Pedestrian Network Guidance - Ways to assess future demand for walking

TECHNIQUE	DESCRIPTION	BENEFITS	LIMITATIONS	APPLICATION
Similar Conditions Study	• Carrying out surveys before and after a scheme is installed. The change in pedestrians is assumed to be due to the scheme. The results are then used to predict the trip generation of similar improvements in another location.	• Simple. • Easy to understand. • Easy to apply.	• Only provides a rough estimate of demand. • Difficult to find comparable sites where all factors are similar (including environmental and social). • May reflect changes that are unrelated to the • scheme (such as weather or nearby changes to the road).	• Before and after surveys are a useful part of monitoring, so the necessary database can be built up over time.
Aggregate Behaviour	• Developing models/equations by relating the known characteristics of a population to observed numbers of walking trips. • The equations are then applied to other areas to predict walking trips.	• Fairly straightforward to apply using spreadsheets. • Can be easily updated as new information emerges. • Can also be used to identify the factors that most influence walking. • Certain data is already collected (population characteristics and land-use). • Can be used to forecast trips over a wider area.	• Wide variety of possible influencing factors may mean some issues are overlooked. • Models need to be validated before use. • Sufficient data capturing all possible factors may not be readily available. • Not suitable to assess the impacts of small-scale schemes. • Using aggregate data does not take into account individual factors. • May not be transferable to different areas.	• Useful for a major area-wide study, but otherwise may be too expensive compared with the cost of the schemes being considered.
Sketch Plan	• Using regression to predict the number of walking trips as a function of (usually) physical factors such as adjacent land uses and/or other trip generation indicators (parking capacity, public transport patronage, traffic movements). These are then applied to other areas.	• Straightforward to understand and apply using spreadsheets. • Makes good use of data that already exists or can be easily collected. • Can be applied to trips within specific corridors. • Can be very accurate, particularly for high-density areas. • Can be used to determine the location of improvement schemes and for prioritising. • Can be easily updated as new information • emerges.	• Disregards some issues that affect walking (such as environmental factors). • Does not consider latent demand. • Validation is required before use as models may be location specific. • Using aggregate data does not take into account individual factors.	• An easy way to get a rough estimate of potential use. Initial focus on relating the percentage of walking trips to the local population and major trip generators.
Discrete Choice	• Predicting an individual's decision to walk, and their route choice, as a function of other variables including changes in facilities provided or in policies/ strategies. The model is then applied across the wider population to estimate total trips.	• Can be very accurate if based on local data. • Very good at isolating the effects of specific factors. • Can be used to relate factors (such as whether age affects crossing facility preference). • Takes into account individuals' preferences. • Models can be used to derive elasticities (the percentage change in walking expected as a result of changing any other factor).	• Can require extensive data collection. • Requires considerable modelling expertise. • Wide variety of possible influencing factors may mean some issues are overlooked. • Not easily transferable to different geographic areas.	• Very resource intensive. Useful for a major scheme investigation, but otherwise may be too expensive.
Travel Models	• Employing the 'traditional' four-step travel demand model, using land use conditions and transport network characteristics to predict future walking travel patterns.	• Models may already exist and be capable of adaptation. • Provides an integrated framework for considering walking. • Can be a very powerful tool. • Model outputs can become inputs for sketch plans.	• Spatial scale of existing models may be too great. • May require considerable data collection. • Models require specialised software and a high degree of expertise.	• Can be effective if existing models exist or creating a new model as part of a long-term investment in walking. Building new models for only small projects is costly.