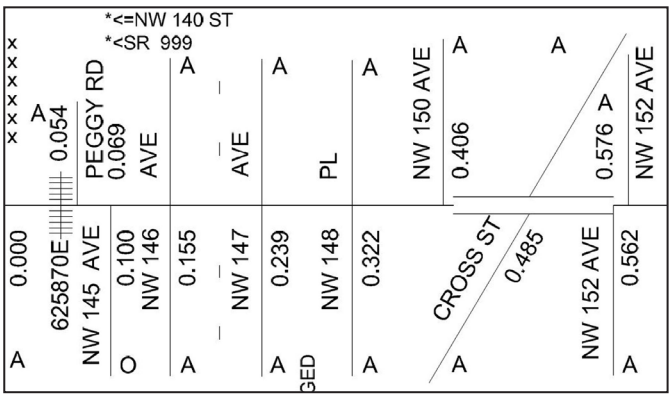
Florida Department of Transportation Research

Roadway Data Representation and Application Development: Phase III
BDK84 977-18

The *Roadway Characteristics Inventory (RCI) Handbook* describes the RCI as a "database of information related to the roadway networks that are maintained by or are of special interest" to the Florida Department of Transportation (FDOT). With over one million records, RCI is FDOT's largest database. One tool which makes this storehouse of data accessible to FDOT users is the Straight-Line Diagrammer, software that can produce straight-line diagrams (SLD). An SLD is a schematic that shows a roadway's essential layout in a linear fashion, featuring geometric data (e.g., number of lanes) and administrative data (e.g., functional classification). The newest Diagrammer software offers new flexibility, allowing users to create and save profiles for various formatting settings. As critical reference tools in managing the state's highways, SLDs are maintained for all State Highway System segments, including the Strategic Intermodal System. An SLD must be updated any time a change occurs to the roadway data it represents.

The Straight-Line Diagrammer has been developed through a series of FDOT-funded projects, beginning in 2006. It automates SLD creation from RCI data. It is efficient, flexible, user-friendly, and takes advantage of Web-based database and other technologies. The Diagrammer will eventually replace the AutoSLD application (both in use by FDOT as of June 2011). AutoSLD's internal structure has increasingly limited its capabilities with regard to both the evolving information environment and transportation practice. Previous work on the Straight-Line Diagrammer is documented in the reports *Roadway Data Representation and Application Development: Developing a New Straight Line Diagram for the Florida Department of Transportation* (FDOT Project PR608207) and *Roadway Data Representation and Application Development* (FDOT Project BD544-41). Researchers from the University of South Florida have led each phase of the Diagrammer's development.



In this portion of a straight-line diagram (SLD), the relationship between transportation structures is shown for a roadway segment. The entire diagram is one of several that comprise a standard SLD report.

In this phase of the project, researchers responded to insights gained from a limited deployment of the Diagrammer. Researchers addressed user complaints about the inability to save preferences for the full range of options in the software and about excessively long loading times for specific software operations. They also addressed issues related to simultaneous users and administrative functions. Internal functions, such as the programming of specific roadway characteristics codes and the automatic scaling algorithm, were improved. Another major task of this project was to assure compliance of the software with the U.S. Rehabilitation Act, Section 508, which requires that the software be accessible to people with disabilities. In addition to these major tasks, a number of minor fixes were applied to the software.

This phase of the project was recently completed and the Straight-Line Diagrammer was re-deployed into the FDOT production environment in June 2011.Observations and reports of user experiences will determine the need for future fixes and developments of this software.

Project Manager: Rodney Floyd, FDOT Planning Office
Principal Investigator: Zhenyu Wang, University of South Florida
For more information, visit http://www.dot.state.fl.us/research-center