Community severance Valuation tool

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on behalf of the *Street Mobility and Network Accessibility project* team

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How bad is this? (from 0 to 100)

How much would you pay to have this instead?

How is community severance measured by the government now?

"The overall assessment [of severance] is likely to be **large** where change in severance is **large** and affects a **moderate or high** number of people or the total numbers of people affected across all levels of severance is **high** (greater than 1,000, say)"

WebTAG Unit A4.1.

"People are **likely to be** deterred from making pedestrian journeys to an extent sufficient to induce a reorganisation of their activities. In some cases, **this could lead** to a change in the location of centres of activity or to a permanent loss of access to certain facilities for a particular community. Those who do make journeys on foot will experience **considerable** hindrance"

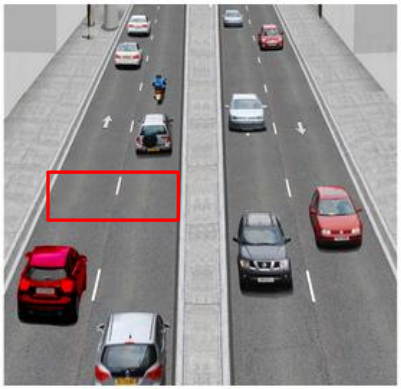
Street Mobility method: stated preference survey

Exercise 1

Traffic density: **Medium**

Central reservation with no guard railing

ACTUAL SPEED 40MPH



Cross at this point

(not at pedestrian crossing)

Option A

OR

Use covered over road

Adds 8 minutes to your journey

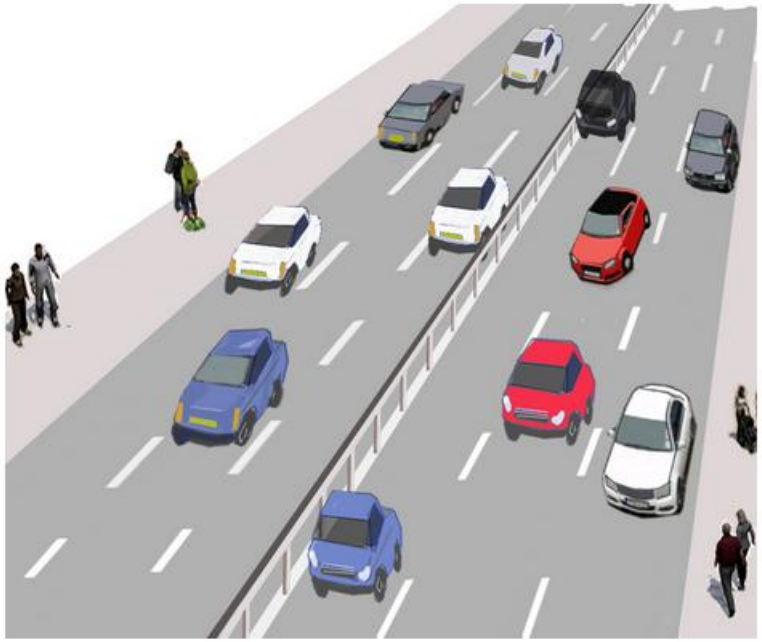
Option B

OR

Don't make this trip

Option C

Exercise 2



Option A		Option B		Option C
Use signalised pedestrian crossing - straight Adds 6 minutes to your journey	OR	Use footbridge (with steps and ramp) Adds 10 minutes to your journey	OR	Don't make this trip
Option A		Option B		Option C

Exercise 3

Traffic density: **High**

Central reservation with no guard railing

ACTUAL SPEED 20MPH

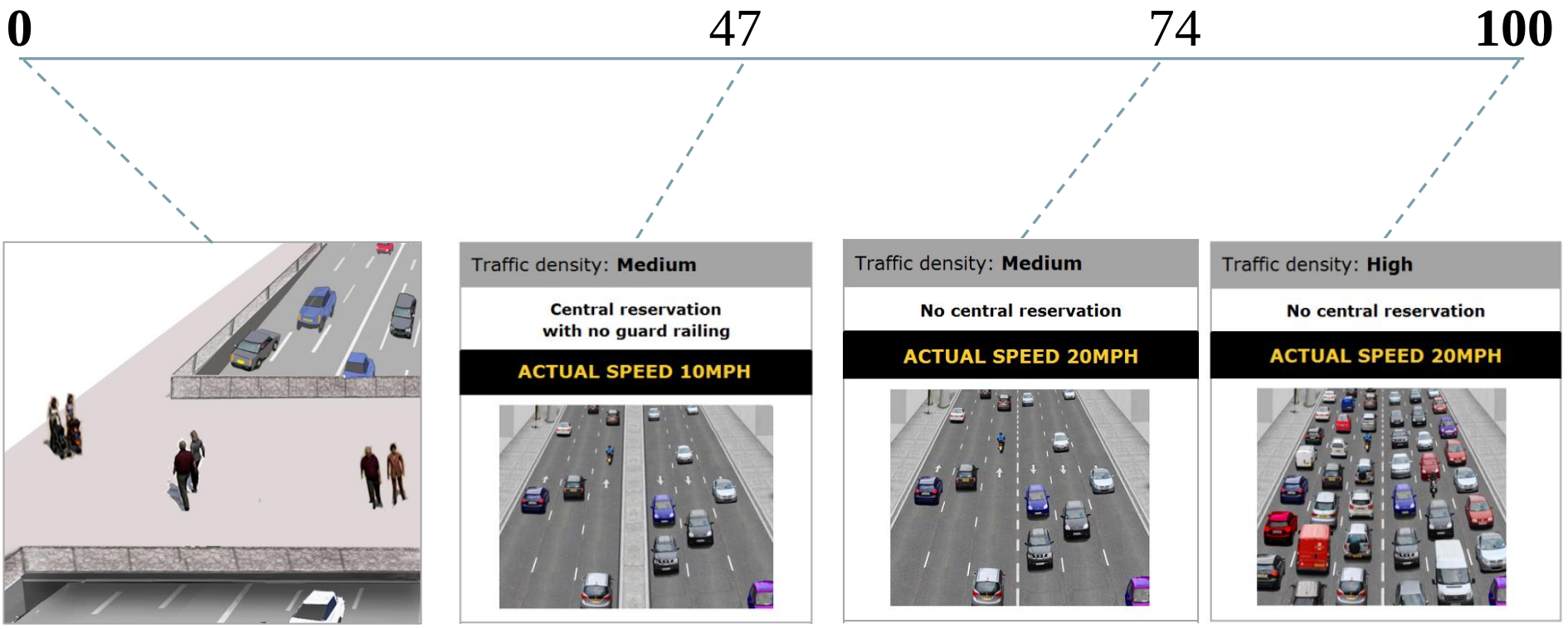
In this scenario, which of the two options would you choose?

Option A	Option B
Cross at this point Saving £1.20 off your one-way ticket cost	Do not cross the road and pay the higher ticket cost

○ Option A ○ Option B

Severance index (examples)

Disutility of crossing the road comparing with disutility of not making the trip



Benefits of interventions

Potential intervention	Benefit per trip
3 → 2 lanes (each direction)	£1.39
2 → 1 lane (each direction)	£1.11
Add central reservation	£1.12
High → medium traffic density	£0.94
Medium → low traffic density	£0.83
Speed below 30mph	£0.49
Footbridge → straight pelican	£0.11
Underpass → straight pelican	£0.51

Tool (under development)

ROAD

Green: cells to be edited

How long is the section of the road? 2000 meters (between 100 to 2000m)

Use the dropdown menus to select the characteristics of the road, or choose one of the built-in options

	CURRENT SCENARIO	FUTURE SCENARIO
Number of lanes (in each direction)	3	3
Central reservation	no	no
Traffic density	high	medium
Traffic speed	20mph	20mph

Built-in options
Click on buttons

CURRENT SCENARIO		FUTURE SCENARIO		
Best possible conditions	**Worst possible conditions**	**Best possible conditions**	**Worst possible conditions**	**Same as current**

Tool (under development)

PEDESTRIAN CROSSINGS

The segment below represents the road. Use the dropdown menus in each cell in the segment to choose the approximate locations of the available pedestrian crossings, or choose one of the built-in options

LEGEND

- P Straight pelican crossing
- S Staggered pelican crossing
- F Footbridge
- U Underpass

CURRENT SCENARIO	FUTURE SCENARIO
S U S	S S S

Built-in options

Click on buttons

CURRENT SCENARIO			FUTURE SCENARIO			
No crossings	One in the middle: P S F U	One in each extreme: P S F U	No crossings	One in the middle: P S F U	One in each extreme: P S F U	Same as current scenario

Tool (under development)

OUTPUTS

UTILITY AND TRAVEL BEHAVIOUR

	CURRENT SCENARIO	FUTURE SCENARIO	CHANGE
Severance index (disutility of crossing the road)	100%	74%	-26%
Willingness to walk to avoid crossing the road (mins.)	22.6	15.7	-6.9
Probability of crossing the road (no facilities)	0.2%	1.0%	0.8%
Probability of crossing the road (using facilities)	95.0%	99.0%	4.0%
Probability of not making the trip	5.0%	0.5%	-4.5%

BENEFITS, per person

Benefit of improving crossing conditions, per trip	£0.94

TOTAL NUMBER OF WALKING TRIPS, per year

	CURRENT SCENARIO	FUTURE SCENARIO	CHANGE
Number of trips crossing the road (no facilities)	5,200	26,000	20,800
Number of trips crossing the road (using facilities)	2,470,000	2,574,000	104,000

TOTAL BENEFITS, per year

Total benefit of improving crossing conditions	£2,586,189

Disaggregation by age, gender, and trip purpose

Thank you for your attention!

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