



DEVELOPMENT OF SCHEME EVALUATION SYSTEM

4. DEVELOPMENT OF SCHEME EVALUATION SYSTEM

4.1. Overview

4.1.1. Each identified mitigation option is subject to a comparative evaluation whereby the most optimum option for an identified road section is recommended for implementation, subject to the availability of funds and government resources. The analysis comprises evaluation of three main categories of attributes of the scheme as below:

4.2. Engineering Category

- Traffic engineering considerations
- Traffic management during construction
- Buildability
- Safety

4.3. Environmental Category

- Noise Impact
- Air Quality Impact
- Landscape Impact
- Visual Impact

4.4. Cost Category

- Cost-effectiveness

4.5. Weighting for Comparison of Schemes

4.5.1. Each attribute of the proposed mitigation scheme is given a weighting factor ranging from 0 to 10. This factor is multiplied by the score allotted to it based on professional judgement of a number of assessment criteria as described in Table 1 below. The total score is the sum of the scores allotted for individual attribute in three categories. The higher the score, the higher is the ranking of the scheme. In general, the scheme with the highest ranking is recommended for implementation. Details of the scoring system has been described in Working Paper No. 1.

Table 1 Weighting Factors and Assessment Criteria for Identified Attributes

Category	Attribute	Weighting Factor	Assessment Criteria	Number of Scores
Engineering	Traffic Engineering Consideration	8	No restriction	10
			Desirable minimum	8
			Absolute minimum	4
			Below absolute minimum	2
	Traffic Management During Construction	5	Require full road closure	2
			Require partial closure	4
			Require diversion of traffic but maintain original number of lanes	6
			Simple signing scheme without minor reduction in road width	8
			No traffic diversion required	10
	Buildability	7	Without diversion of utilities	10
			With minor diversion of utilities and simple foundation	8
			With minor utilities diversion and piling	6
			With major utilities diversion	4
			With major utilities diversion and complicated foundation	2
	Safety	7	Pedestrian safety	Two marks for each criterion
			Accessibility to emergency access	
			Fire fighting & rescue operation	
Load/unloading activities				
Environmental	Noise impact	10	Weigh in accordance with percentage of protected exposed facades after the installation of each option.	0 to 10
	Air Quality impact	6	Localized effects on air quality at pedestrian on ready dwellings: <ul style="list-style-type: none"> • no effect • mild effect • adverse effect 	10 6 2

Category	Attribute	Weighting Factor	Assessment Criteria	Number of Scores
	Landscape and Visual impact	6	Any potential impacts upon existing landscape or streetscape, and impacts to existing views from residential/public properties, or from footpaths and roads are classified as: <ul style="list-style-type: none"> • slight impact • moderate impact • severe impact 	7 to 10 4 to 7 1 to 4
Cost	Cost-effectiveness	8	Weigh in accordance with the cost per dwellings protected by each option.	0 to 10
Total Score			Summation of score of each category	
Ranking			Based on the total score of each mitigation option	