STREET MOBILITY PROJECT
Valuation Tool

ROAD CHARACTERISTICS: VEHICLE LANES, CENTRAL RESERVATION, TRAFFIC VOLUMES, TRAFFIC SPEEDS

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STREET MOBILITY PROJECT TOOLKIT: MEASURING THE EFFECTS OF BUSY ROADS ON LOCAL PEOPLE

This document contains information about one of the tools that we have developed so that local government and local communities can assess community severance in their area.

MEASURING AND VALUING THE NEGATIVE EFFECTS OF BUSY ROADS ON LOCAL PEOPLE

What it is

This tool calculates the potential negative effects of busy roads on pedestrian behaviour, and estimates the monetary value or cost of those effects, for different road designs and traffic conditions, and groups of people. The tool will be available for download before the end of 2017.

Why it is useful

The tool can be used to obtain quantitative indicators of community severance, suitable for inclusion in formal transport appraisal, which currently only uses qualitative measures to assess severance (DfT WebTAG Unit A4.1). The tool can estimate the barrier effect of busy roads and the effectiveness of different types of policy intervention in reducing severance, for example alterations to road design, measures to control traffic levels or reduce traffic speed, and changes in the type or spacing of pedestrian crossing facilities.

The results can also be used in a 'distributional impact appraisal' (WebTAG Unit A4.2), since they can be broken down by age, gender, and other characteristics.

SCREENSHOT OF AN INPUT PAGE OF THE VALUATION TOOL

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How to do it

The inputs for the tool are:

- *Road and traffic conditions in a given road segment*: number of lanes for motorised vehicles, presence/absence of a central reservation (median strip), traffic levels (low, medium, or high), and average traffic speeds (10, 20, or more than 20 mph).

- *Pedestrian crossing facilities*: type of crossing (signal controlled, footbridge, or subway) and the location of these facilities on a road segment.

- *Local population*: data on the population living within a defined walking distance of the road (both overall profile and broken down by gender and age group).

The outputs are:

- *Severance index:* a measure of the 'disutility' for pedestrians who would like to cross a road with the traffic and design characteristics as defined in the inputs.

- *Value of severance:* an indication of the monetary cost of that disutility per trip, for different population groups.

- *Willingness to walk further:* how many minutes pedestrians are willing to walk, on average, to avoid crossing a road with particular characteristics.

- *Crossing behaviour*: the probability that someone would do any of the following in the absence of road crossings, on roads with particular characteristics:

    - Cross the road;

    - Walk further to cross using a crossing facility;

    - Avoid crossing.

All these outputs can be broken down by age, gender, walking trip purpose, and other personal and situational factors.

The user can assess the impacts of a potential intervention by comparing the current scenario with a different scenario, altering road and traffic conditions, or the type and spacing of crossing facilities.

Resources needed

Users need the information necessary for filling the inputs section: local road and traffic conditions; existing type and location of crossing facilities and population characteristics – readily available from Census data.

Further information

The tool will be provided with a user guide.
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