



Town of Surfside
Town Commission Special Meeting
Hedges and Corner Visibility (Sight Triangles) at Intersections
AGENDA
December 12, 2013
7 p.m.
Town Hall Commission Chambers - 9293 Harding Ave, 2nd Floor
Surfside, FL 33154

1. Opening

Call to Order

2. Roll Call of Members

3. Welcome and Opening Remarks – Mayor Daniel Dietch

4. Regulatory Requirements & Enforcement – Joe Damien, Code Compliance Director

- a. Town Code Requirements
- b. Florida Green Book Requirements
- c. County Authority
- d. Town Authority

5. Discussion Items:

- a. Regulatory Requirements
 - i. Town Code
 - ii. Florida Green Book
- b. Pros and Cons of Enforcement
 - i. Required by local and state regulations
 - ii. Liability

6. Public Comments

7. Staff Recommendations and Action on Discussion Items

8. Action Items

- a. As to Town Code Regulations
- b. As to Green Book Regulations
- c. As to Policy of Enforcement

9. Adjournment

Respectfully submitted,

Michael P. Crotty
Town Manager

THIS MEETING IS OPEN TO THE PUBLIC. IN ACCORDANCE WITH THE AMERICANS WITH DISABILITIES ACT OF 1990, ALL PERSONS ARE DISABLED; WHO NEED SPECIAL

ACCOMMODATIONS TO PARTICIPATE IN THIS MEETING BECAUSE OF THAT DISABILITY SHOULD CONTACT THE OFFICE OF THE TOWN CLERK AT 305-861-4863 EXT. 226 NO LATER THAN FOUR DAYS PRIOR TO SUCH PROCEEDING.

IN ACCORDANCE WITH THE PROVISIONS OF SECTION 286.0105, FLORIDA STATUTES, ANYONE WISHING TO APPEAL ANY DECISION MADE BY THE TOWN OF SURFSIDE COMMISSION, WITH RESPECT TO ANY MATTER CONSIDERED AT THIS MEETING OR HEARING, WILL NEED A RECORD OF THE PROCEEDINGS AND FOR SUCH PURPOSE, MAY NEED TO ENSURE THAT A VERBATIM RECORD OF THE PROCEEDINGS IS MADE WHICH RECORD SHALL INCLUDE THE TESTIMONY AND EVIDENCE UPON WHICH THE APPEAL IS TO BE BASED.

AGENDA ITEMS MAY BE VIEWED AT THE OFFICE OF THE TOWN CLERK, TOWN OF SURFSIDE TOWN HALL, 9293 HARDING AVENUE. ANYONE WISHING TO OBTAIN A COPY OF ANY AGENDA ITEM SHOULD CONTACT THE TOWN CLERK AT 305-861-4863. A COMPLETE AGENDA PACKET IS ALSO AVAILABLE ON THE TOWN WEBSITE AT www.townofsurfsidefl.gov

TWO OR MORE MEMBERS OF OTHER TOWN BOARDS MAY ATTEND THIS MEETING.

THESE MEETINGS MAY BE CONDUCTED BY MEANS OF OR IN CONJUNCTION WITH COMMUNICATIONS MEDIA TECHNOLOGY, SPECIFICALLY, A TELEPHONE CONFERENCE CALL. THE LOCATION 9293 HARDING AVENUE, SURFSIDE, FL 33154, WHICH IS OPEN TO THE PUBLIC, SHALL SERVE AS AN ACCESS POINT FOR SUCH COMMUNICATION.



Town of Surfside Special Commission Meeting

Agenda Date: December 12, 2013

Subject: Hedges and Corner Visibility (Sight Triangle) at Intersections

BACKGROUND:

Prior Enforcement:

At the May 15, 2013, Commission Meeting the Mayor and Town Commission directed the Administration to discontinue enforcement and prosecution of the Town Code that addresses corner visibility and sight-line obstructions at properties abutting intersections. This directive was designed to "pause" all action related to this issue until such time as the Town Commission could better apprise itself of alternatives to the existing code.

The Administration has since discontinued enforcement of Sections 90-52 and 90-92 of the Town Code that addresses corner visibility and sight-line obstructions at corner properties within the Town by: 1) ceasing to issue Courtesy Notices and Civil Citations associated therewith; 2) tolling any fines that may be accruing on existing Civil Citations that have already been issued but had yet to be scheduled to be heard by a Special Magistrate; and 3) continuing to toll any fines that have been already been tolled by a Special Magistrate. To date, all cases except one have been resolved. Of those resolved, fines were waived and liens released after compliance was attained, or after reduced hearing fees and administrative costs were paid by non-compliant property owners. The aforementioned resolution was as prescribed by the Town Commission.

County Input:

On August 5, 2013, the Town Commission held a Special Meeting which was attended by an Assistant Chief of the Miami-Dade Traffic Engineering Division. The County Engineer advised the Commission on County and State requirements related to corner visibility and discussed the minimum safe sight distance standards required under the



Town of Southfield Special Commission Meeting

Agenda Date: December 12, 2013

Subject: Intersections and Corner Visibility (Eight Triangles) at Intersections

BACKGROUND:

Intersections

At the May 12, 2013 Commission Meeting the Mayor and Town Commission directed the Administration to discontinue enforcement and prosecution of the Town Code that addresses corner visibility and right-line obstructions at properties abutting intersections. This directive was designed to "pause" all action related to this issue until such time as the Town Commission could better appraise itself of alternatives to the existing code.

The Administration has since discontinued enforcement of Sections 90-52 and 90-92 of the Town Code that addresses corner visibility and right-line obstructions at corner properties within the Town by: (1) ceasing to issue Courtesy Notices and Civil Citations associated therewith; (2) tolling any fines that may be accruing on existing Civil Citations that have already been issued but had yet to be scheduled to be heard by a Special Magistrate; and (3) continuing to toll any fines that have already been tolling by a Special Magistrate. To date, all cases except one have been resolved. Of those resolved, fines were waived and liens released after compliance was attained, or after reduced hearing fees and administrative costs were paid by non-compliant property owners. The aforementioned resolution was as prescribed by the Town Commission.

County Input

On August 5, 2013, the Town Commission held a Special Meeting which was attended by an Assistant Chief of the Miami-Dade Traffic Engineering Division. The County Engineer advised the Commission on County and State requirements related to corner visibility and discussed the minimum safe sight distance standards required under the

provisions of the State's Manual of Uniform Standards for Design, Construction and Maintenance for Streets and Highways (a/k/a Florida Green Book). The Florida Green Book is the regulatory tool used by the County, as required by the State.

In furtherance to the Administration's efforts to provide alternatives to the Town Commission, on August 20, 2013, staff met with the same County Engineer and looked at several of the most problematic intersections in the single-family residential neighborhoods. The County Engineer visited approximately six different intersections and individually assessed each intersection and provided feedback and recommendations based on the field inspections.

On October 8, 2013 a report was provided to the Town Commission which included the results of said field inspections and discussions with the County Engineer. Said Report is attached hereto as Exhibit "A".

Regulatory Authority:

The Code Compliance Division has the authority to enforce Town Code, Miami-Dade County Code, and Florida Statutes, as may be may be provided by Ordinance.

The County has informed the Administration that the definitive and final authority for sight triangle/corner visibility issues at intersections within the County (including the Town) is under the jurisdiction of Miami-Dade County.

ANALYSIS:

After discussions surrounding the governing regulatory documents, County staff reiterated that notwithstanding any other alternative that may be considered, the County's position was that the Florida Green Book was the required minimum standard for all municipalities.

County staff further informed the Administration that since governing protocol for local governance oversight was with the County, in the event of a complaint, the County would seek for the Town to enforce the Green Book standards. Failure to do so may require the County to put the Town on notice of a default in its responsibility to enforce same. As such, it was recommended that the Town adopt the Green Book into the Town Code.

However, based on these discussions, it was apparent that compliance with Green Book requirements may not be easily attainable Town-wide, as many corner properties (due to the limited width of the right-of-way easements and the lack of sidewalks in most areas) may not be able to meet the minimum standards set forth therein. These minimum standards include multiple "sight triangle" scenarios: some that address minimum sight clearances immediately after stop signs (which is similar to that currently in the Town Code); as well as others that address visibility clearances that are related to cross traffic and posted maximum speed limits, as well as other sight requirements for

certain turning movements (See Exhibits "B" and "C".) and will require a greater clear visibility distance than the 25 feet provided by Town Code. The result of our meeting with the County staff was that no readily available relief could be identified. Although there has been no readily verifiable history of accidents at the impacted intersections, the potential for increased liability should also be weighed.

On a separate note, it was also confirmed that many property owners have planted hedges and shrubs in the easement (in many cases, right up to the curb) that also hinder visibility. It was recommended that the most easily achievable resolution to address this issue was to cut the hedges and shrubs back.

Town Code Provisions

Section 90-92 of the current Town Code provides for the following:

When the subject property abuts the intersection of one or more streets or access ways, all landscaping within the triangular area located within 25 feet of the intersection of the front and side street property lines shall provide unobstructed cross-visibility at a level between 30 inches and eight feet, with the exception of tree trunks that do not create a traffic hazard. The property owner shall be responsible for maintaining all landscaping within the cross-visibility triangle. Landscaping, except required turf and groundcover, shall not be located closer than five feet from the edge of any roadway and three feet from the edge of any alley or pavement. All sight triangles shall be indicated on the landscape plans."

The Town Code further provides that "The town traffic engineer shall have final approval of the clear sight triangles."

Moreover, Section 90-88 (8) requires that "Shrubs and hedges shall be maintained that such plant materials do not obstruct clear sight **triangles** and promote vehicular and pedestrian visibility "

Additionally, for newly proposed construction, Section 90-52. Requires the following:

"As an aid to free and safe movement of vehicles at and near street intersections and in order to promote more adequate protection for the safety of children, pedestrians, operators of vehicles and for property, for proposed construction hereafter, there shall be limitations on the height of fences, walls, gateways, ornamental structures, signs, hedges, shrubbery, and other fixtures, construction, and planting on corner lots in all districts where front yards are required as follows:

(a) All corner properties shall provide and maintain unobstructed corner clearance areas measured a distance of 25 feet along both the front and side lot lines, measured from the point of intersection, of the intersecting lot lines.

certain turning movements (see Exhibits "B" and "C") and will require a greater clear visibility distance than the 25 feet provided by Town Code. The result of our meeting with the County staff was that no readily available letter could be identified. Although there has been no readily verifiable history of accidents at the proposed intersection, the potential for increased liability should also be weighed.

On a separate note, it was also confirmed that many property owners have planted hedges and shrubs in the easement (in many cases, right up to the curb) that also hinder visibility. It was recommended that the most easily achievable resolution to address this issue was to cut the hedges and shrubs back.

Town Code Provisions

Section 90-05 of the current Town Code provides for the following:

When the subject property abuts the intersection of one or more streets or squares ways, all landscaping within the triangular area located within 25 feet of the intersection of the front and side street property lines shall provide unobstructed cross-visibility at a level between 30 inches and eight feet, with the exception of low trunks that do not create a traffic hazard. The property owner shall be responsible for maintaining all landscaping within the cross-visibility triangle. Landscaping, except reputed turf and groundcover, shall not be located closer than five feet from the edge of any roadway and three feet from the edge of any alley or pavement. All sight triangles shall be indicated on the landscape plans.

The Town Code further provides that "The town traffic engineer shall have final approval of the clear sight triangles."

Moreover, Section 90-08 (8) requires that "hedges and shrubs shall be maintained that such plant materials do not obstruct clear sight triangles and promote vehicular and pedestrian visibility."

Additionally, for newly proposed construction, Section 90-22, requires the following:

"As an aid to free and safe movement of vehicles at and near street intersections and in order to provide more adequate protection for the safety of children, pedestrians, operators of vehicles and for property for proposed construction hereafter, there shall be limitations on the height of fences, walls, gateways, ornamental structures, signs, beacons, shrubbery and other fixtures, construction, and planting on corners in all districts where front yards are required as follows:

- (a) All corner properties shall provide and maintain unobstructed corner clearance areas measured a distance of 25 feet along both the front and side lot lines, measured from the point of intersection of the intersecting lot lines.

(b) All objects within any corner areas as previously defined shall be limited to a maximum height of 24 inches above the established elevation of the nearest curb;

(c) Any permanent or semi-permanent structures, including trees or shrubs, with the exception of walls or fences subject to the height limitations stated herein, shall not be allowed or constructed within any part of the corner clearance areas”

In the recent past, the Administration brought forth an ordinance amending the provisions of Sections 90-52 and 90-92 to clarify and combine these two sections. Said ordinance was passed on first reading, but second reading has been deferred until resolution of the sight triangle issue was reached.

Staff also looked at codes from a variety of other jurisdictions via “Municode” and found that a majority of jurisdictions had requirements comparable to those included in our Town Code, namely the 25-foot sight triangle distance requirement.

Florida Green Book Provisions

Based on what has been learned to date, the Florida Green Book is the ultimate governing regulatory tool available to the Town and is the State mandated minimum standard. County staff recommended that the Town adopt the Florida Green Book requirements as part of the Town Code since it was mandated by the State. However, the results of our efforts indicate that compliance with Green Book requirements may not be easily attainable Town-wide, as many corner properties (due to limited width of easements and lack of sidewalks) may not be able to meet the minimum standards, without reducing the height of all hedges and shrubs fronting the right-of-way of their property to 30 inches.

Chapter 14 (Exhibit “D” attached hereto) of the Florida Green Book does provide for certain exemptions to the Green Book requirements. Said exemptions are required when any of the Manual’s criteria for the 13 controlling design elements cannot be met. These include design speed, widths of right-of-ways and other elements, grades, slopes, elevations, stopping distances, and vertical and horizontal clearances.

Design Exceptions must be prepared and recommended by a Professional Engineer. The objective of the justification for Design Exception is to demonstrate the impacts on the operation and safety of the facility (the property) are acceptable compared to the impacts and added benefits of meeting the criteria. Requests for Design Exception must include Project Description, Operational Impacts, Safety Impacts, a Benefit/Cost Analysis, along with Conclusions and Recommendations. Both the County and the State must approve each Design Exception.

Based on the Design Exception requirements, pursuing same does not appear to be neither a practical nor viable alternative as the time, cost and resources required to properly analyze, calculate, document, and support such a program, on a case by case basis for each impacted property would be prohibitive.

In Closing


The hedges and corner visibility issue has pitted the desire of those individuals that have been impacted by the existing Code, and may be impacted in the future, with the issue of safety for pedestrians, bicyclists, drivers and others that use the Town's streets. The impacted individuals' interests appear to lie in their desire to provide privacy and safety for their families within their private property. The challenge for the Administration has been on how to balance the private privacy and safety issues while addressing the safety of those individuals who use our streets and public rights-of-way as a means of traveling and recreation. Although one could amend the Code and establish a specific process by which to provide relief on a case-by-case basis, the most difficult to address would be that of who will be responsible to make the final decision to accept or reject said request for relief. It is a very big burden to place on one individual, especially in light of other governing regulations that may be in play. Moreover, the issue of liability would need to be addressed.

Notwithstanding the specific outcome on this issue, it is recommended that if the provision remains in the Code, whether as existing, or as amended, the Code be enforced either reactively or pro-actively (with clear policy direction). If amended, there should be clear and unambiguous language for enforcement staff. If any type of relief is to be made available, a clear and definitive process should be provided on a case-by-case basis and should be separated from the enforcement division.

CONCLUSION:

After concluding discussions with County Engineering staff, and additional review by the Town Administration, including consideration of the options contained in the report provided at the October 8, 2013, Commission Meeting, it has been determined that any "relief", if available, would likely be minimal and probably not address the desires/concerns of many of the corner lot residents who have expressed their opposition to complying with the current regulations.

The Town Commission should consider adopting the previously approved (on first reading) Ordinance amending the code to clarify and combine the provisions of 90-52 and 90-92 and provide clear policy direction on future enforcement efforts.



Code Compliance Director



Town Manager



Town of Surfside Commission Communication

Agenda Item #

Agenda Date: October 8, 2013

Subject: Update on Hedge Sight Triangle (Corner Visibility) Issues

Background:

At the May 15, 2013, Commission Meeting the Mayor and Town Commission directed the Administration to discontinue enforcement and prosecution of the Town Code that addresses corner visibility and sight-line obstructions at properties abutting intersections. This directive was designed to "pause" all action related to this issue until such time as the Town Commission could better apprise itself of alternatives to the existing code. On August 5, 2013, a Commission Special Meeting was held and an Assistant Chief of the Miami-Dade Traffic Engineering Division attended to advise the Commission on County and State requirements related to corner visibility and discussed the minimum safe sight distance standards required under the provisions of the Florida Green Book (the regulatory tool used by the County, as required by the State). The Commission was advised that the ultimate authority for sight triangle/corner visibility at intersections within the Town legally falls under the jurisdiction of Miami-Dade County.

Analysis:

In furtherance to the Administration's efforts to provide alternatives to the Town Commission with regard to the sight triangles and traffic intersection visibility issue, on August 20, 2013, staff met with the same Assistant Chief Engineer and looked at several of the most problematic intersections in the single family residential neighborhood.

The County Engineer visited approximately six different intersections and individually assessed each intersection. After much discussion about possible alternatives

including: 1) traffic calming devices; 2) building "bump-outs" at intersections; and 3) moving stop bars and stop signs, County staff reiterated that notwithstanding any other alternative that may be considered, the Florida Green Book was the required minimum standard for all municipalities. County staff further informed the Administration that since governing protocol for local governance oversight was with the County, in the event of a complaint, the County would seek for the Town to enforce the Green Book standards. Failure to do so may require the County to put the Town on notice of a default in its responsibility to enforce same. As such, it was recommended that the Town adopt the Green Book into the Town Code. Moreover, based on these discussions, it appears that compliance with Green Book requirements may not be easily attainable Town-wide, as many corner properties (due to limited width of easements and lack of sidewalks) may not be able to meet the minimum standards set forth therein. These minimum standards include multiple "sight triangle" scenarios: some that address minimum sight clearances immediately after stop signs (which is similar to that currently in the Town Code); as well as others that address visibility clearances that are related to cross traffic and posted maximum speed limits, as well as other sight requirements for certain turning movements that may be required. A Powerpoint presentation will be provided illustrating several of these Green Book examples requiring a greater distance than 25 feet. The result of our meeting with the County staff was that no readily available relief could be identified. Although there has been no readily verifiable history of accidents at the impacted intersections, the potential for increased liability should also be weighed.

It was also confirmed that many property owners have planted hedges and shrubs in the easement (in many cases, right up to the curb) that also hinder visibility. It was recommended that the most easily achievable resolution to address this issue was to cut the hedges and shrubs back.

The Public Works Department reviewed the possibility of "Bump-Outs", and after looking at the intersections in question determined that minimally, to have these installed would cost about \$4,500 per intersection (with only simple concrete curb and no landscaping). Every intersection varies in the percent of drainage fall ranging from 2% to 5% from middle of intersection to curb. With that said, there could be a drainage obstruction at the intersections, which would require the engineer to certify before being built to ensure positive flow. The roadway is wide enough to accommodate parking as well as the bump outs but may not improve the line of sight. Reason being, the stop bar is in approximately the same location just more to the middle of the roadway. To have a better line of sight, you would have to be able to be more in the intersection to achieve a more clear view of the oncoming traffic. Currently, when approaching the intersection, one would have to ease out to the middle of the intersection to see, and would still have to do the same thing with the bump outs. Although you may somewhat improve visibility, but probably not enough for the recommended 25 foot sight triangle that is required. It is recommended that both the drainage and sight line issues be verified by professional engineers if a decision is made to further consider this option.

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Staff also looked at codes from a variety of other jurisdictions via "Municode" and found that a majority had requirements comparable to those included in our Town Code, namely the 25 foot sight distance triangle.

Budget Impact: None expected with current staffing levels and available resources.

Staff Impact: None as proposed.

Conclusion: After discussions with the County, review by Town staff, and consideration of the aforementioned options, the same input contained in the report provided in the August 5, 2013, Special Commission Meeting Agenda, and reported at said Special Meeting, is again provided. After the staff review, it has been determined that any "relief", if available, would likely be minimal and probably not address the desires/concerns of many of the corner lot residents who have expressed their opposition to complying with the current regulations.

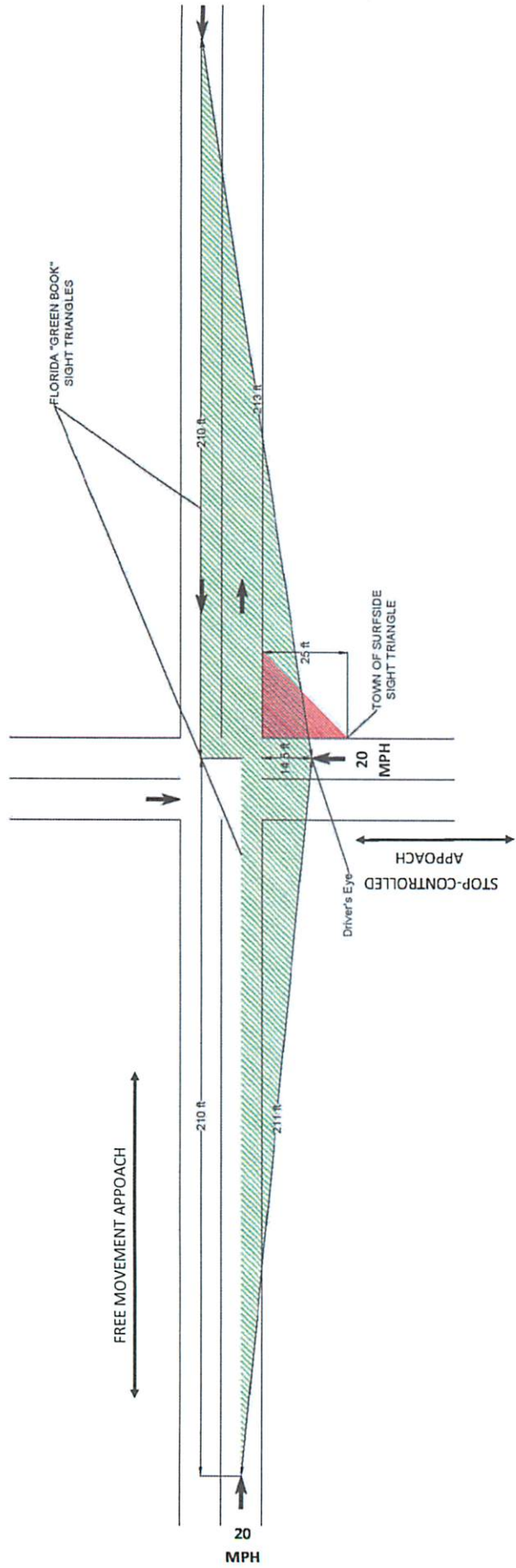
Commission direction is sought regarding the previously approved (on first reading) Ordinance amending the code to clarify and combine the provisions of 90-52 and 90-92 and policy direction on future enforcement.



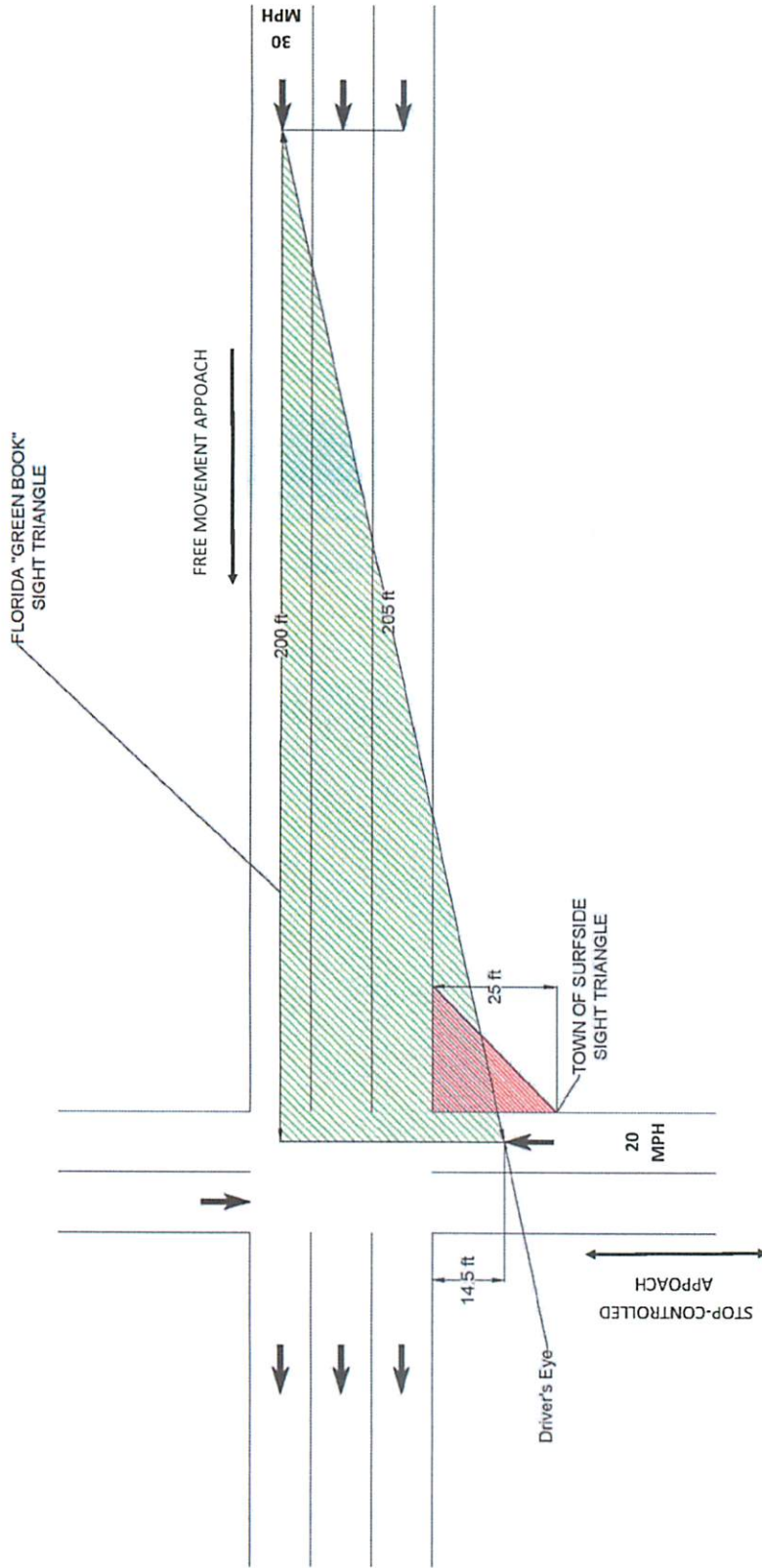
Joe Damien
Code Compliance Director



Michael Crotty
Town Manager



*Calculations based on FDOT's Manual of Uniform Minimum Standards for Design, Construction and Maintenance of Streets and Highways (commonly known as the "Florida Greenbook").
(Calculations based on a typical lane width of 12 ft)
This figure is presented for illustration purposes and cannot account for all possible configurations. For detailed information, refer to the "Florida Greenbook".



*Calculations based on FDOT's Manual of Uniform Minimum Standards for Design, Construction and Maintenance of Streets and Highways (commonly known as the "Florida Greenbook").
 (Calculations based on a typical lane width of 12 ft)

This figure is presented for illustration purposes and cannot account for all comparable configurations. For detailed information, refer to the "Florida Greenbook".

CHAPTER 14

DESIGN EXCEPTIONS

A	GENERAL	14-1
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EXHIBITS

EXHIBIT 14 – A	Sample Request Letter for Design Exception	14-6
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CHAPTER 14

DESIGN EXCEPTIONS

A GENERAL

Uniform minimum standards for design, construction, and maintenance of streets and highways are contained in this Manual and meet or exceed the minimum values established by AASHTO. Consequently, the values given govern the design process. When it becomes necessary to deviate from the Manual's criteria, early documentation and approval are required. This chapter provides the process for documentation and approval of Design Exceptions. When the Manual's criteria are met, no Design Exception is required.

To expedite the approval of these deviations, it is important the correct approval process be followed. The design project file should clearly document the action taken and approval given.

B DESIGN EXCEPTIONS

Design Exceptions are required when any of the Manual's criteria for the 13 controlling Design Elements listed below cannot be met.

- | | |
|------------------------|-----------------------------|
| 1. Design Speed | 8. Cross Slopes |
| 2. Lane Widths | 9. Superelevation |
| 3. Shoulder Widths | 10. Horizontal Alignment |
| 4. Bridge Widths | 11. Vertical Alignment |
| 5. Structural Capacity | 12. Stopping Sight Distance |
| 6. Vertical Clearance | 13. Horizontal Clearance |
| 7. Grades | |

If the county or municipality has adopted by ordinance design criteria for local subdivision roads and/or residential streets, compliance with those regulations is an approved design exception.

C RECOMMENDATIONS FOR AND APPROVAL OF DESIGN EXCEPTIONS

Design Exceptions are recommended by the Professional Engineer responsible for the project design elements (Responsible Professional Engineer). A public or private utility may submit to the maintaining authority a completed exception package for work designed by the utility's forces. However, if the design is by others, the package must be submitted, signed and sealed by a professional engineer licensed in the State of Florida.

All Design Exceptions require approval from the maintaining authority's (county or municipality) designated Professional Engineer representative with project oversight or general compliance responsibilities.

Any Design Exception that involves a state or federal facility must be processed through the Department's local District Design Engineer who will then follow Department processes for concurrence and approval by FHWA, if necessary.

The Department's Utility Accommodation Manual provides guidance on exceptions with respect to utilities.

D COORDINATION OF DESIGN EXCEPTIONS

In order to allow time to research alternatives and begin the analysis and documentation activities, it is critical that Design Exceptions be identified as early in the process as possible. This is preferably done during the planning phases of projects or as soon as possible in the initial design efforts.

When the need for a Design Exception has been determined, the Responsible Professional Engineer must coordinate with the maintaining authority and the Department (if applicable), to obtain conceptual concurrence providing any required documentation requested.

E JUSTIFICATION AND DOCUMENTATION OF DESIGN EXCEPTIONS

The objective of the justification of Design Exceptions is to demonstrate the impacts on the operation and safety of the facility are acceptable compared to the impacts and added benefits of meeting the criteria. All Design Exception requests shall include documentation sufficient to justify the request and independently evaluate the operational and safety impacts. Any request for a Design Exception should address the following issues applicable to the element in question:

Description:

- a) Project description (general information, typical section, etc.)
- b) Description of Design Exception (specific project conditions related to Design Exception, controlling design element, acceptable Manual value, and proposed value for project)
- c) The compatibility of the design and operation with the adjacent sections

Operational Impacts:

- a) Amount and character of traffic using facility
- b) Effect on capacity of the deviation (proposed criteria vs. Manual using an acceptable capacity analysis procedure and calculate reduction for design year, level of service)

Safety Impacts:

- a) Crash history and analysis (location, type, severity, relation to the Design Exception element)
- b) Impacts associated with proposed criteria (annualized value of expected economic loss associated with crashes)

Benefit/Cost Analysis:

Calculate a benefit/cost analysis which estimates the cost effectiveness of correcting or mitigating a substandard design feature. The benefit is the expected reduction in future crash costs and the cost is the direct construction and maintenance costs associated with the design. These costs are calculated

and annualized so that direct comparison of alternate designs can be made.

A benefit/cost ratio equal to or greater than 1.0 indicates it may be cost effective to implement a particular design; however, the final decision is a management decision which considers all factors. The key factors in the analysis are:

- a) Evaluation of crashes by type and cause
- b) Estimate of crash costs (based on property damage and severity of injuries)
- c) Selection of a crash reduction factor
- d) Selection of a discount rate
- e) Estimate of construction and maintenance costs
- f) Selection of life of the improvements
- g) Period of time over which the benefits will be realized

NOTE: Chapter 2 of the AASHTO Roadside Design Guide and the FHWA Technical Advisory titled "Motor Vehicle Accident Costs" dated October 31, 1994, provides guidance for the benefit/cost analysis, and may be considered.

Conclusion and Recommendation:

- a) The cumulative effect of other deviations from design criteria
- b) Safety mitigating measures considered and provided
- c) Summarize specific course of action

F FINAL PROCESSING OF DESIGN EXCEPTIONS

After conceptual approval has been obtained from the maintaining authority's designee and the documentation justifying the Design Exception is signed by the Responsible Professional Engineer and forwarded as per the sample request letter EXHIBIT 14 - A to the maintaining authority's designated Professional Engineer, the Design Exception will be reviewed for completeness and adherence to the requirements of Sections D and E, this Chapter.

If the Design Exception satisfies all requirements, the approval will be signed by the maintaining authority's designated Professional Engineer; and, if applicable, forwarded to the Department's District Design Engineer for concurrence.

When all signatures are obtained, the Design Exception will be returned to the Responsible Professional Engineer. A copy will be retained by the maintaining agency and the Department, if applicable.

EXHIBIT 14 – A Sample Request Letter for Design Exception

TO: _____

DATE: _____

SUBJECT: **DESIGN EXCEPTION**

Local road number or street name: _____
Project description (limits): _____
Type construction (new, rehab, adding lanes, resurfacing, etc.) _____
State and/or Federal road number (if applicable): _____

DESIGN EXCEPTION FOR THE FOLLOWING ELEMENT:

- | | | | |
|--|---|---|--|
| <input type="checkbox"/> Design speed | <input type="checkbox"/> Lane widths | <input type="checkbox"/> Shoulder widths | <input type="checkbox"/> Bridge widths |
| <input type="checkbox"/> Structural capacity | <input type="checkbox"/> Vertical clearance | <input type="checkbox"/> Grades | <input type="checkbox"/> Cross slope |
| <input type="checkbox"/> Superelevation | <input type="checkbox"/> Horizontal alignment | <input type="checkbox"/> Vertical alignment | |
| <input type="checkbox"/> Stopping sight distance | <input type="checkbox"/> Horizontal clearance | | |

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

Attach all supporting documentation to this exhibit in accordance with **SECTION 14 - E**.

Recommended by: _____
(Responsible Professional Engineer)

Approval: _____
(Maintaining authority's designated Professional Engineer)

Concurrence: _____
FDOT/FHWA (if applicable)