

# South Carolina



## Planning Education Advisory Committee

### Committee Members:

Stephen G. Riley, Chairman  
Representing MASC  
Term Expires: 2017

Phillip L. Lindler  
Representing SCAC  
Term expires: 2019

Cliff Ellis  
Representing Clemson University  
Term expires: 2020

Wayne Shuler  
Representing SCAPA  
Term expires: 2018

January 19, 2021

City of Tega Cay  
Susan Britt, AICP  
Planning & Development Manager  
7725 Tega Cay Dr.  
Tega Cay, SC 29708

Re: *Applications for Accreditation of CE credits for New Program*

Dear Ms. Britt:

On January 5, 2021, I received the program materials you submitted for the "Regional Transportation Initiatives and TIA Process." Upon receipt of the materials, an email was sent to confirm receipt by all Committee members as well as a deadline set for comments.

Under the "no objection policy" adopted July 8, 2009, the request for accreditation of this program has been approved, and the signed "Notice of Decision" is attached. A formal after-the-fact approval will be handled as part of a Consent Agenda at the regular quarterly meeting of the Committee, scheduled at 11:30 a.m. on Monday, February 8, 2021.

Thank you for your efforts to help make this program a success.

Sincerely,

A handwritten signature in black ink that reads "Stephen G. Riley".

Stephen G. Riley, ICMA~CM  
Chairman

cc: Phillip Lindler, Cliff Ellis, and Wayne Shuler

*South Carolina Planning Education Advisory Committee (SCPEAC)*

**NOTICE OF DECISION**

**Title of Program:** Regional Transportation Initiatives and TIA Process

**The following action has been taken by the SCPEAC on this application:**

ACCEPTED WITHOUT OBJECTION      Date: January 19, 2021


REVIEWED BY FULL COMMITTEE      Date: \_\_\_\_\_

- a)      X   ACCREDITED for: 90 min. CE credits: 1.5
- b)    \_\_\_\_\_ DENIED ACCREDITATION
- c)    \_\_\_\_\_ RETURNED for more information

**If accredited:**

a)    Authorized Course No.: 2021-01

b)    Date of accreditation: 01/19/2021

Signature of SCPEAC Representative: \_\_\_\_\_  


**APPLICATION FOR ACCREDITATION OF A CONTINUING EDUCATION PROGRAM**

**NOTE:** This certification form, together with the required information referenced therein, shall be submitted to the Committee. If no objections are raised by a member of the SCPEAC within 10 business days of receipt, the continuing education program shall be considered accepted. If an objection is raised, a teleconference meeting shall be scheduled with appropriate public notice, as soon as reasonably possible, to review the application.

Applications are due no later than 30 days prior to the first scheduled presentation of a program or class. The Committee will consider extenuating circumstances where the 30 day deadline cannot be met.

**1. Name and address of organization providing or sponsoring the orientation program:**

- a. Organization Name: \_\_\_\_\_
- b. Address: \_\_\_\_\_
- c. City: \_\_\_\_\_ State: \_\_\_\_\_ Zip Code: \_\_\_\_\_
- d. Telephone: \_\_\_\_\_ Email: \_\_\_\_\_

**2. Contact Information:**

- a. Name of Contact Person: \_\_\_\_\_
- b. Title: \_\_\_\_\_
- c. Telephone: \_\_\_\_\_ Email: \_\_\_\_\_

**3. Information on program:**

- a. Title of Program: \_\_\_\_\_
- b. Date(s) & Location(s): \_\_\_\_\_
- c. Brief description of the program and its content: \_\_\_\_\_  
\_\_\_\_\_

**4. Method of presentation:** \_\_\_\_\_  
\_\_\_\_\_

**5. Description of materials to be distributed:** \_\_\_\_\_  
\_\_\_\_\_

**6. When are materials distributed (before or at the time of the program):** \_\_\_\_\_

**7. Instruction time:** Indicate the total number of minutes of instruction time: \_\_\_\_\_

**NOTE:** Breaks, meals, and introduction should not be counted. A reasonable period of Q & A should be included and counted.

**8. Method of Advertisement (describe how you plan to notify local officials of program):** \_\_\_\_\_

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**9. Required attachments:**

- a. Brochure, if available
- b. Course Presenter(s) and credentials (include brief resumes and qualifications)
- c. Copies of all handouts and course materials
- d. Evaluation Form and method of evaluation (each program must be evaluated)

**10. Certification. By submitting this application, the applicant agrees to:**

- a. Allow in-person observation, without charge, of the Program by the SCPEAC Committee members. Any food, travel, or lodging costs will be the responsibility of the Committee member(s).
- b. The applicant acknowledges that its approval for this Program may be withdrawn for violations of the regulations or failure to comply with the agreements and representations contained herein and as may be required by the SCPEAC.

**11. Application and program materials shall be submitted:**

- a. Electronically to each of the Committee members emails as listed on the website (<https://www.scstatehouse.gov/SCPEAC/members.htm>); and
- b. Please cc all applications to the Chairman's assistant, Krista Wiedmeyer at [kristaw@hiltonheadislandsc.gov](mailto:kristaw@hiltonheadislandsc.gov)

## Regional Transportation Initiatives and TIA Process

This will be a two-part Program. The first part will be presented by David Hooper, Administrator of the Rock Hill-Fort Mill Transportation Study Area. Mr. Hooper will provide a overview of the current Regional Transportation Initiatives such as, improvements to Exits 85 and 87 of I-77, intersection improvements to regional corridors, and projects that cross and/or adjoin Regional MPOs planning areas.

The second part of the program will be presented by Amy Massey, Transportation Engineer with Kimley-Horne. Ms. Massey's presentation will include the definition and purpose of a Traffic Impact Analysis (TIA), the process for instituting and completing a TIA, the minimum thresholds required in a TIA and mitigation recommendations.

**Fort Mill and Tega Cay**  
**Board Members and Commissioners**  
*TIA Process*

Amy Massey, PE  
February 4, 2021

**Kimley»Horn**

# What is a TIS/TIA?

A TIS/TIA is a tool that identifies improvements to mitigate the incremental transportation impacts on the surrounding transportation network caused by a new development or redevelopment.

## **Fun Fact**

*A TIA and a TIS are the same thing.  
Different municipalities just use  
different names.*

# Traffic Impact Study (TIS)

## **Purpose**

“...a specialized engineering study that evaluates the effects of a proposed development on traffic conditions in an area. These studies help developers and government agencies identify the potential traffic impacts of a development and means to mitigate these impacts both on- and off-site.”

*-SCDOT Access and Roadside Management Standards (ARMS) Chapter 6 – Traffic Impact Studies*

*Note: must be performed by a P.E. licensed by the State of South Carolina*



# Transportation Impact Analysis (TIA)

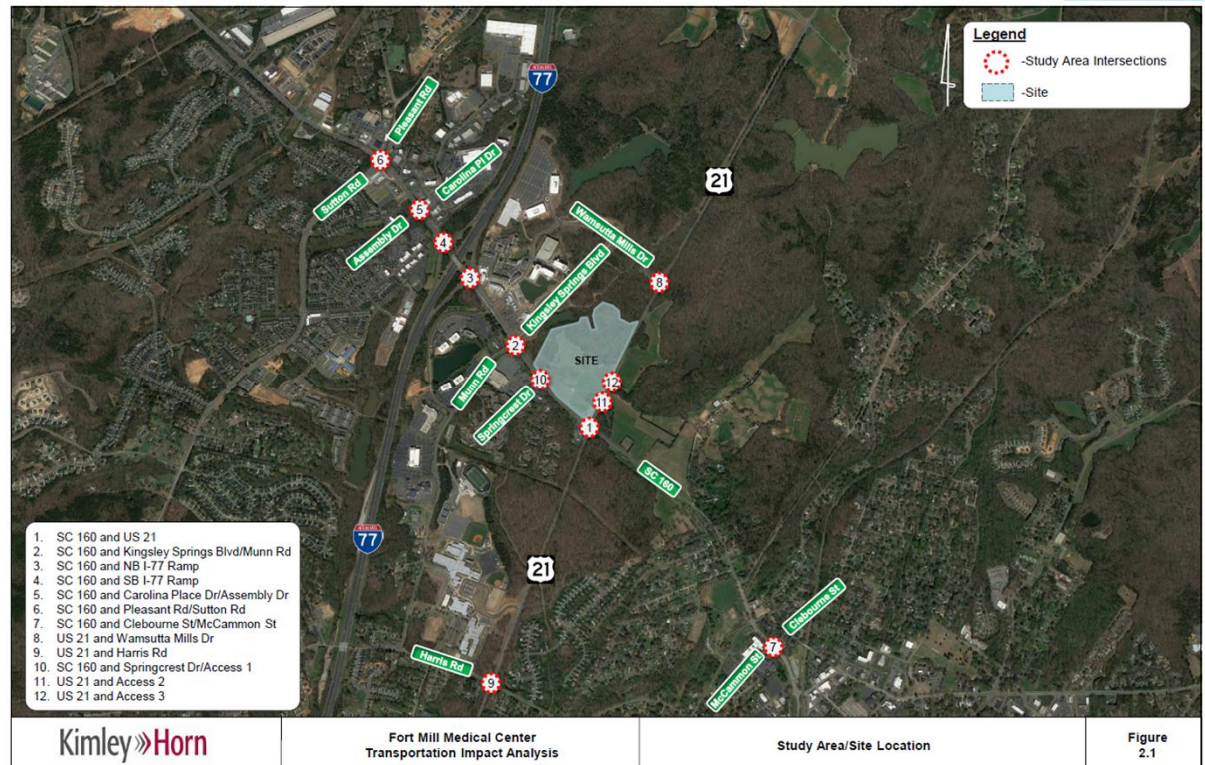
## **Purpose**

“...tool used to evaluate the incremental impacts on the surrounding transportation infrastructure and how to mitigate them to maintain safe traffic and transportation operations.”

*-Fort Mill Ordinance 2019-03/Section 8*

# What is a TIA?

- ***Vehicular***
  - ***Capacity***
  - ***Queuing***
  - ***Turn Lane Warrants***
- ***Intersections***
- ***Peak hours***



# What is a TIA?

- **Multimodal**

REGIONAL NETWORK  
PRIORITIZATION MAP

**Prioritization Score**

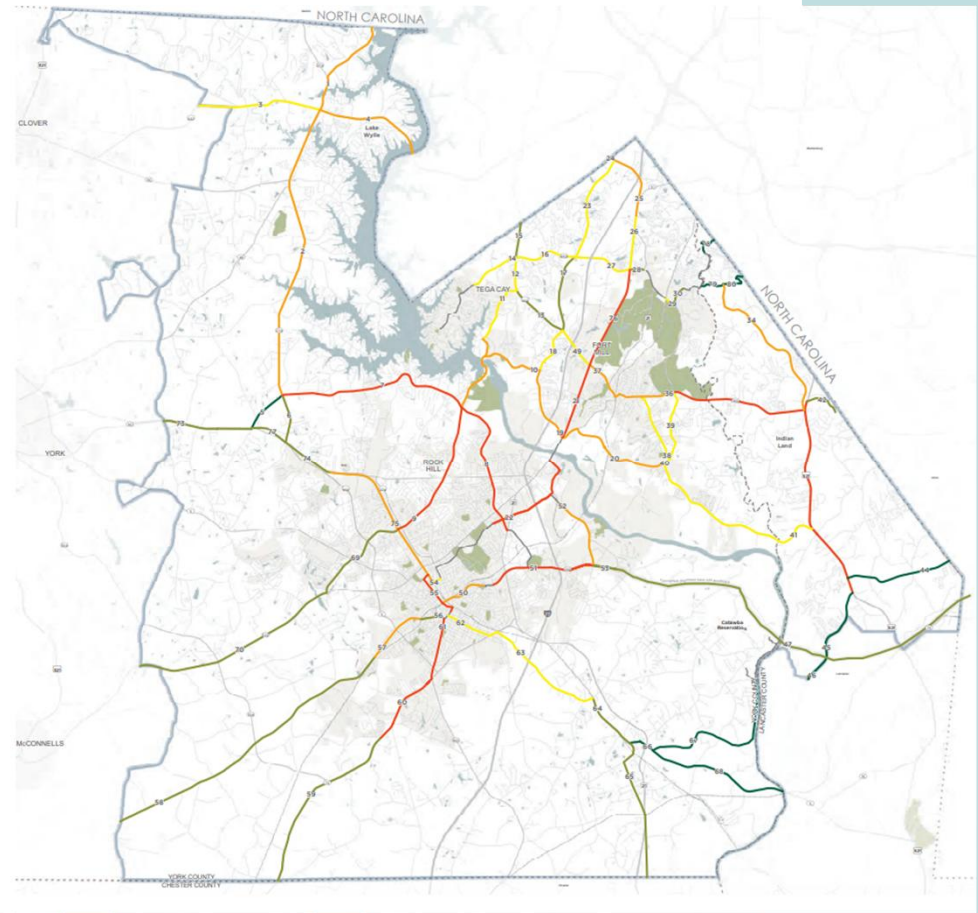
- 106 - 155
- 86 - 105
- 66 - 85
- 36 - 65
- 10 - 35
- Project ID

**Background**

- Existing Facility
- Park
- Water Body
- Municipality
- County Boundary
- RFATS Boundary



I. BIKE WALK RFATS



# What is a TIA?

- ***Crash Analysis***

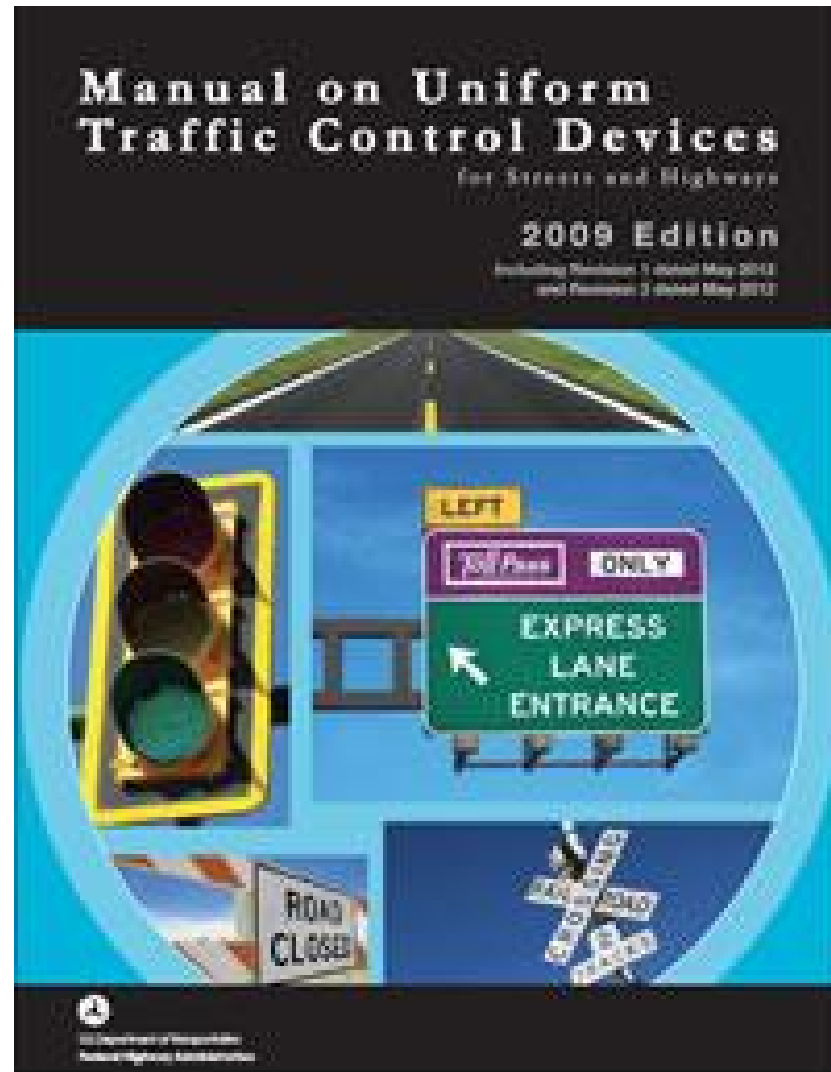
Crash Type	Number of Crashes
Fatal	0
Injury	0
Property Damage Only	4
Total	4

Crash Type	Number of Crashes
Rear End	1
Angle	1
Sideswipe Same Direction	2
Total	4

*SCDPS - OFFICE OF HIGHWAY SAFETY AND JUSTICE PROGRAMS  
STATISTICAL ANALYSIS AND RESEARCH SECTION*

# What is a TIA?

- ***Traffic Signal  
Warrant Analysis***



# TIA Process

1. Scope (local agency, SCDOT, Developer)
2. Perform/obtain traffic counts
3. Prepare TIA
4. Agency review
5. Comment/question resolution
6. Coordination with Developer
7. Opinion of Probable Construction Costs (\$ contribution) and/or Concepts (feasibility)
8. Mitigation Agreement

## What do we need to know to begin?

- Current Site Plan
- Land-use & Intensity
- Build-out Year
- Phasing (if any)
- Access Points/spacing
- Location
- Control Type (signal, RIRO, etc.)

# Minimum Thresholds for TIA

## *Trip Generation*

B. Minimum Threshold Examples		
Agency	Trip Thresholds	
	Daily	Peak-Hour
SCDOT	-	100
Fort Mill	400	100
Lancaster County	-	50
York County	400	100
Harrisburg	1,000	100
Mooreville	500	100
Hendersonville	1,000	100
Waxhaw	1,000	100
Belmont	1,000	100
Mount Holly	1,000	100
Charlotte	2,500	-
NCDOT	3,000	-
Davidson	500	100
Indian Trail	-	100

Land Use	100 Peak Hour Trips
Residential: Single Family	100 units
Apartments	150 units
Condos/Townhouses	190 units
Shopping Center	7,000 SF
Fast Food Restaurant (GFA)	2,500 SF
Convenience Store w/ gas (GFA)	8 FPs
Bank w/ Drive-In	4,500 SF
Hotel/Motel	170 rooms
General Office	20,000 SF
Medical/Dental Office	30,000 SF
Light Industrial	160,000 SF
Manufacturing	150,000 SF



# Minimum Thresholds for TIA

“The Town may also determine the need for a TIA or Transportation Technical memorandum based on special circumstances associated with the development, even if the gross trip generation falls below the identified threshold(s). This may be due to location, an intersection or thoroughfare nearby that is at or above capacity, the nature of the use, or one of the following:

1. Traffic generated from a non-residential development that could potentially significantly impact adjacent residential neighborhoods.
2. Traffic operation issues for current and/or future years on nearby streets are expected to be significantly worsened by traffic generated from the proposed new development.
3. Arterials and/or collectors near the site are experiencing significant/unacceptable delays.
4. Traffic safety issues exist at the intersection(s) or street(s) that would serve the proposed new development.
5. The proposed land use differs significantly from the future land use designation of the Town’s adopted Comprehensive Plan.
6. The internal street or access system is not anticipated to accommodate the expected traffic generation.
7. The proposed development project includes a drive-through facility or other uses, such as schools, that require significant on-site circulation that may have an off-site impact to adjoining roads and/or intersections.
8. The amount, behavior and/or assignment of traffic is deemed by the Town as being significantly different from a previously approved TIA, or more than 24 months have passed since completion of a previous TIA for the site.”

A TTM will be required for any proposed development when the conditions above are not met. In this case, the Town and its consultant will determine what the TTM will address.

# Traffic volume components

- Existing peak-hour turning movement counts
- Future background traffic
  - Existing
  - Historical growth
  - Approved, offsite development volume
- Future build-out traffic
  - Background
  - Proposed site traffic
    - ✓ Trip generation- projected based on national standards
    - ✓ Distribution/assignment

# Intersection components

- Geometric configuration (lanes)
- Turn lane storage lengths
- Traffic control
  - Stop sign
  - Signalized
  - Roundabout
- Limitations



# Mitigation

## **SCDOT**

- TIA 'should include proposed improvements or access management techniques that will mitigate any significant changes in the levels of service.'
- The Division Traffic Engineer will be responsible for final determination of mitigation improvements required to be constructed by the applicant.'

# Mitigation

## Fort Mill

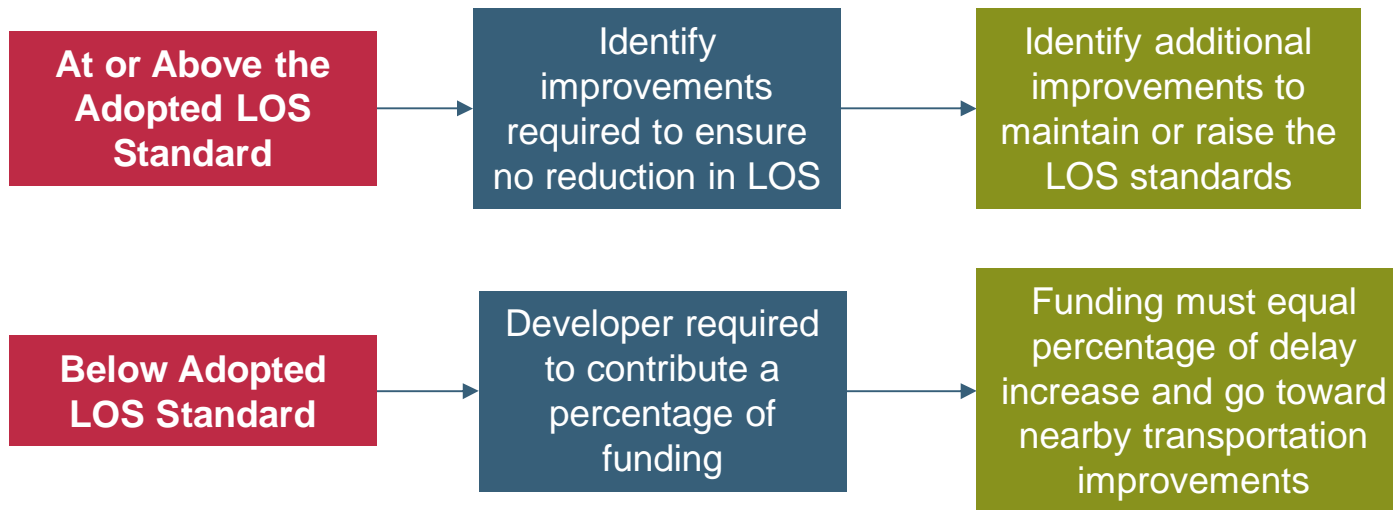
- the total average delay at an intersection or individual approach increases by 25% or greater, while maintaining the same level of service,
- the Level of Service (LOS) degrades by at least one level,
- **or Level of Service does not meet identified standard.**
  - C or better for collector/local
  - D or better for arterial+

Development is expected to mitigate only the impact caused by the proposed site.

# Mitigation

## York County (per YC TIAGM)

- Identify the need for road improvements or alternative transportation measures to mitigate LOS deficiencies and improve traffic flow.
- Analyze and recommend improvements to achieve the targeted LOS.



# LOS standards, per HCM

Table 6.0-A Vehicular LOS Control Delay Thresholds for <u>Unsignalized</u> Intersections		
Level-of-Service	Average Control Delay per Vehicle [sec/veh]	
A	≤ 10	Short Delays
B	> 10 – 15	
C	> 15 – 25	
D	> 25 – 35	Moderate Delays
E	> 35 – 50	
F	> 50	Long Delays

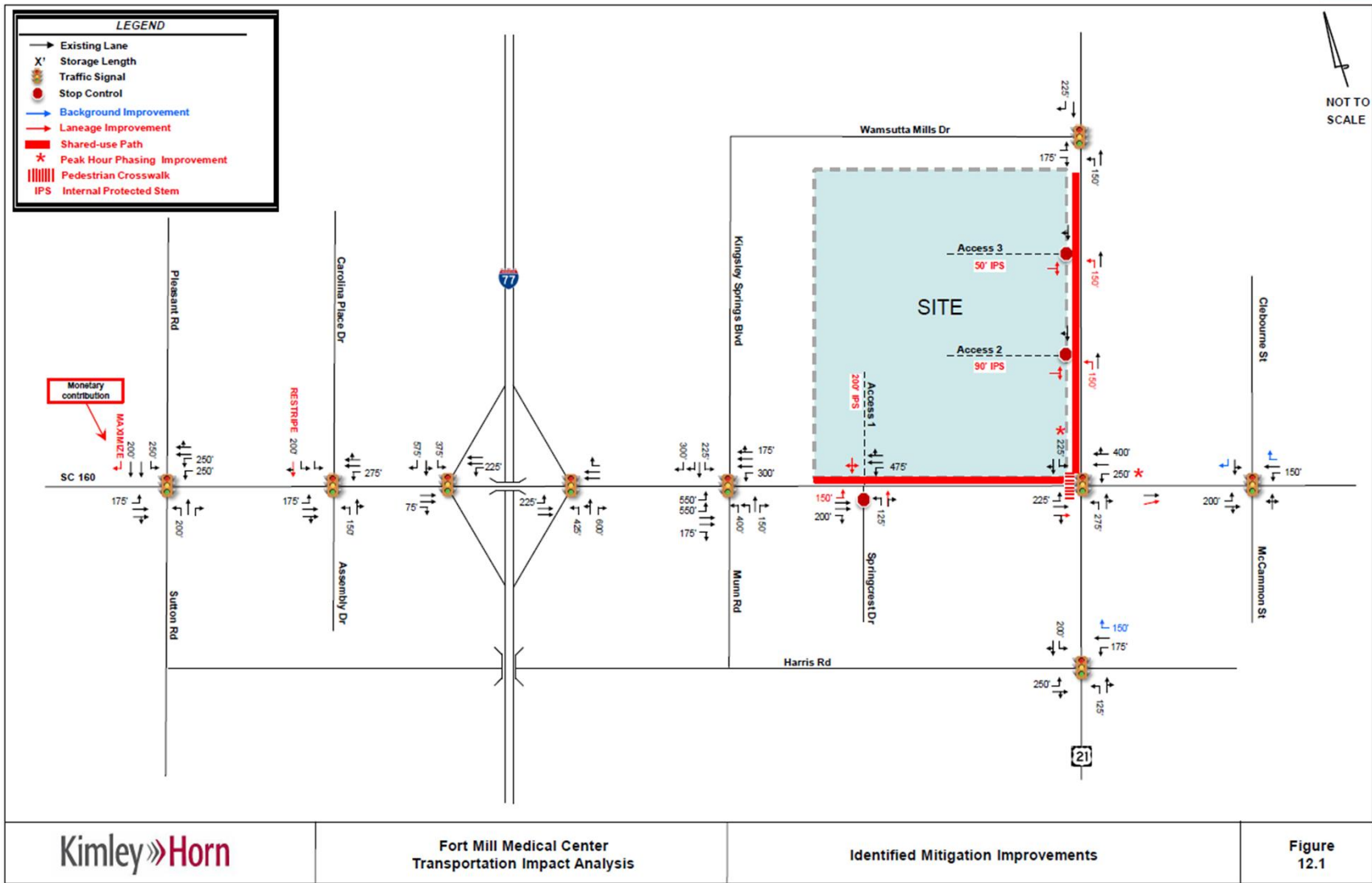
Table 6.0-B Vehicular LOS Control Delay Thresholds for <u>Signalized</u> Intersections	
Level-of-Service	Average Control Delay per Vehicle [sec/veh]
A	≤ 10
B	> 10 – 20
C	> 20 – 35
D	> 35 – 55
E	> 55 – 80
F	> 80

# Queuing

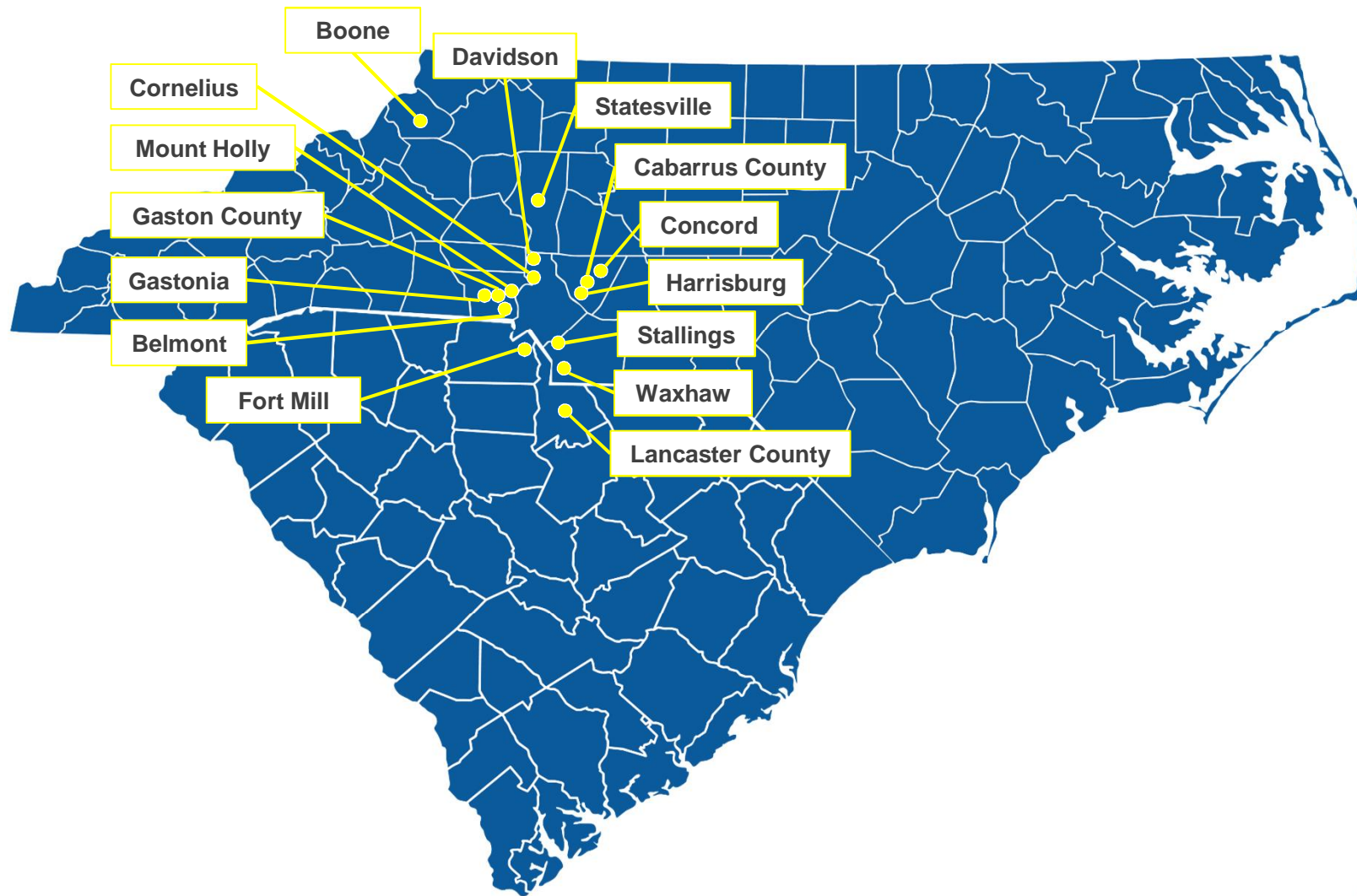




# TIA Recommendations



# Where we are working with communities





Questions?

Kimley»Horn

**David F. Hooper (RFATS)**

David is the MPO Administrator for the Rock Hill-Fort Mill Area Transportation Study – which is an intergovernmental transportation planning organization responsible for coordinating the development of transportation plans and programs for the eastern urbanized portion of York County and the northern portion of Lancaster County, South Carolina. The RFATS Study Area covers approximately 350 square miles, serves a planning area population of roughly 255,000, and is one of the fastest growing regions within the State of South Carolina.

As a federally mandated planning process, David is responsible for coordinating work in a range of areas that includes project planning and budgeting, social and environmental screening, congestion management, freight movement, public transit and air quality compliance, among many others. This process also requires active coordination with a number of federal and state agencies that includes the South Carolina Department of Transportation, the Federal Highway Administration, the Federal Transit Administration, the South Carolina Department of Health & Environmental Control, EPA as well as a host of other supporting organizations and interested parties within the greater Charlotte region.

David holds a bachelor's degree in political science and communication as well as a master's degree in public administration. David has experience in departments of finance, public works and planning.

## Amy Massey Bio

Amy is a licensed professional engineer in SC & NC, serving as a consultant with Kimley-Horn in both the public infrastructure and private land development areas. Amy has been with Kimley-Horn for 26 years, specializing in transportation planning and traffic operations over the course of her career. Kimley-Horn is a national, ENR Top 50 Civil Engineering Consulting Firm and one of FORTUNE's 100 Best Companies to Work For over 13 years. She currently serves as an I-77 Alliance Board member, York County Chamber Government Relations Task Force member, and CREW (Commercial Real Estate Women) Charlotte Programs Committee member. Amy lives in Tega Cay with her husband Will and two children, Jackson and Gregory.