B. PILOT STUDY OBJECTIVES AND BACKGROUND

1. Study Origin and Purpose
The pilot study continues the Walking Security Index (WSI) project that had its origins in the (former) Region of Ottawa-Carleton’s (ROC) Transportation Environment Action Plan (TEAP). Background details in these regards are now available from the (new) City of Ottawa, which is the pilot study sponsor, and from project publications (1, 2, 3, 4, 5). More particularly, however, the pilot study origins reside in a proposal to conduct such a project (6), and the decisions in 1999 by Transportation Committee (7, 8, 9) and Regional Council (10) to fund the proposal.

The purpose of the pilot study is to examine Walking Security Index formulations as a means to evaluate signalized (regional road) intersections. That is, publication of Walking Security Index completed the conceptual phase of WSI research and development involving index design issues (5). The WSI project is now moving into the operational phase, and the task of the pilot study is to empirically check out the indexes prior to their formal adoption and implementation by the City of Ottawa.

In the interests of making the report self-contained, pertinent elements of the terms of reference for the pilot study are presented in Appendix A.

2. Pilot Study Scope and Methodology
The pilot study involves empirically examining three macro indexes:

1. Intersection Volume and Design Index (IVDI)*.
2. Quality of Intersection Condition Index (QICI).
3. Driver Behaviour Index (DBI).

*This macro index was originally titled the Basic Walking Security Index (BWSI). The change in terminology was made in order to better represent the concepts imbedded in the index, and the variables used to operationalize the concepts.
As illustrated by pilot study publications previously submitted to the client (11,12,13,14,15,16), the research design of the project involved an index-by-index approach in testing for operationality. Consequently, the scope of the reports for each index was largely confined to matters involving the respective pilot study components (IVDI, QICI, DBI), with only limited cross-reference to the other indexes.

The primary design reason for restricting the scope of study in that manner is explained by a combination of first, research complexity, and second, the amount of material involved in the index tests. That is, a large number of tables are required to present the data used for empirical analysis/synthesis involving each index, so adding still more tables of data for other indexes would create a logistically prohibitive situation. Worse, however, an excessive number of tables could create an incomprehensible body of cross-referenced tables and text, and thereby undermine the operationality tests.

As for methodological reasons to not separate the (macro) indexes C treat them as standalone research tasks C two fundamental concerns were identified. That is, care must be taken (via research design) to ensure that no errors of omission or commission occur which could compromise:

- a) operational testing of each index; or,
- b) examination of relationships between and among indexes.

With regard to concern a), no communications have been received from the client (City of Ottawa) about errors of omission or commission in the test for index operationality. As a result, it is taken as given that our research involving the individual indexes is complete, and that our attention can now turn to concern b), that is, relationships between and among indexes.

The scope of the final report (17) therefore extends across the three macro indexes. However, and as indicated above, we do not re-visit the details of either the Technical Supplements (11, 13, 15) or the associated Commentary Reports (12, 14, 16). Rather,
our interest here is in identifying and discussing the pilot study findings which appear most pertinent to the City of Ottawa’s objective of effectively implementing and maintaining a Walking Security Index program.

The same overriding principle applies to methodology. That is, details about the research methods, techniques and operations used to conduct the respective index tests are not re-visited, as that documentation already exists (11, 12, 13, 14, 15, 16). Instead, we limit our discussion to affirming that the methodology behind the selection of findings was similar to that for variable selection (5), and that it included presentations/publications (18, 19) in open technical/professional situations, as well as public presentations given at the request of the client.⁴

3. Organization of the Final Report

The research design of the project included using a similar format to organize the commentary report written for each (IVDI, QICI, DBI) component of the pilot study. That was done in order to support examination of relationships between and among indexes, and to facilitate preparation of the final, overview report.

Based on the Table of Contents in each of the three commentary reports (12, 14, 16), the final report is therefore organized as follows:

- Part A: Executive Summary
- Part B: Pilot Study Objectives and Background
- Part C: Research Design
- Part D: Availability of City of Ottawa Data for Index Implementation
- Part E: Fieldwork Findings About Index Data Availability
- Part F: Calculating Index Scores
- Part G: Ranking Index Scores
- Part H: Demonstration of Index Operationality

At the conclusion of Part H, the formal, contractual obligations of the Walking Security Index pilot study are satisfied. In the interests of completeness, however, this report is
extended to include Part I: Strategic Considerations. Our intent here is to make known to the client (and other interested readers) several matters that emerged over the course of the pilot study which appear to have significant implications for index implementation, maintenance and effectiveness. The report is then completed by the Conclusion (Part J), References (Part K), and Appendices (Part L).

As a closing note about report organization, we repeat a statement made in all pilot study reports. That is, the final report builds directly on the findings and recommendations presented in Walking Security Index, as this Awork in progress@ moves from concepts to operations.\(^5\) Those findings and recommendations are a published part of the WSI project, so we do not revisit them in this report unless they are needed to assist in substantiating a pilot study initiative, finding or recommendation.

4. Notes

1. The Walking Security Index (WSI) design study (1996–1998) and pilot study (1999–2002) were funded by the Region of Ottawa-Carleton, which became the (new) City of Ottawa on January 1, 2001. In the interests of accuracy, the study client is referred to as the Region for all matters preceding January 1, 2001, and the City of Ottawa for all matters which arise after that date.

2. As stated in the pilot study terms of reference (6,10), and as made clear by the background documentation (3, 5, 6, 7), the three macro indexes are at quite different levels of development. In particular, the Intersection Volume and Design Index (IVDI), which was initially called the Basic Walking Security Index (BWSI), is shown in the first pilot study report to be ready for immediate implementation in an operational sense (11,12). The QIC Index, by comparison, appears to be in need of one or more rounds of operational refinement (13,15), and the DB Index is still early in the design phase (15, 16, 18, 19, 20). The reminder is therefore given that stages are attached to our use of the term “implementation” when it is applied to all three macro indexes. And, consequently, the stage of development C pilot study, pretest, trial run C defines the kind or kinds of activity which the literature suggests be undertaken in order for one or
all of the indexes to achieve full operational status (5, 11, 13, 16, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28).

3. These are termed macro indexes since two of them (IVDI, DBI) are comprised of two or more indexes (which, since they are now part of a composite are properly termed sub-indexes), and the QIC Index combines intersection feature and maintenance variables. In the interests of easier reading, the term index is generally used in the text. However, if there is a need to make a distinction, then the prefixes are attached.

4. Pilot study overview presentations were made to the Transportation and Transit Committee on November 7, 2001, and to the Police Services Board on November 26, 2001 (29). The “Foreword” and “Executive Summary” of each pair of pilot study reports are published in Agenda 15, Transportation and Transit Committee, City of Ottawa, Wednesday, November 7, 2001, and the materials used in the presentations can be read online at:
http://www.city.ottawa.on.ca/calendar/ottawa/citycouncil/ttc/2001/11-07/minutes15.htm

5. The term “work in progress” has been used on various occasions (8, 9, 10) to describe the state of Walking Security Index research (as project findings and recommendations move through the conceptual and operational phases towards partial or full implementation). It appears that the characterization is due in part to research originality, and in part to the relative recency of the Region’s (City’s) policy, plan, and program interests in pedestrians’ security (safety, comfort, convenience) (30, 31, 32).