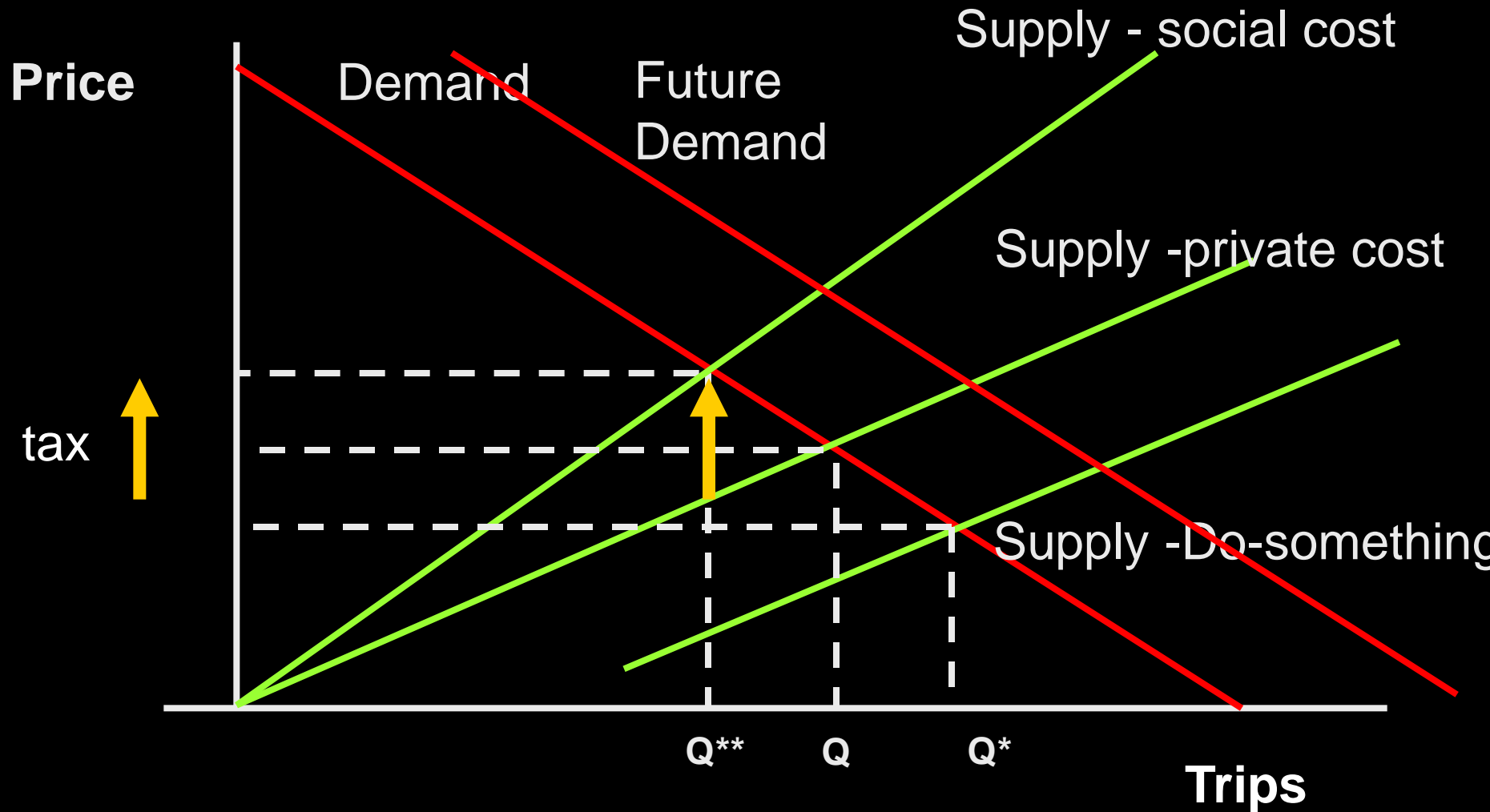
$$= 69$$

$$\text{Enviro Capacity} = \frac{\text{Crude Capacity} \times E}{100}$$

$$= \frac{1600 \times 38}{100}$$

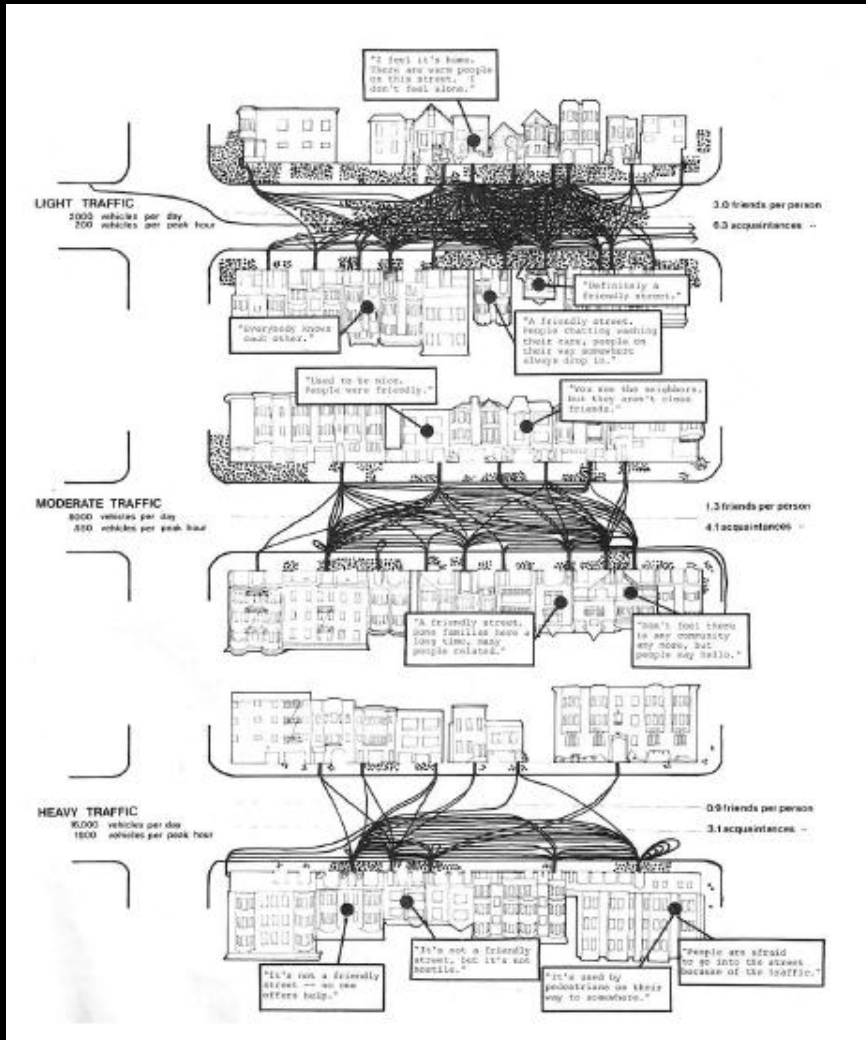
$$= 608$$

# Supply and demand





# Evidence



## Buchanan

- Up to 300 to 400 vph
- Approx. 2,000-3,000 vpd

## Appleyard

- Light traffic 2,000 vpd

## Traffic’s Human Toll

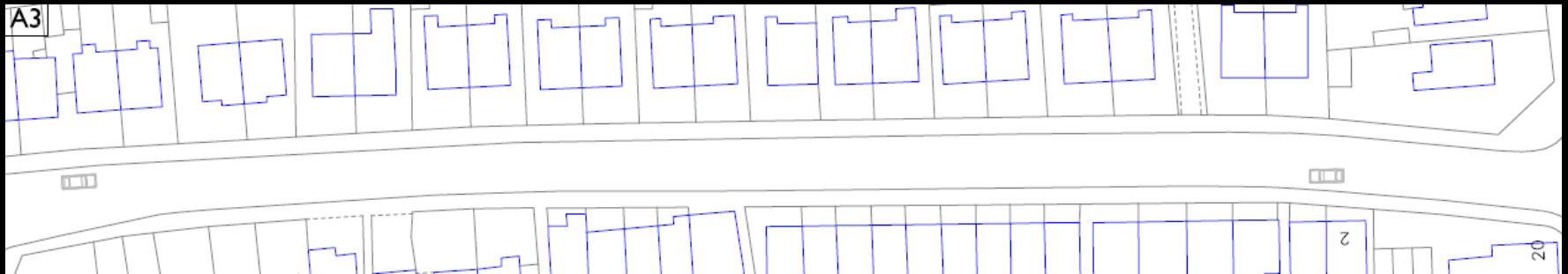
- Light traffic < 1,000 vpd
- Medium traffic 2,000 – 3,000 vpd
- Heavy traffic >5,000 vpd

## Manual for Street

- Shared space <100vph
- (1000 per day)

## DMRB 11.3.8

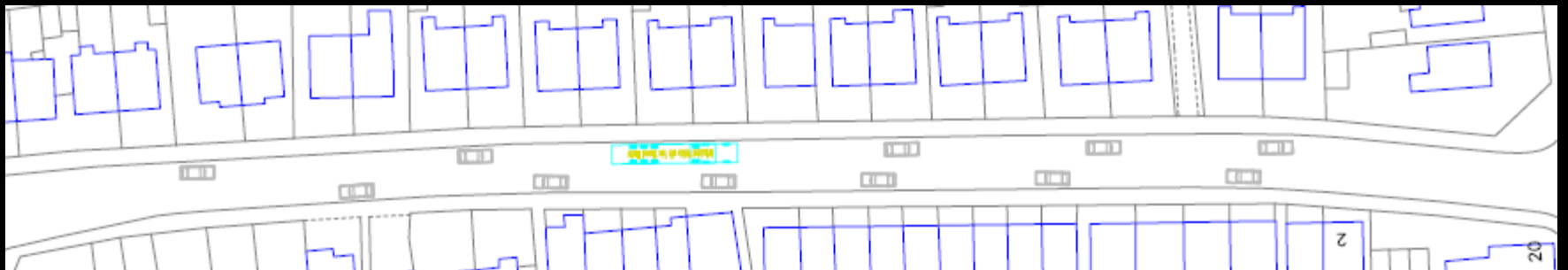
- <8,000vpd severance relief not significant



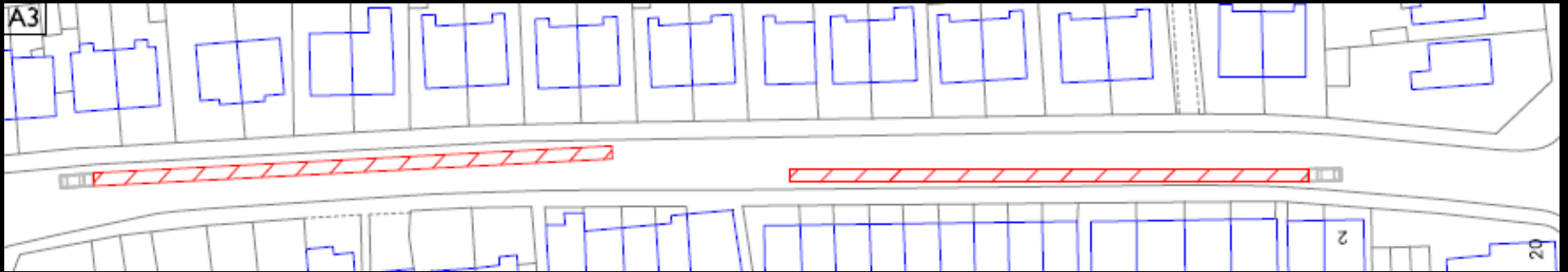
400 vehicles per hour (2-way)



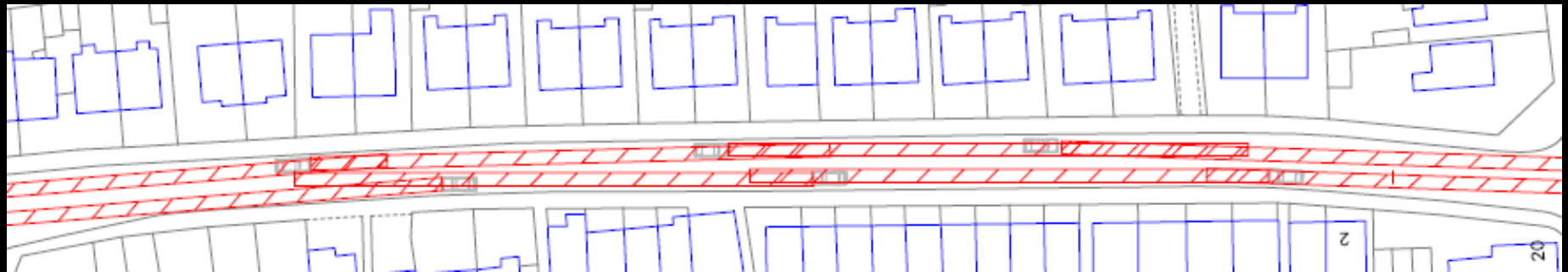
1500 vehicles per hour (2-way)



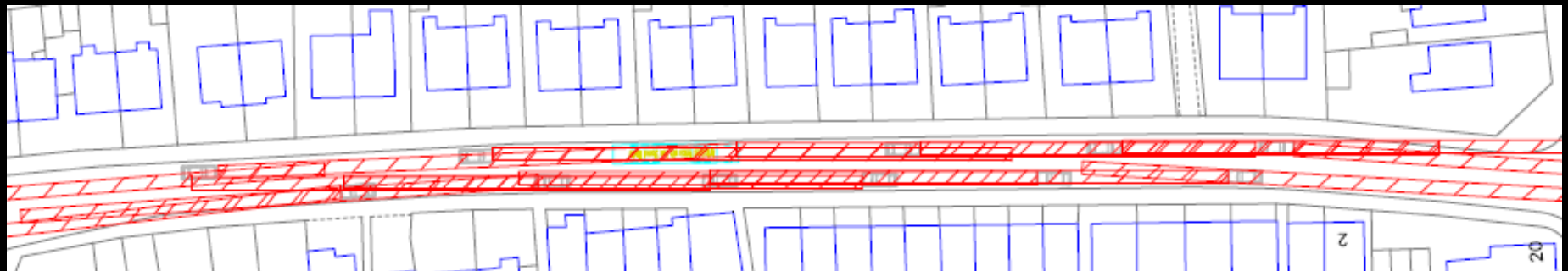
3000 vehicles per hour (2-way 8% HGV) > capacity?



400 vehicles per hour (2-way)

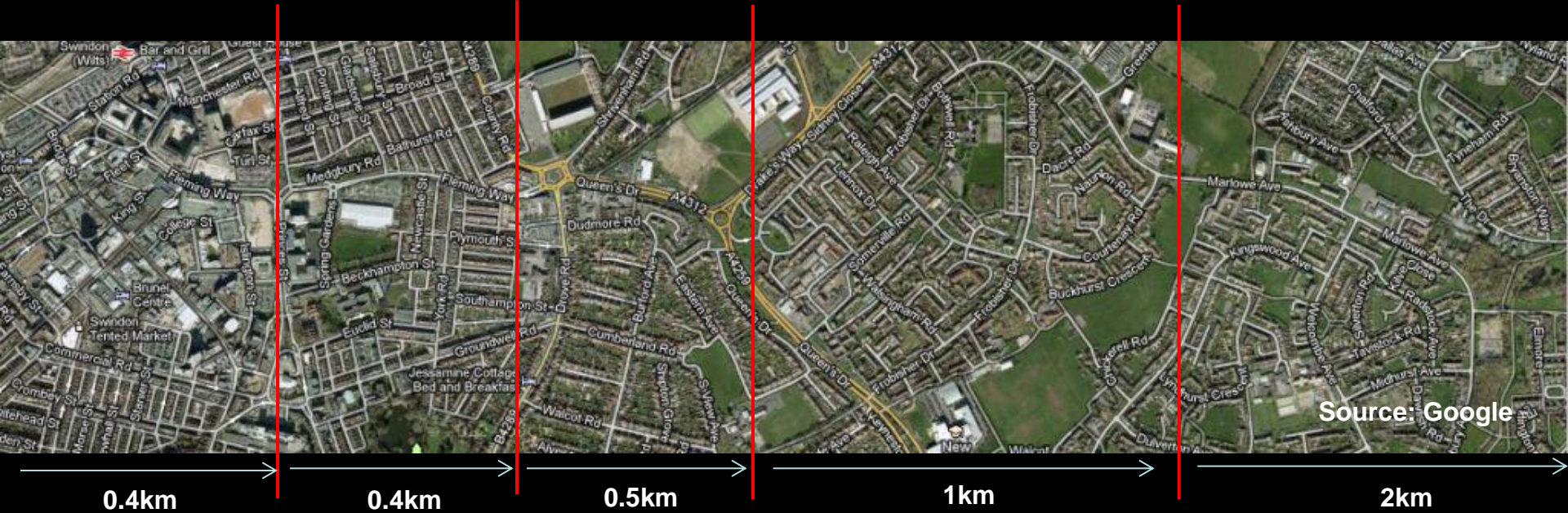


1500 vehicles per hour (2-way)



3000 vehicles per hour (2-way 8% HGV) > capacity?

# Form and function



Source: Google

## SWINDON



c1900

c1950

c1960

c1970

c1980

Source: Marshall

# Today's Approach

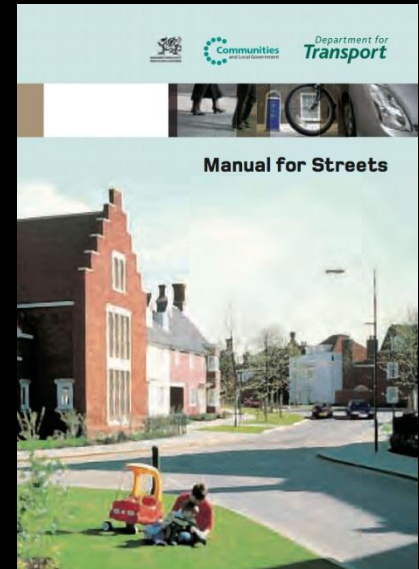
## Manual for Streets 1 & 2

- Movement v place status
- Quality Audits

## TAG Objectives

- Environment
  - Environmental Capital
- Safety
- Economy
- Accessibility
  - Social and Distributional Impacts of Severance
- Integration

BUT mostly qualitative

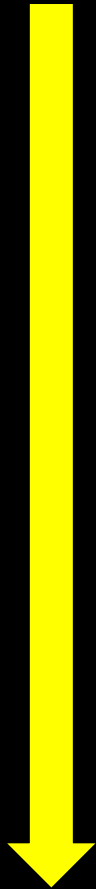




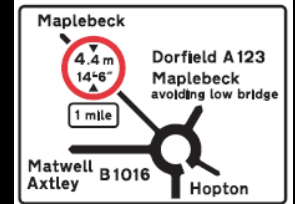
Traffic capacity  
HIGH

# Control measures

- No pedestrians
- Planned – road hierarchy
- Road space allocation
- Regulatory
- Operational (e.g. signals, zebra)
- Fiscal – charging
- Pedestrian zones
- No vehicles



LOW





# Conclusion

- Buchanan – a valid approach
- Absolute traffic flow, not proportional change
- Today methods complex & qualitative
- Subconscious application
- Refine our methods



Matt Smith as Dr WHO Source: [bbb.co.uk](http://bbb.co.uk)

**Robert Spriggs (Transport Director)**

[www.callidusgroup.co.uk](http://www.callidusgroup.co.uk)

