

East Pass Bridge, Destin, Fla.

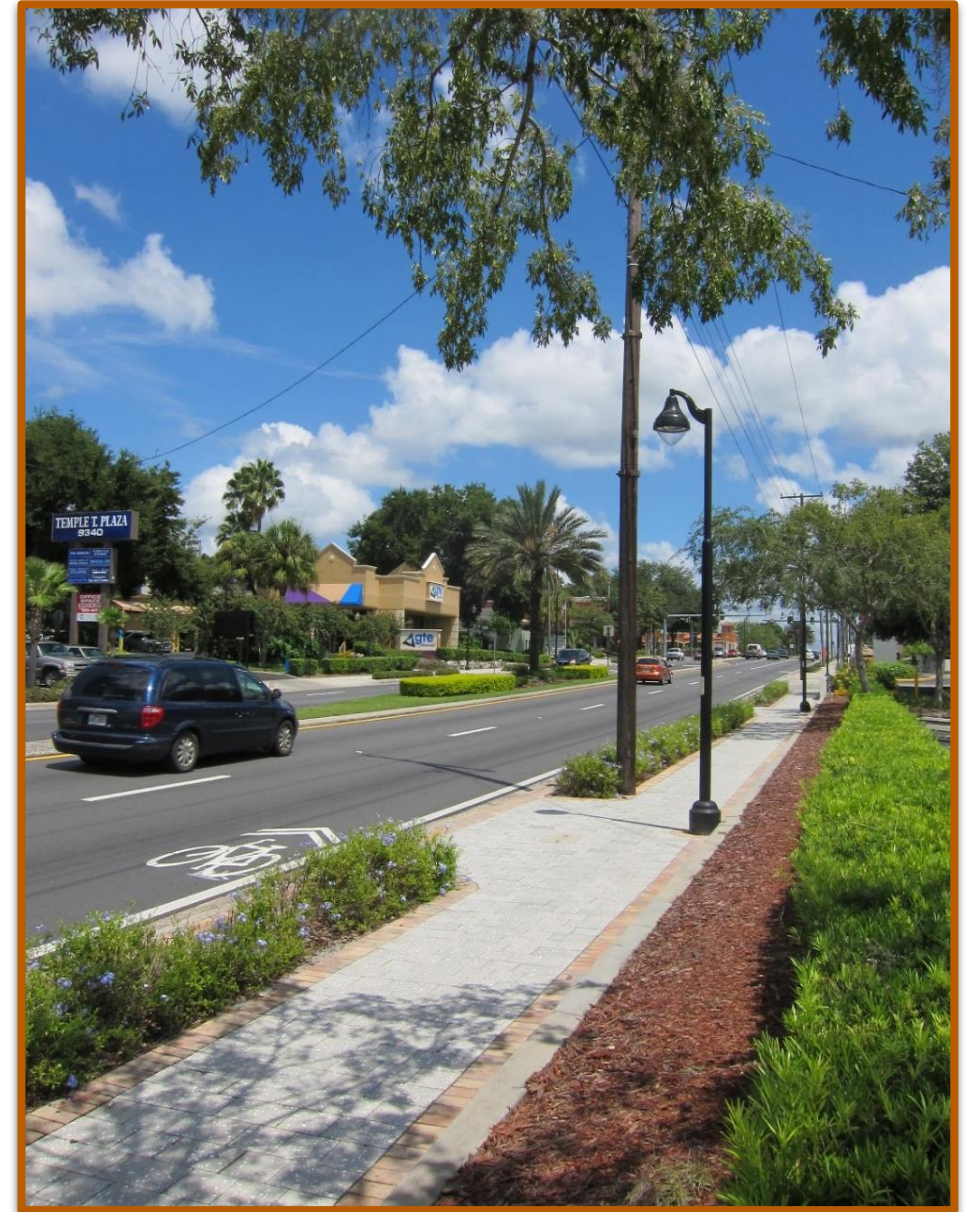
# 2018 Florida Greenbook Design Exceptions & Variations

Mary Anne Koos  
Office of Design, FDOT



# Purpose of Florida Greenbook

- Section 334.044, F.S. Florida Statutes
  - Provide uniform minimum standards and criteria
  - Covers design, construction, and maintenance
  - Applies to all streets, roads, highways, bridges, sidewalks, curbs and curb ramps, crosswalks, bicycle facilities, underpasses and overpasses traveled by the public



56<sup>th</sup> Street, Temple Terrace



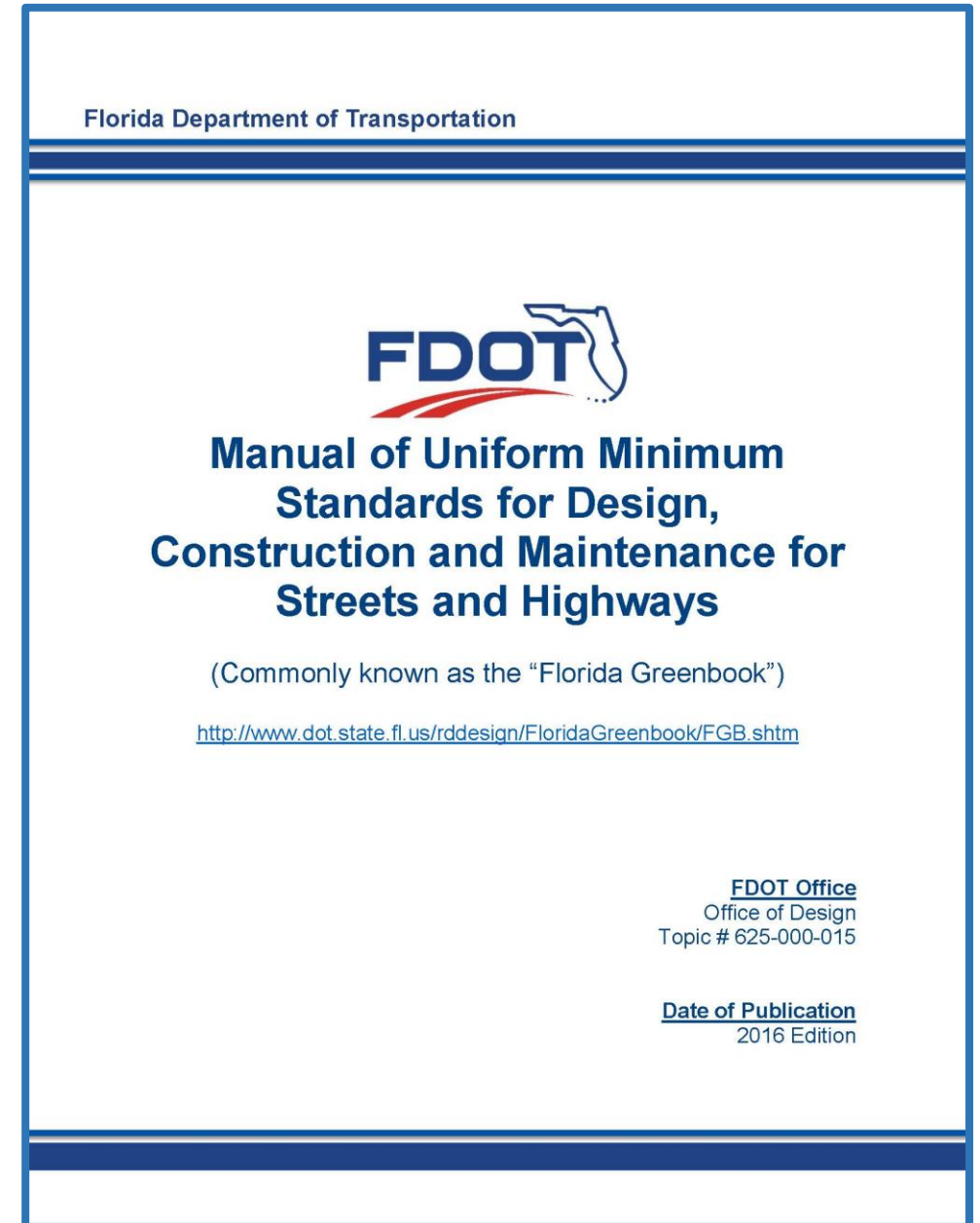
# Florida Greenbook Advisory Committee

- 4 members per FDOT District (28 total)
  - Professional engineers representing rural and urban local governments
  - Professional engineer not employed by a government agency
  - FDOT's District Design Engineer



# Florida Greenbook

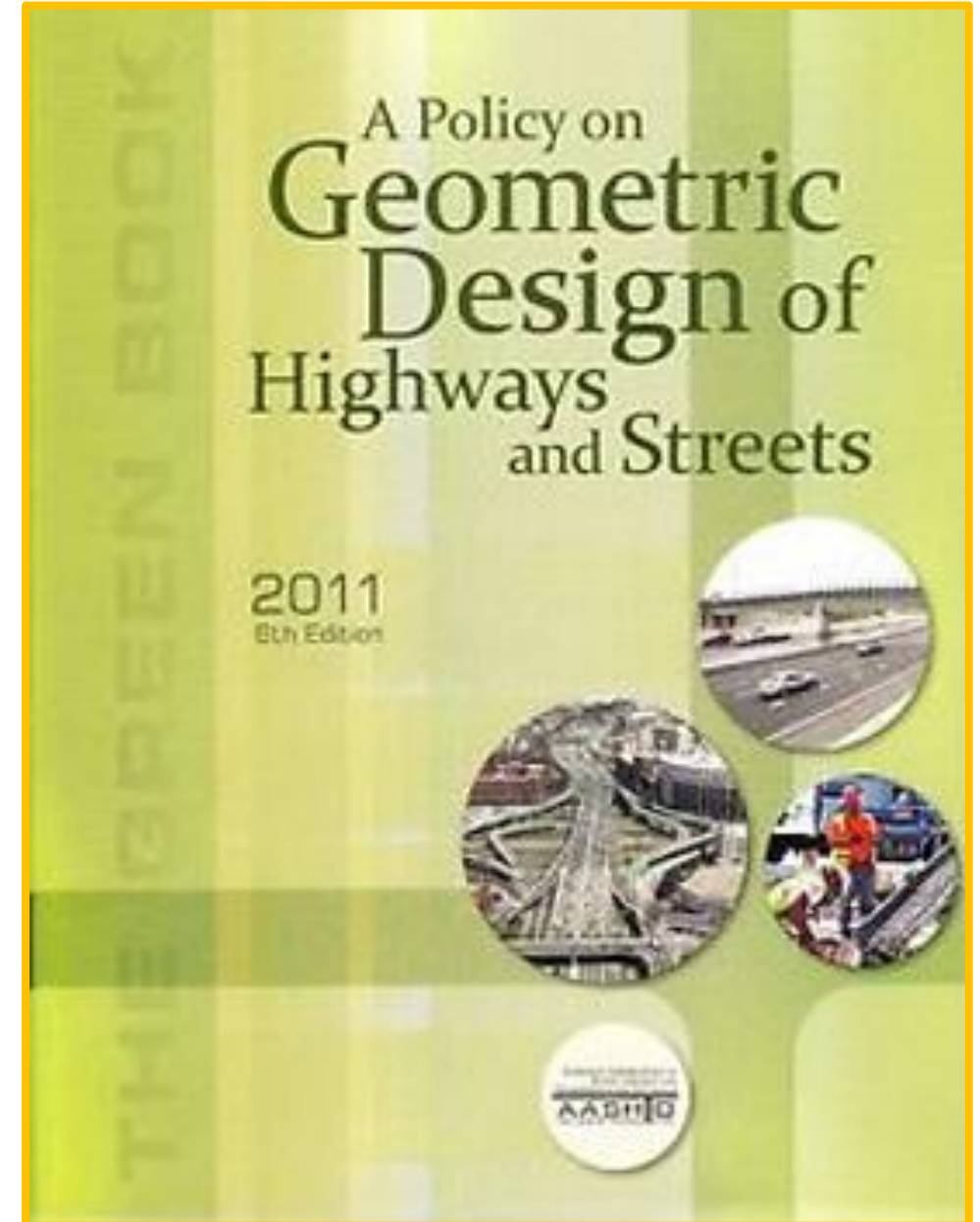
- 2016 Florida Greenbook is the current edition
  - Was effective **June 19, 2017**
- 2018 Florida Greenbook is drafted and has begun rulemaking
  - Expect to be adopted fall 2019
- Draft 2018 Florida Greenbook posted on FDOT's web page:
  - ✓ <http://www.fdot.gov/roadway/>
- 2020 Florida Greenbook is being drafted now





# 2011 AASHTO Greenbook

- Effective November 12, 2015
- FHWA published the Final Rule to Title 23, Code of Federal Regulations Part 625
- The rule modifies regulations governing new construction, reconstruction, resurfacing (except for maintenance resurfacing), restoration, and rehabilitation projects on the NHS



# 2018 AASHTO Greenbook?

- 2011 AASHTO Greenbook is still the incorporated reference based upon FHWA's published Final Rule to Title 23, Code of Federal Regulations Part 625
  - FHWA reviewed the 2018 Green Book and found the updates meet or improve upon the criteria of the 2011 Green Book
  - State DOTs may adopt the 2018 Green Book for use *on* NHS projects
  - Until 23 CFR part 625 is updated through rulemaking, the 2018 AASHTO Green Book should be considered guidance only
  - <https://www.fhwa.dot.gov/design/standards/190510.pdf>
  - [http://downloads.transportation.org/publications/GDHS-7\\_SummaryOfChanges.pdf](http://downloads.transportation.org/publications/GDHS-7_SummaryOfChanges.pdf)

# On or Off the State Highway System (SHS)?

- Intended for use on all streets and highways OFF the SHS
- If using federal funds and project is:
  - On the National Highway System (NHS),
  - Has a construction value  $\geq$  \$10 million, or
  - Includes a vehicular bridge, pedestrian bridge over a roadway, certain box culverts.
- Then use FDOT's Design Manual (FDM) and Standard Plans



Fort George/Talbot Island Bridge, FL



# What Criteria To Use?

✓ Check Table 1:  
Project Classifications in Chapter 19 of Local Agency Program(LAP) Manual

[http://www.fdot.gov/programmanagement/LAP/LAP\\_TOC.shtm](http://www.fdot.gov/programmanagement/LAP/LAP_TOC.shtm)

| Project Classifications   | Design Criteria and Standards <sub>1</sub> *  | Specifications*   | Materials Testing*  | Qualifications  |
|---|---|---|---|---|
| <b>Class A</b><br>On the State or National Highway Systems  | <a href="#">FDOT Design Manual</a> and <a href="#">FDOT Standard Plans</a>  | <a href="#">FDOT Standard Specifications for Road &amp; Bridge Construction</a>   | <a href="#">Samples Testing and Reporting Guide</a> and <b>FDOT Materials Manual</b>  | FDOT Prequalified <a href="#">Consultants</a> and <a href="#">Contractors</a> |
| <b>Class B</b><br>Off the State and National Highway Systems with an estimated construction value of \$10 million or greater.   | <a href="#">FDOT Design Manual</a> and <a href="#">FDOT Standard Plans</a>  | <a href="#">FDOT Standard Specifications for Road &amp; Bridge Construction</a>   | <a href="#">Samples Testing and Reporting Guide</a> and <b>FDOT Materials Manual</b>  | FDOT Prequalified <a href="#">Consultants</a> and <a href="#">Contractors</a> |
| <b>Class C</b><br>Off the State and National Highway Systems and includes structural components: <ul style="list-style-type: none"> <li>a vehicular bridge</li> <li>pedestrian bridge over a roadway</li> <li>box culvert meeting the definition of a bridge as stated in <a href="#">23 CFR 305</a></li> </ul>   | 1) For structures components, use the <a href="#">FDOT Design Manual</a> and <a href="#">FDOT Standard Plans</a><br><br>2) For all other components, use the <a href="#">Florida Greenbook</a>    | 1) For the structures components, <a href="#">FDOT Standard Specifications</a><br><br>2) For all other components, <a href="#">LAP Big 4 or approved Local Agency Specs</a> | 1) For structures components, use the <a href="#">Samples Testing and Reporting Guide</a> and <b>FDOT Materials Manual</b><br><br>2) For all other components, use Local Agency materials testing process | FDOT Prequalified <a href="#">Consultants</a> and <a href="#">Contractors</a> |
| <b>Class D</b><br>Off the State and National Highway Systems, may include structural components: <ul style="list-style-type: none"> <li>pedestrian bridges not over a roadway</li> <li>bridges on shared use path not over a roadway</li> <li>box culverts that do not meet the definition of a bridge as stated in <a href="#">23 CFR 305</a></li> </ul> | <a href="#">Florida Greenbook</a><br><br>-Or-<br><br>Approved Minimum Design Standards chosen by local agency which conform to the minimum criteria provided in <a href="#">Florida Greenbook</a> | <a href="#">LAP Big 4 or approved Local Agency Specs</a>  | Local Agency materials testing process  | Local Agency qualified consultants and contractors                            |



# Chapter 14 – Design Exceptions & Variations

- Revised controlling criteria to be consistent with FHWA (published May 2016)
- Required when not possible to meet the min. standards
- Recommended by PE, signed by maintaining authority's PE or designee
- If project is on SHS or NHS, follows process in FDM, signed by DDE





# Examples of Shalls

- Design speed
- Stopping and passing sight distance
- Lane widths
- Cross slope
- Shoulders
- Medians
- Shielding
- Rail crossings
- Sidewalks, bike lanes, shared use paths



Centerville Road, Tallahassee, FL



# Design Exceptions

- Historically based on 13 controlling elements
- FHWA published a notice of revisions for criteria May 2016
- Established 2 categories based upon design speed
- High Speed is  $\geq 50$  mph and has 10 Controlling Criteria
- Low Speed is  $\leq 45$  mph and has 2 Controlling Criteria



A1A, Volusia County, FL

# High Speed ( $\geq 50$ mph)

- 10 Controlling Criteria
  - Design Speed
  - Lane Width
  - Shoulder Width
  - Horizontal Curve Length
  - Superelevation Rate
  - Stopping Sight Distance (SSD)
  - Maximum Grade
  - Cross Slope
  - Vertical Clearance
  - Design Loading Structural Capacity



US 41, Dunnellon, FL



# Low Speed ( $\leq 45$ mph)

- 2 Controlling Criteria
  - Design Speed
  - Design Loading Structural Capacity



FAMU Way Connector, Tallahassee, FL



# The Silent 3 Controlling Criteria

- Vertical Alignment
  - Associated with Stopping Sight Distance
- Horizontal Clearance
  - Addressed in Shoulder Width, Lateral Offset and Clear Zone Requirements
- Bridge Width
  - Addressed in Lane and Shoulder Width Requirements



US 98, Carrabelle, FL



# Draft 2018 Florida Greenbook

- <https://www.fdot.gov/roadway/floridagreenbook/fgb.shtm>

Roadway Design / Roadway Criteria / Florida Greenbook

roadway intersection

## Florida Greenbook

**Current Florida Greenbook**

**2016 Florida Greenbook**  
Effective June 19, 2017  
**Summary of Major Changes**

**DRAFT Florida Greenbook**

**2018 Florida Greenbook DRAFT**  
Proposed for 2019 Effective Date  
**Summary of Major Changes**  
**Design Exception and Variation Sample Letter**

**Archived Florida Greenbook**

|      |      |
|------|------|
| 2013 | 1997 |
| 2011 | 1989 |
| 2007 | 1986 |
| 2005 | 1984 |
| 2002 | 1981 |
| 2001 | 1976 |

1994-Revision

**Committee Meetings**

**FLORIDA GREENBOOK ADVISORY  
COMMITTEE MEETING**

**Agenda and Meeting Package**  
Thursday, March 28, 2019, 8:00 AM – 5:00 PM  
Friday, March 29, 2019, 8:00 AM - 12:00 PM

**PLEASE NOTE:**

The *Manual of Uniform Minimum Standards for Design, Construction and Maintenance (Florida Greenbook)* provides criteria for public streets, roads, highways, bridges, sidewalks, curbs and curb ramps, crosswalks, bicycle facilities, underpasses, and overpasses used by the public for vehicular and pedestrian travel.

Authority for the *Florida Greenbook* is established by **Chapters 20.23(3)(a), 334.044(10)(a), and 336.045, Florida Statutes**, and **Rule 14-15.002, Florida Administrative Code**. This manual is intended for all projects not on the state and national highway systems.

This site contains the current and past editions, meeting information, and committee membership for the *Florida Greenbook* in \*.PDF format.

To receive notices of updates to the *Florida Greenbook*, users should register their preferences and e-mail addresses in the Department's Contact Management database. Users can register at the following link:

<http://www.fdot.gov/designsupport/ContactDatabase.shtm>

If you have any questions, comments or suggestions regarding the Florida Greenbook, please contact **Mary Anne Koos, Special Projects Coordinator**

Email: [maryanne.koos@dot.state.fl.us](mailto:maryanne.koos@dot.state.fl.us)  
Phone: (850) 414-4321

# Design Exceptions and Variations

- Design Exceptions
  - Required when proposed controlling design elements are below both AASHTO's new construction criteria and the criteria in Florida Greenbook
- Design Variations
  - Required when proposed features other than controlling design elements do not meet Florida Greenbook criteria
- Can use Exhibit 14-A to submit request

**Exhibit 14-A Sample Request Letter for Design Exception or Variation**

TO: \_\_\_\_\_ DATE: \_\_\_\_\_

SUBJECT: ☐ DESIGN EXCEPTION or ☐ DESIGN VARIATION

Local road number or street name: \_\_\_\_\_  
Project description (limits): \_\_\_\_\_  
Type construction (new, rehabilitation, adding lanes, resurfacing, etc.): \_\_\_\_\_  
Design Speed \_\_\_\_\_  
State and/or Federal road number (if applicable): \_\_\_\_\_  
FDOT Financial Project ID No. (if applicable): \_\_\_\_\_

DESIGN EXCEPTION OR VARIATION FOR THE FOLLOWING ELEMENT:

|  |   |   |
|--|---|---|
| <input type="checkbox"/> Design speed            | <input type="checkbox"/> Stopping Sight Distance            | <input type="checkbox"/> Other (explain): _____ |
| <input type="checkbox"/> Lane Width              | <input type="checkbox"/> Maximum Grade                      | _____   |
| <input type="checkbox"/> Shoulder Width          | <input type="checkbox"/> Cross Slope                        | _____   |
| <input type="checkbox"/> Horizontal Curve Radius | <input type="checkbox"/> Vertical Clearance                 |   |
| <input type="checkbox"/> Superelevation Rate     | <input type="checkbox"/> Design Loading Structural Capacity |   |

Include a brief statement concerning the project and items of concern.

Attach all supporting documentation to this exhibit in accordance with Chapter 14.

\_\_\_\_\_  
Recommended by: \_\_\_\_\_  
(Responsible Professional Engineer)

Approval: \_\_\_\_\_  
(Maintaining authority's designated Professional Engineer)

Concurrence: \_\_\_\_\_  
FDOT (if applicable)

Concurrence: \_\_\_\_\_  
FHWA (if applicable)



# Questions

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Office of Design, FDOT

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850-414-4321