

Traffic Signals & Roundabouts: An Update of GDOT Changes

GDOT, Office of Traffic Operations

July 20, 2009

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General Operations Manager



Traffic Signal Design Guideline

Started Updates and Changes in 2007

- Received input from multiple sources
 - Naveed Jaffar
 - Mike Busch
 - Larry Overn
 - Paul Weldon
 - District & State Traffic Operations Staff
 - Jim Gray
 - Doug Tilt
 - Bill Ruhsam
 - Josh Williams

Completed Updates and Changes in 2009

Traffic Signal Design Guideline

2009 MUTCD caused need for additional changes

- Met in March 2010
 - Larry Overn
 - Dee Taylor
 - John Hibbard
 - Josh Williams
 - Mike Busch
 - District & State Traffic Operations Staff

Traffic Signal Design Guideline

Added Georgia specific guideline content

- Left turn phasing
- Split phasing
- Blank out signs
- One head per lane requirement
- Pedestrian refuge islands
- Ped poles & ped signs
- Joint use poles
- Battery Back-up applications

Traffic Signal Design Guideline

Revisions to content

- Phasing orientation (language)
- Location of List of Materials
- Location of Input Assignment Chart
- Some signal related signs should be shown on design
- Detection (added IVDS, etc)
- Removed signal head displays (redundant to MUTCD)
- Many editorial changes
- Shifted sections around

Traffic Signal Design Guideline

June 2010

- Finalized comments

July 2010

- Incorporating final changes
 - Final edit of text
 - Revise Diagrams
 - Add hyper-links

Traffic Signal Design Guideline

August 2010

- Will send out draft design guide for comment
 - To participants / content advisors
 - ITE
 - RTOTF
- Revise any incorrect content
- Release final (living) document

Traffic Signal

Public Information Document

June 2009

- Traffic signal issues meeting (RTOTF)
 - Reevaluation of GDOT policy requiring pedestrian accommodation at all traffic signals
- Spawned the ITE Technical Committee Study
 - Jonathan Reid
 - **“Evaluating Pedestrian Guidelines for Non-Urban Intersections”**

Traffic Signal Public Information Document

August 2009 – March 2010

6 meetings for the ITE Technical Committee Study

- Developed into creating the
- **“Traffic Signals Public Information Document”**
 - Jonathan Reid
 - John R. Portwood
 - Todd DeVos
 - Larry Overn
 - Xuewen (Shawn) Le
 - Cdi Nyakwela
 - Alex J. Laffey
 - Tim Allen
 - Sue Anne Decker
 - R. Stevie Berryman
 - Xuejun Fan
 - Lyubov Zuyeva
 - Koushik Arunachalam
 - Andy J. Wang
 - Ben Robinson
 - Kathy Zahul

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Public Information Document

INTRODUCTION

- PURPOSE OF THIS DOCUMENT
- DISCUSS CODE, REQUIREMENTS AND PROCEDURES

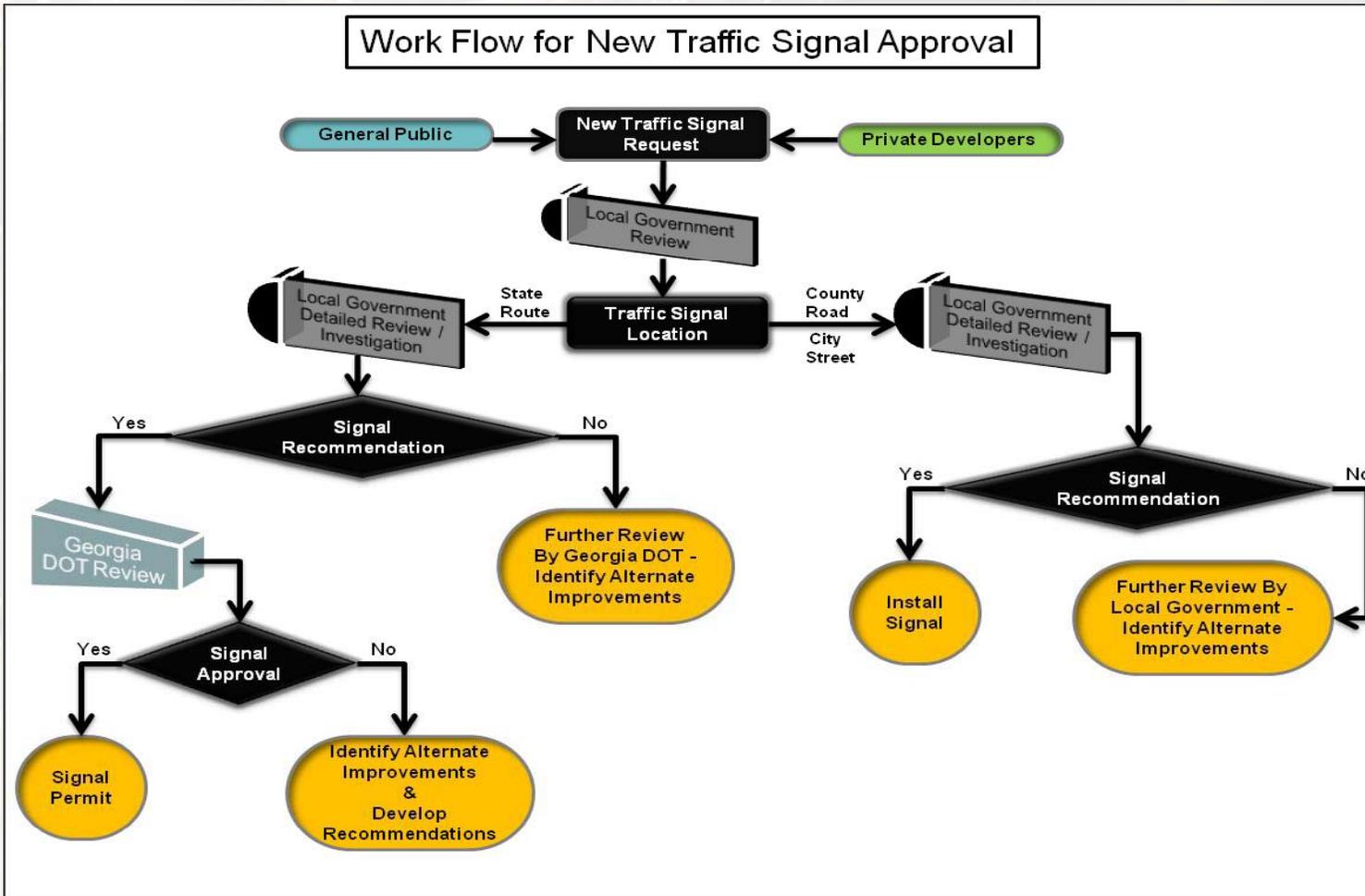
HOW DO I REQUEST A NEW SIGNAL?

- IS A SIGNAL NEEDED?
- WHAT ARE WARRANTS?
- WHAT ARE THE TYPES OF SIGNALS?
- WHO IS INVOLVED IN THE PROCESS?
- WORKING THROUGH LOCAL GOVERNMENT
- COUNTY AND STATE REVIEWS
- COMMON TRIGGERS FOR SIGNAL REVIEWS
 - *Citizen Request, Local Government Request, Serious Crashes, Permit by Developers*

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Work Flow for New Traffic Signal Approval



Traffic Signal

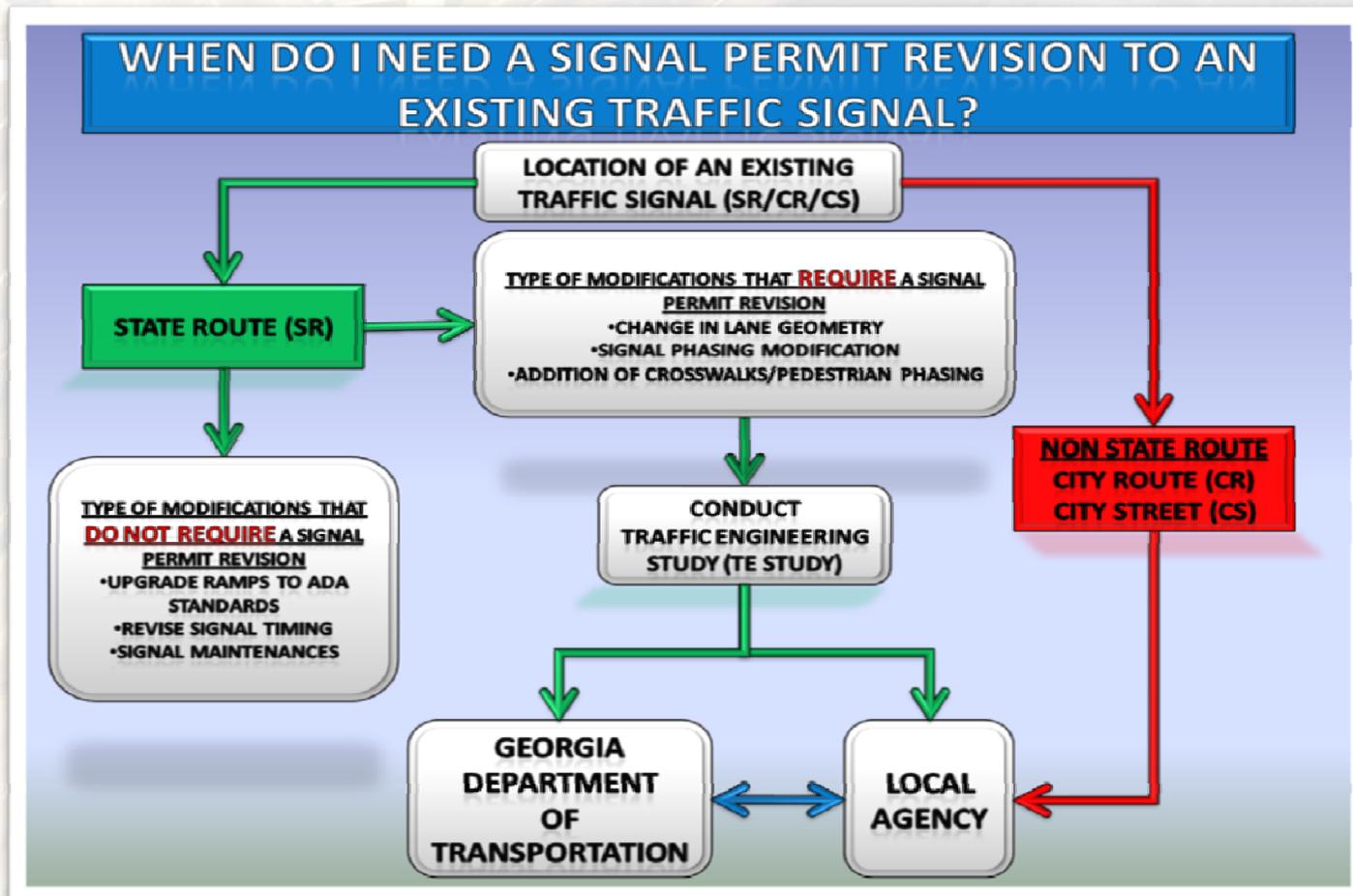
Public Information Document

HOW DO I REQUEST A SIGNAL PERMIT REVISION TO AN EXISTING TRAFFIC SIGNAL?

- TYPES OF MODIFICATIONS THAT REQUIRE A SIGNAL PERMIT REVISION
 - *Change in lane geometry*
 - *Signal phasing modification*
 - *Addition of crosswalks or pedestrian phasing*
- TYPES OF MODIFICATIONS THAT DO NOT REQUIRE A SIGNAL PERMIT REVISION

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TYPICAL PEDESTRIAN ACCOMMODATIONS

- **WHAT'S REQUIRED**
- **WHY ARE PEDESTRIAN ACCOMMODATIONS REQUIRED AT SIGNALIZED INTERSECTIONS**
 - *Traffic safety; Changing Land Use; Potential Future Transit Routes and Stops; Signal Timing Efficiency; Cost-Effectiveness of Current vs. Future Upgrades; Vehicle Breakdowns*
- **POTENTIAL EXCEPTIONS**
 - *Inside of a diamond interchange; Guardrail flush with face of curb; Large dropoff that prohibits a pedestrian's ability to navigate; Where grades exceed 8.3%*
- **PEDESTRIAN ACCOMMODATION**
 - *New Standard; Optional Elements to Improve Accessibility; Best Practices and Suggested Elements; Unsignalized Pedestrian Crossings*

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WHAT HAPPENS TO MY REQUEST?

- **FUNDING**

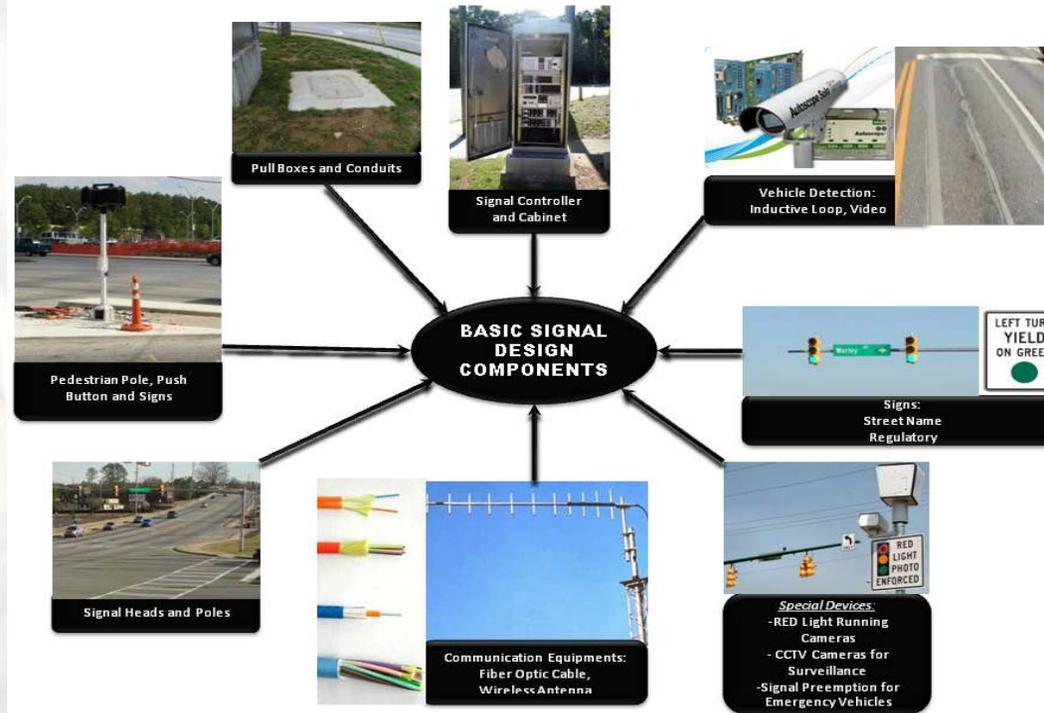
- *Local Government / Local Agency*
- *State Government / Federal Government*
- *Private Party / Developers*

- **TIMEFRAME**

- **DESIGN**

- *Design Considerations*
- **Design/ROW/Installation Details**

Traffic Signal Public Information Document



- REFERENCES AND RESOURCES
- DEFINITION OF TERMS
- FREQUENT ASKED QUESTIONS

GDOT Traffic Signal Website

On GDOTs external website www.dot.ga.gov

Dedicated traffic signal website:

- **Link to the Traffic Signal Design Guideline**
- **Copy of the Traffic Signal Public Information Document**

Roundabouts: *Where we are in Georgia*



SR 7 @ SR 74, Culloden, Monroe County, District 3

Georgia's Roundabout Website

www.dot.ga.gov/roundabouts

- Background
- Frequently Asked Questions (FAQs)
- Guidance Statement/Application
- Roundabout Analysis Tool
- Georgia Roundabout Policy (4A-2)
- Roundabouts in Georgia (Photo Gallery)
- Training (**Upcoming GDOT Class – August 3-5, 2010**)
- Links to other Roundabout Sites
- Contacts: **roundabouts@dot.ga.gov**

Roundabouts

Progress in GA

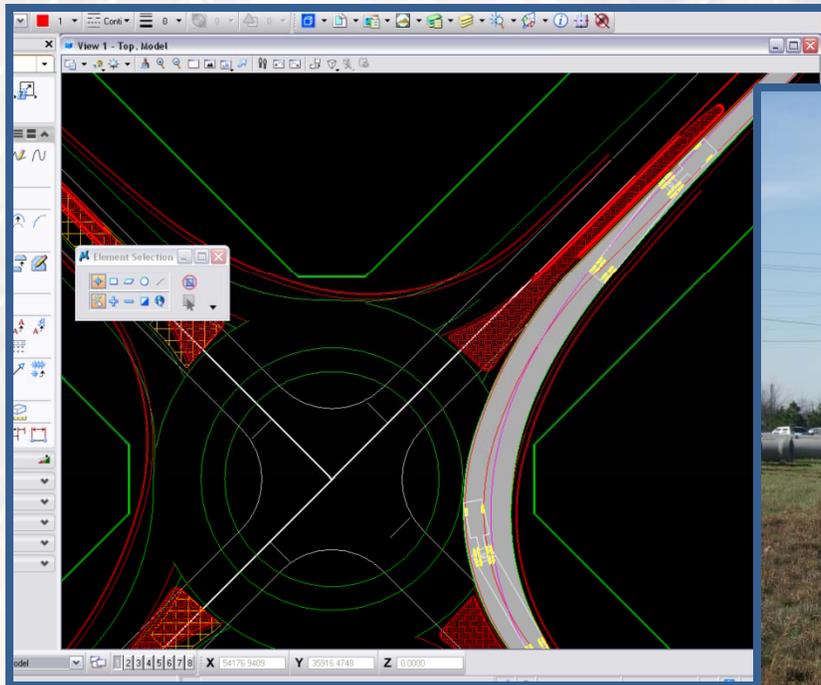
- 5-8 roundabouts constructed with State Funds
- Multiple others by local governments, residential/commercial developments



Roundabouts

Progress in GA

- Design Phase underway for 18+ GDOT projects
- More under consideration...

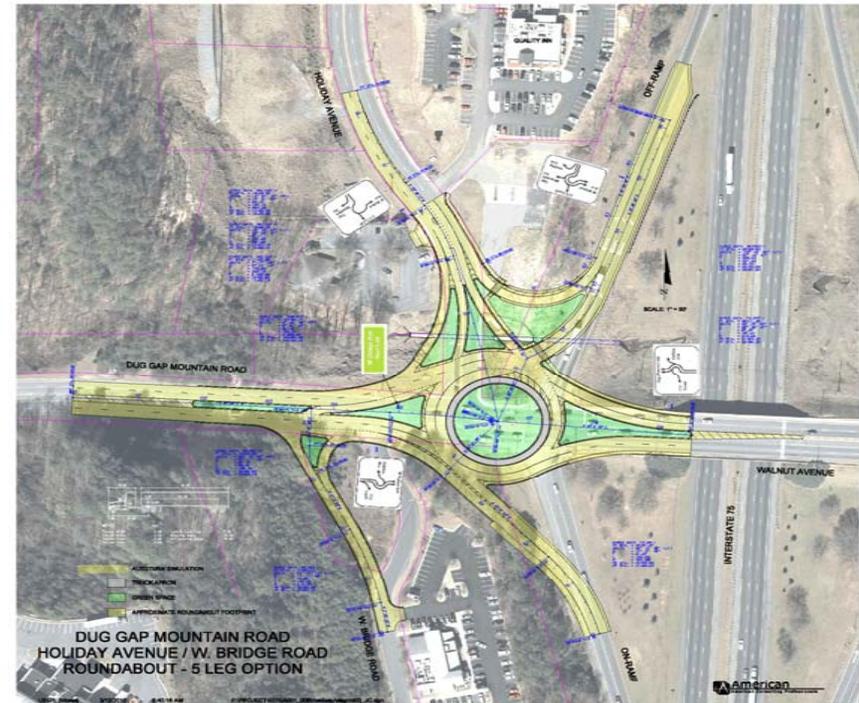


Roundabouts

Implementation Strategy

✓ Statewide Intersection Survey

- 120+/- intersections identified
 - Single lane rural
 - Single lane urban
 - Multi-lane
 - Interchange (2 roundabouts)
 - Combination



Roundabouts

Implementation Strategy

- ✓ **Inclusion in the GDOT's Safety Intersection Improvement Program**
 - Ranked (and Selected) by B/C analysis
 - Actual vs. Potential crashes
 - Initial cost estimates (PE, R/W & Construction)
- ✓ **Next Steps**
 - Local Government Coordination
 - Requesting letters of support
 - Commitment to pay utilities
 - Roundabout Validation Process (*new policy*)

GA Policy on Roundabouts

GA Policy 4A-2

Created December 2004

Modified March 2008

Revised March 2009

- allows multi-lane roundabouts
- Requires consideration as alternative
- Requires analysis if within thresholds

New Chapter 8 of the GA Design Policy Manual

Released June 2010

Roundabout Design Policy

Georgia Roundabouts Selection Criteria

Roundabouts may not operate well if there is too much traffic entering the intersection or if the percentage of traffic on the major road is too high. Candidate intersections shall be analyzed to determine whether a roundabout will perform acceptably. Shown below are thresholds to determine if a roundabout capacity analysis is required:

<u># of Circulatory Lanes</u>	<u>ADTs (current/build year)</u>	<u>% traffic on Major Road</u>
Single Lane	less than 25,000	less than 90%
Multi-Lane	less than 45,000	less than 90%

- ✓ ***A validation process*** should be used to validate the decision to use a roundabout for a given intersection.

Roundabout Design Policy

Roundabout Validation Process

Planning Level Assessment

- ***Survey of Site Conditions, Crash History, ADT Splits, Existing Geometry, Proposed Location***

Roundabout TE Study

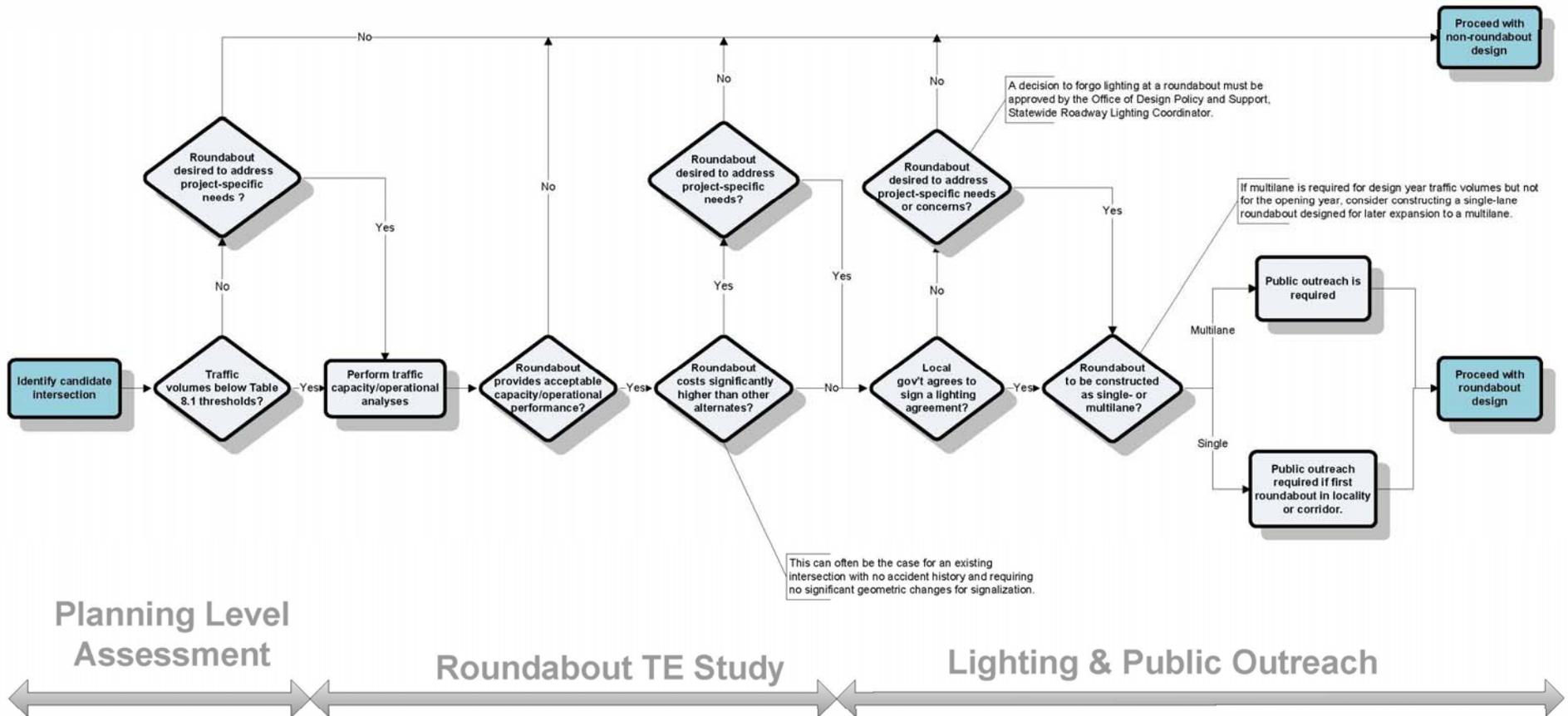
- ***Capacity Analysis, Conceptual Design Sketches, Cost Comparisons***
- ***Peer Review Strongly Encouraged***

Lighting/Public Outreach

- ***Letter of Commitment from Local Governments on Lighting/Landscaping***
- ***Public Information Meetings strongly encouraged areas unfamiliar to roundabouts***

Roundabout Design Policy

Roundabout Validation Process



Roundabout Design Policy

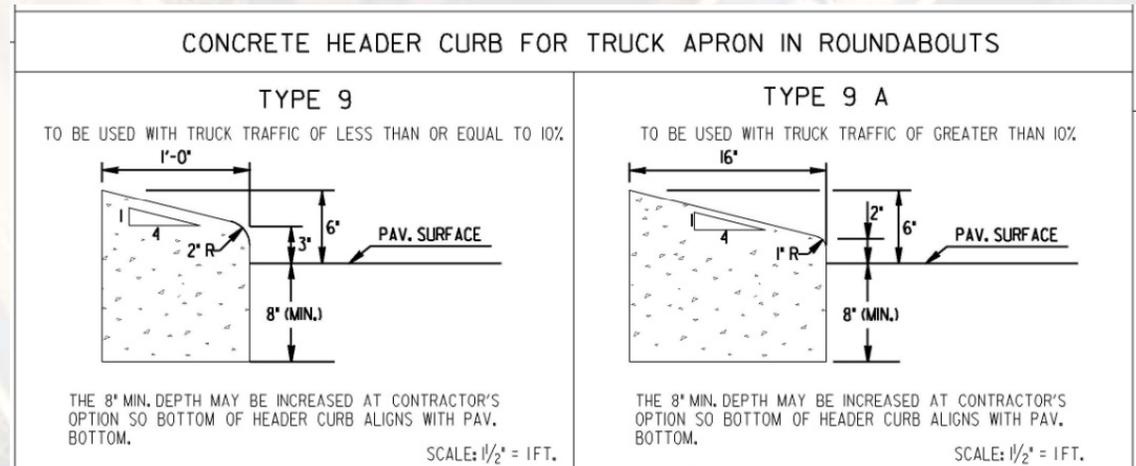
Georgia Roundabouts Approval Process:

- Proposed concepts for installation of new roundabouts, or retrofit of existing intersections with roundabouts, must be approved by the State Traffic Engineer.
- This approval should occur after initial public outreach activities and the Roundabout Validation process is complete.
 - Approved Roundabout TE Report
 - Initial Public Outreach
 - Letter of Commitment from Local Government

Roundabout Design Policy

Roundabout Design Guidelines

- Georgia-specific design practices to be used with the current FHWA Roundabout Guide.
- Topics include:
 - *Design Vehicle (WB-67)*
 - *Outside Curbing/Sidewalk*
 - *Pavement Design*
 - *Drainage*
 - *Entry Deflection*
 - *Splitter Islands*
 - *Signing & Marking*
 - *Pedestrian Crossings*
 - *Landscaping*
 - *High Speed Approaches*
 - *Curb at Truck Apron Face*



Roundabouts: *Lessons Learned*



- Use Central Island & Splitter islands

Carroll County (Roopville)

State Route 5 @ Glenloch Rd

Roundabouts: *Lessons Learned*



- Use Central Island & Splitter islands
- Use Truck Apron with Type 9 Curb Face

Hall County (Gainesville State College)

Mathis Dr. @ Landrum Education Dr.

Roundabouts: *Lessons Learned*



- Use Central Island & Splitter islands
- Use Truck Apron with Type 9 Curb Face
- Curb & Gutter Necessary

Dawson County

Dawson Forrest Rd @ Lumpkin Campground Rd

Roundabouts: *Lessons Learned*



- Use Central Island & Splitter islands
- Use Truck Apron with Type 9 Curb Face
- Curb & Gutter Necessary
- **Using Proper Design Vehicle & Drainage**

Culloden, Monroe County

State Route 7 @ State Route 74

Roundabouts: *Lessons Learned*



- Use Central Island
- Use Truck Apron with Type 9 Curb Face
- Curb & Gutter Necessary
- Using Proper Design Vehicle & Drainage
- **Central Island Landscaping**
- **Proper Lighting for Drivers & Peds**

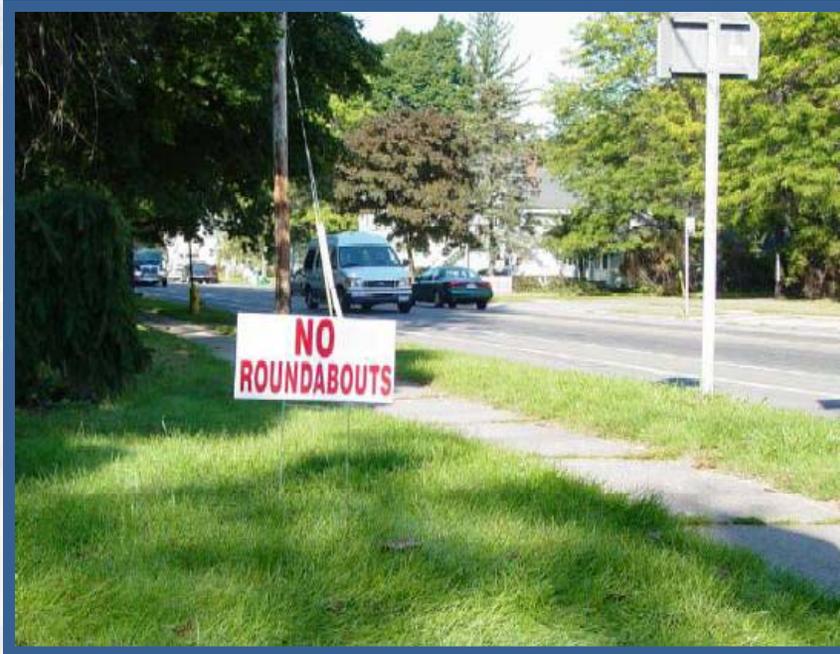
Douglas County

State Route 5 @ State Route 166

Roundabouts: *Lessons Learned*

Don't forget Public Outreach!!

- Developing Statewide Public Education Strategy
 - *Video by Office of Communications*
- Soliciting Local Government Buy-In Early



Right Locations + Proper Validation + Good Design = Successful Program

Questions?

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Traffic Operations

404-635-8127

roundabouts@dot.ga.gov
www.dot.ga.gov/roundabouts