



## Florida Department of Transportation

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### **TRAFFIC ENGINEERING AND OPERATIONS BULLETIN 23-02**

DATE: November 1, 2023

TO: District Traffic Operations Engineers, District Design Engineers, District Safety Engineers/Administrators, District Program Management Administrators, District Planning and Environmental Management Administrators

FROM: Rudy Powell, Jr., P.E.  
Director, Traffic Engineering and Operations

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COPIES: Will Watts, Dan Hurtado, Michael Shepard, Lora Hollingsworth, Jennifer Marshall, Jennifer Fortunas, Daniel Strickland, Rhonda Taylor, State Traffic Engineering and Operations Office

SUBJECT: **2024 Manual on Intersection Control Evaluation (ICE)**

This bulletin announces the release of the **2024 Manual on Intersection Control Evaluation (ICE)**, which is available on the State Traffic Engineering and Operations website:

<https://www.fdot.gov/traffic/TrafficServices/Intersection-Operations.shtm>.

### **SUMMARY OF REVISIONS**

- A List of Acronyms is added.
- The Table of Contents, List of Figures, and List of Tables are updated.
- **Chapter 1 Adoption Procedure**
  - Editorial changes and updates to the language are made for the entire Chapter.
  - Reference to Topic No. 025-020-002: Standard Operating System is removed as the topic is obsolete now.
- **Chapter 2 Intersection Control Evaluation**
  - Editorial changes and updates to the language are made for the entire Chapter.
  - **Section 2.1 – Background and Purpose:** Two previous Sections are combined and curtailed into one Section. References to intersection fatalities in Florida are updated with the 2021 data from the National Highway Traffic Safety Administration’s (NHTSA’s) Fatality and Injury Reporting System Tool (FIRST).
  - **Section 2.2 – Applicability:** Language is revised to reflect changes in Rule 14-96, Florida Administrative Code (FAC).

- **Section 2.3 – Intersection Control Strategies:** This is a new Section. It provides the list of at-grade and ramp terminal intersection control strategies that can be analyzed using the analytical tools developed for conducting an ICE.
- **Section 2.4 – Conducting an ICE:** Changes are made to content organization, structure, and formatting. Language is updated as appropriate. The three ICE stages are renamed as follows:
  - Stage 1 as “Screening/Preliminary Analysis” from “Screening”
  - Stage 2 as “Detailed Analysis” from “Preliminary Control Strategy Assessment”
  - Stage 3 as “Supplemental Analysis” from “Detailed Control Strategy Assessment”
- **Section 2.5 – ICE Stages:** The title was renamed from “ICE Procedure” to “ICE Stages”.
- **Section 2.5.1 – Stage 1: Screening/Preliminary Analysis:** Content is reorganized and restructured. Language is updated as appropriate. Two subsections are added to this Section, as follows.
  - **Section 2.5.1.1 – Stage 1 Analysis Tools:** Language is added with discussion on the Capacity Analysis for Planning of Junctions (CAP-X) Tool, FDOT Safety Performance of Intersection Control Evaluation (SPICE) Tool, Crash prediction method, and the Safe System for Intersections (SSI) method with regard to Stage 1 analysis.
  - **Section 2.5.1.2 – Stage 1 Steps:** Table for Step 1 Procedural Steps is converted to plain text. Language is updated to the text.
- **Section 2.5.2 – Stage 2: Detailed Analysis:** Content is reorganized and restructured. Language is updated as appropriate. Two subsections are added to this Section, as follows.
  - **Section 2.5.2.1 – Stage 2 Analysis Tools:** Language is added with further discussion on the FDOT SPICE Tool, FDOT ICE Tool, Traffic simulation software with regard to Stage 2 analysis.
  - **Section 2.5.2.2 – Stage 2 Steps:** Table for Step 2 Procedural Steps is converted to plain text. Language is updated to the text.
- **Section 2.5.3 – Stage 3: Supplemental Analysis:** Language is updated as appropriate. Two subsections are added to this Section, as follows.
  - **Section 2.5.3.1 – Stage 3 Analysis Tools:** Language is added for Stage 3 analysis tools.
  - **Section 2.5.3.2 – Stage 3 Steps:** Table for Step 3 Procedural Steps is converted to plain text. Language is updated to the text.
- **Section 2.6 – References.** This is a new section in context, replacing the previous section titled “Tools and Resources”. The section now provides a list of references to the in-text citations. The previous content is moved to Appendix E.
- **Appendix A Intersection Control Strategy References**
  - The title is rephrased from “Intersection Type References” to “Intersection Control Strategy References”.
  - Editorial changes and minor modifications to the column names in Tables A-1 and A-2 are made.

- Description and illustration for the following ramp terminal intersections are added to Table A2:
  - Half Diamond Signalized
  - Half Diamond Stop Control
  - Four-Quadrant Partial Cloverleaf A Signalized
  - Four-Quadrant Partial Cloverleaf A Stop Control
  - Two-Quadrant Partial Cloverleaf A Signalized
  - Two-Quadrant Partial Cloverleaf A Stop Control
  - Four-Quadrant Partial Cloverleaf B Signalized
  - Four-Quadrant Partial Cloverleaf B Stop Control
  - Two-Quadrant Partial Cloverleaf B Signalized
  - Two-Quadrant Partial Cloverleaf B Stop Control
- Figures A1 through A3, Table A-3, and the following three columns, including Reference Material, Volume Thresholds, and Recommended Stage 1 and 2 Operational Analysis Tools, in Tables A-1 and A-2 are deleted.
- **Appendix B FDOT ICE Forms**
  - Figures are updated to reflect changes in the FDOT ICE Forms.
  - Language is added to the General Information for Stage 1 Form for the new “Input” sheet in the FDOT ICE Form (Form No. 750-010-30).
  - Inputs for Multimodal Accommodations in Stage 2 Form are changed from “Peak Hour # of pedestrians crossing” and “Peak hour # of bicyclists” to “Daily # of pedestrians crossing” and “Daily # of bicyclists crossing”, respectively. Also, “Activity Level for Bicyclists” is no longer available as there is no basis to it.
- **Appendix C Pedestrian and Bicycle Evaluations in CAP-X**
  - The title is renamed from “Analysis Considerations”.
  - The appendix is updated by keeping text, tables, and figures specific to pedestrian and bicycle evaluations in CAP-X only from Appendix C in the previous year’s manual.
  - The graphics of default pedestrian crosswalk locations and layout used in Cap-X analysis are updated.
- **Appendix D Assumptions for Control Strategies in the SSI Method**
  - This is a new Appendix, created by moving text and tables specific to the SSI method from Appendix C in the previous year’s manual.
- **Appendix E Control Strategy Evaluation Considerations**
  - This is a new Appendix, created by moving text related to Control Strategy Evaluation Considerations from Appendix C in the previous year’s manual.
  - Content from previous Section 2.6: Tools and Resources is moved here.

## **COMMENTARY**

All revisions in this bulletin will ensure accurate and consistent implementation.

## **IMPLEMENTATION**

These changes are effective on projects beginning design on or after January 1, 2024, and on projects currently in the design phase where implementation will not adversely impact production schedules.

## **CONTACT**

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