Institute of Transportation Engineers Technical Committee TENC-105-01

SCHOOL SITE PLANNING, DESIGN AND TRANSPORTATION

SUMMARY REPORT

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Traffic safety in and around school areas is a highly sensitive subject with the public, school officials, and local officials. Many of the traffic problems created at schools are related to insufficient guidelines on selecting optimal school sites, improper campus design, larger school sizes (student populations), and poor connectivity to the neighborhood that the school serves. The Institute of Transportation Engineers (ITE) recognized this problem and established a technical committee to provide much needed guidance through an informational report on School Site Planning, Design, and Transportation. This report provides an overview and summary of the efforts undertaken by ITE Technical Committee TENC-105-01 to identify desirable practices for school site planning, design, and transportation facilities in North America. This informational report is intended to be used by school administrators and school board representatives, developers, land use planners, architects, transportation planners, transportation engineers, and elected officials at the state, provincial, and local levels. It will focus primarily on conventional public schools, particularly elementary and middle schools (grades K – 8), but will also address high schools and magnet schools that draw students from a wider attendance area. A major emphasis will be on the design of new schools for maximum walkability, safety, and efficiency, but this report will address these issues during the redevelopment of existing school sites as well.

The committee comprised of professionals from across the United States and Canada, including:

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This multifaceted compilation of experience includes:

- best practices on school planning, design, and operations;
- guidance for the inclusion of transportation considerations into selection of school facility sites;
- guidance for addressing transportation issues at existing school sites and redevelopment opportunities;
- techniques to improve safety in the vicinity of schools for all users;
- a summary of traffic control devices and techniques available to schools;
- suggestions to encourage walking and cycling to school in the interest of public health and fitness; and
- educational guidance for parents, students, and administrators.

The report is organized into the following chapters:

- Introduction
- School-Related Transportation Impacts
- Survey of School Site Selection, Design, and Transportation Issues
- Selecting a School Site
- Street Layout and Neighborhood Connectivity
- School Campus Design and Physical Site Layout
- School Area Traffic Control
- Methods to Minimize Peak School Traffic Congestion

Appendix A to the report provides detailed results of the survey of transportation and school officials, and Appendix B lists the references provided by the transportation and school officials regarding school site selection and design from North America.

Below is a summary list of the most important elements to consider when selecting a school site and designing the campus layout and connections to the community the school will serve. Following these principles will contribute toward creating a walkable, community-based school that will enable a maximum number of students to walk or ride their bikes to school and reduce the need for parent drop-off / pick-up and school buses.

- A smaller school (lower student attendance and smaller attendance area) is more walkable than a larger school.
- A school that serves more grades (such as K – 8 rather than K-3) can result in a more walkable school.
- A good school site is located in the center of the attendance boundary, especially the center of the walking attendance area.
- Locate a school to minimize the need for students to cross busy or high speed arterial streets, especially for primary or elementary school sites.
- Do not locate a school adjacent to or near an access barrier (i.e. a river, wash, freeway, railroad track, etc.) unless pedestrian/bicycle access can be provided across the barrier.
- Provide pedestrian and bicycle access to all sides of the school campus.
- It is best for a school site to be designed to have streets border at least two (and preferably more) sides of the school for vehicle access.
- It is best for an elementary school not front onto busy or high speed arterial streets, but rather to

front onto at least one collector street inside the neighborhood, and preferably two.

- Avoid locating a school at the end of cul-de-sac unless there are other ways vehicles, bicycles, and pedestrians can access the school site
- Avoid multiple schools on the same campus or in adjacent campuses unless the schools are relatively small. Instead, the school campuses should be disbursed throughout the communities that each school serves.
- It is best to avoid fronting a school onto a street with front-facing homes (single family homes with direct access to the street)
- Provide sidewalks in the neighborhood adjacent to the school on both sides of the street and connect to the school entry points for students. Wider sidewalks near and along school property accommodate larger numbers of walkers at the school during school arrival and dismissal times.
- School walking maps (ideally developed during the planning stages of a school) encourage students to walk or bike to school, identify barriers to walking, and establish the optimal crossing locations and traffic control placement.

- Minimize the need for walking students to cross busy driveway along walking routes and when accessing the school building entrances.
- Evaluate and provide appropriate traffic control (including adult crossing guards, where needed) along the school frontage and at the primary street crossings.
- Physically separate bus loading areas from parent drop-off and pick-up areas.
- Design schools to accommodate parent vehicle traffic during arrival and dismissal times, so vehicle queues do not obstruct through lanes, crosswalks, bike lanes, driveways, or create other operational and safety concerns on the adjacent streets.

The report is illustrated using aerial photos and pictures to provide examples of good and undesirable site selection, traffic control options and considerations, and connections to the adjacent community served by the school. There are also examples of methods to improve less than desirable school sites or campus layouts and a few examples on how to utilize adjacent land uses (parks, community centers, etc.) to improve traffic conditions at a school. The report also provides a brief discussion on Education, Encouragement, and Enforcement techniques and considerations to improve traffic conditions at school sites to make schools more walkable and bicycle-friendly.