



# MANAGED LANE DESIGN-BUILD BEST PRACTICES

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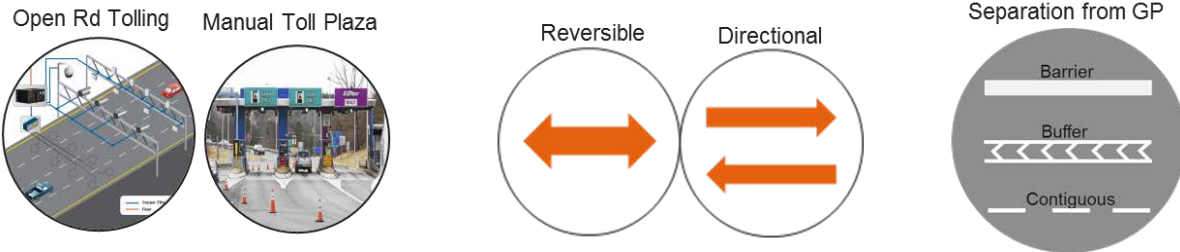


# How is a Managed Lane DB Different?

- Typically multiple owners



- Varying managed lane applications



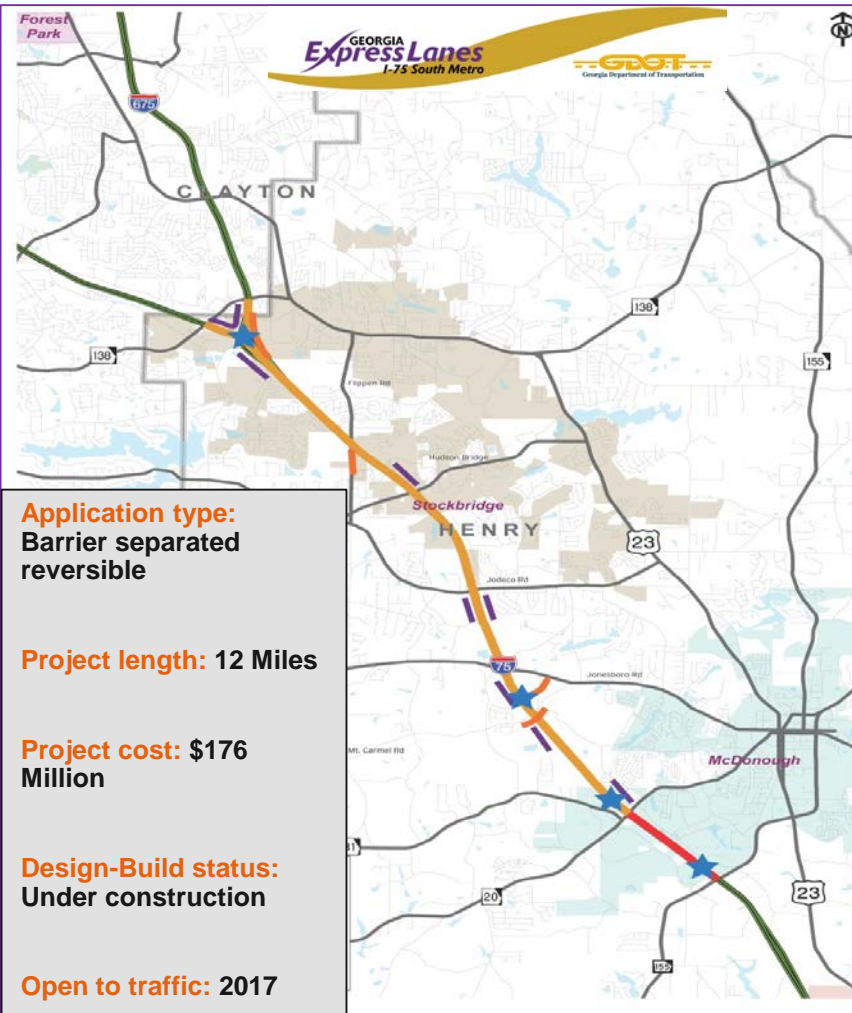
- Specialized contractors & designers



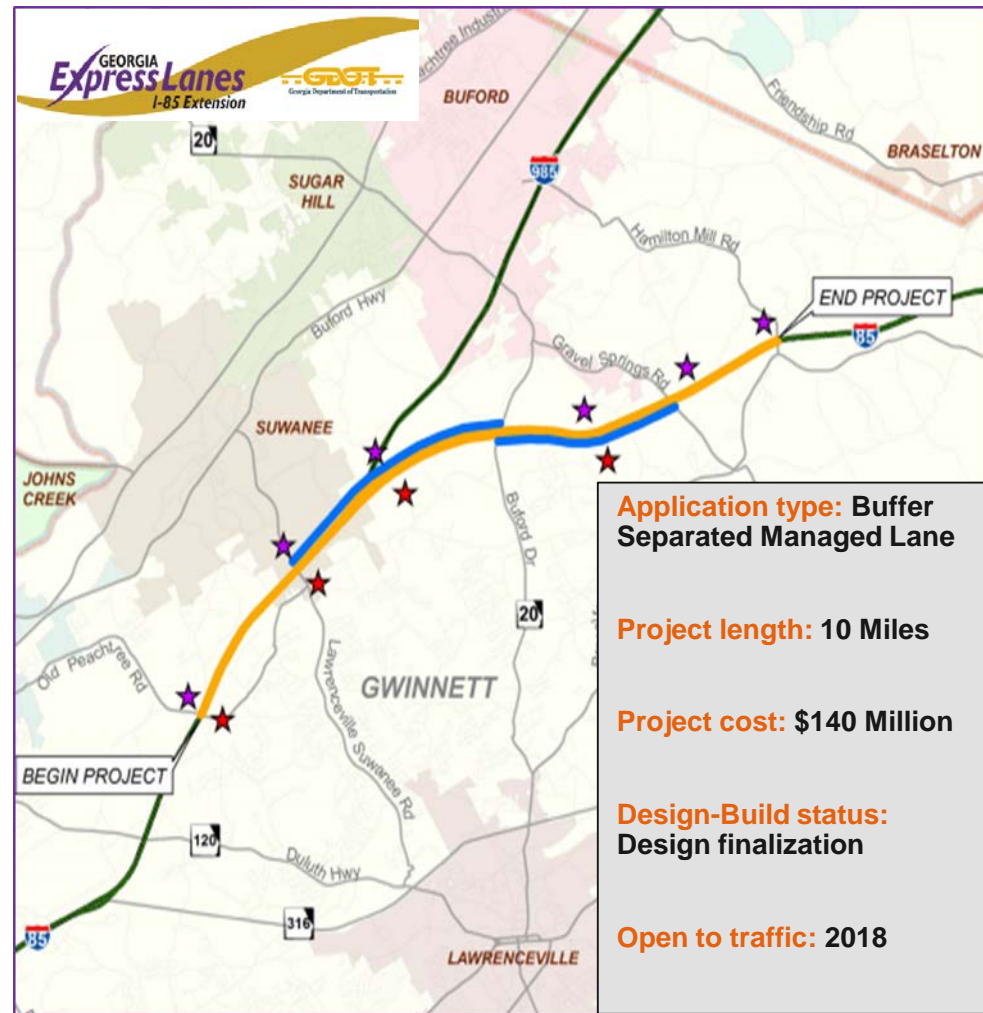


# Case Studies

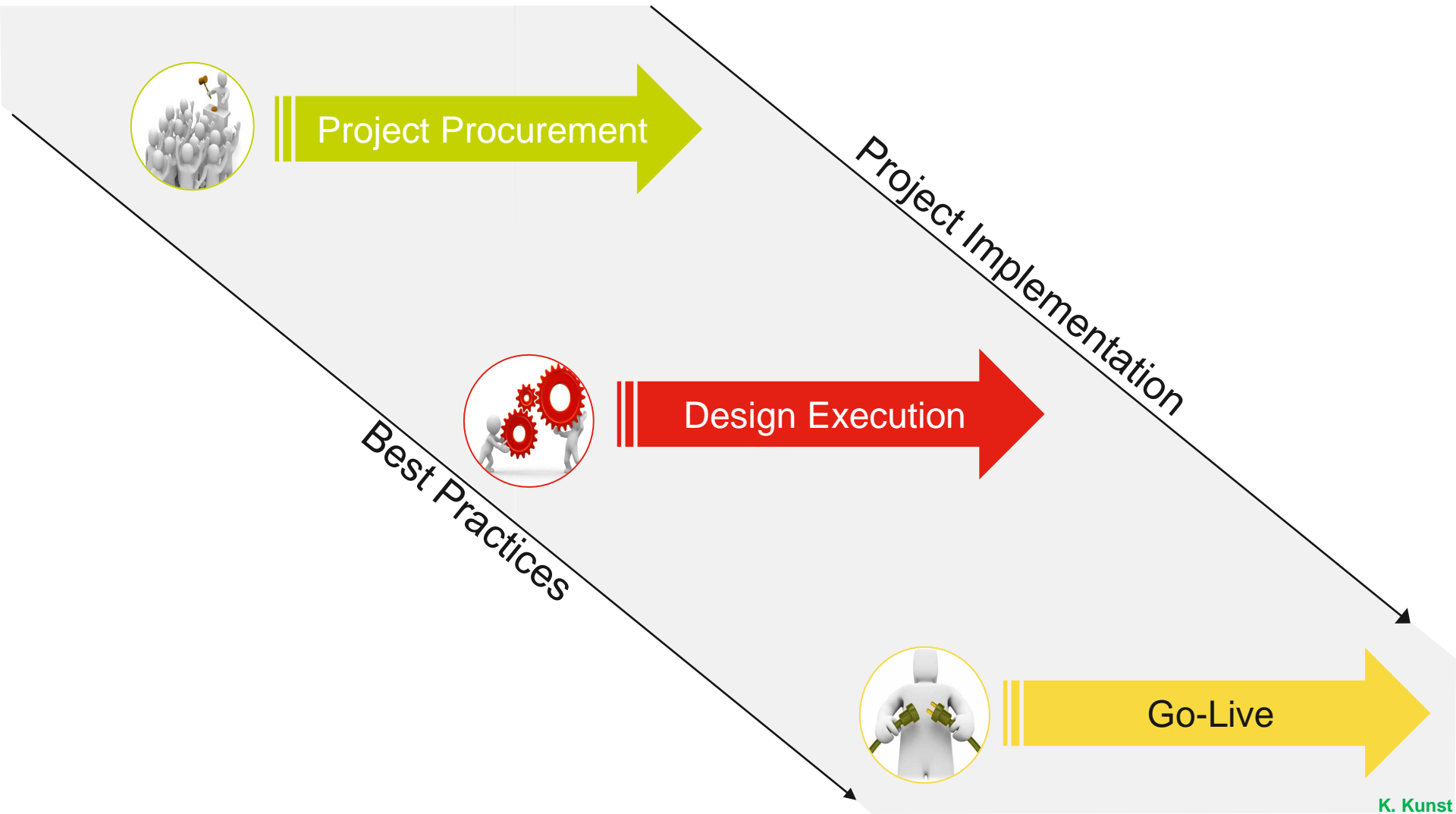
## I-75 Metro South - Reversible



## I-85 Extension - Directional



# Primary Stages of a Design Build Process





Project  
Procurement



**Best Practices**

### From Owner's Side

- Pay attention to the sequence of contract execution
- Pre-define electrical and tolling performance needs
- Include provisions for future expansion

### From Designer's Side

- Clear demarcation of roles & responsibilities
- Discover inconsistencies in the RFP
- Make the best use of Q&A and one-on-one opportunities
- Understand the fine line between value added & cost overrun





**Best Practices**

## Design Coordination

- Schedule design coordination workshops
- Prioritize electrical design
- Don't just assume, confirm your design!



## Coordination Workshops : Why do we do this?

### Design Coordination Workshops



- Helps to bridge the gap between specs and goals/needs
- Make mistakes here: Helps avoid repeat errors and brings consistency
- Discrepancy resolution
- Helps build team camaraderie



## Design Workshop Sessions

- **Workshop #1 : Make it valuable!**

Goal : Focus on bringing parties together to discuss background, history, contract, and each other's perspective/needs

### Toll System Integrator

- Performance Metrics/SLA
- Geometry, Camera angles
- Loop arrangement
- Facility type

### Designer

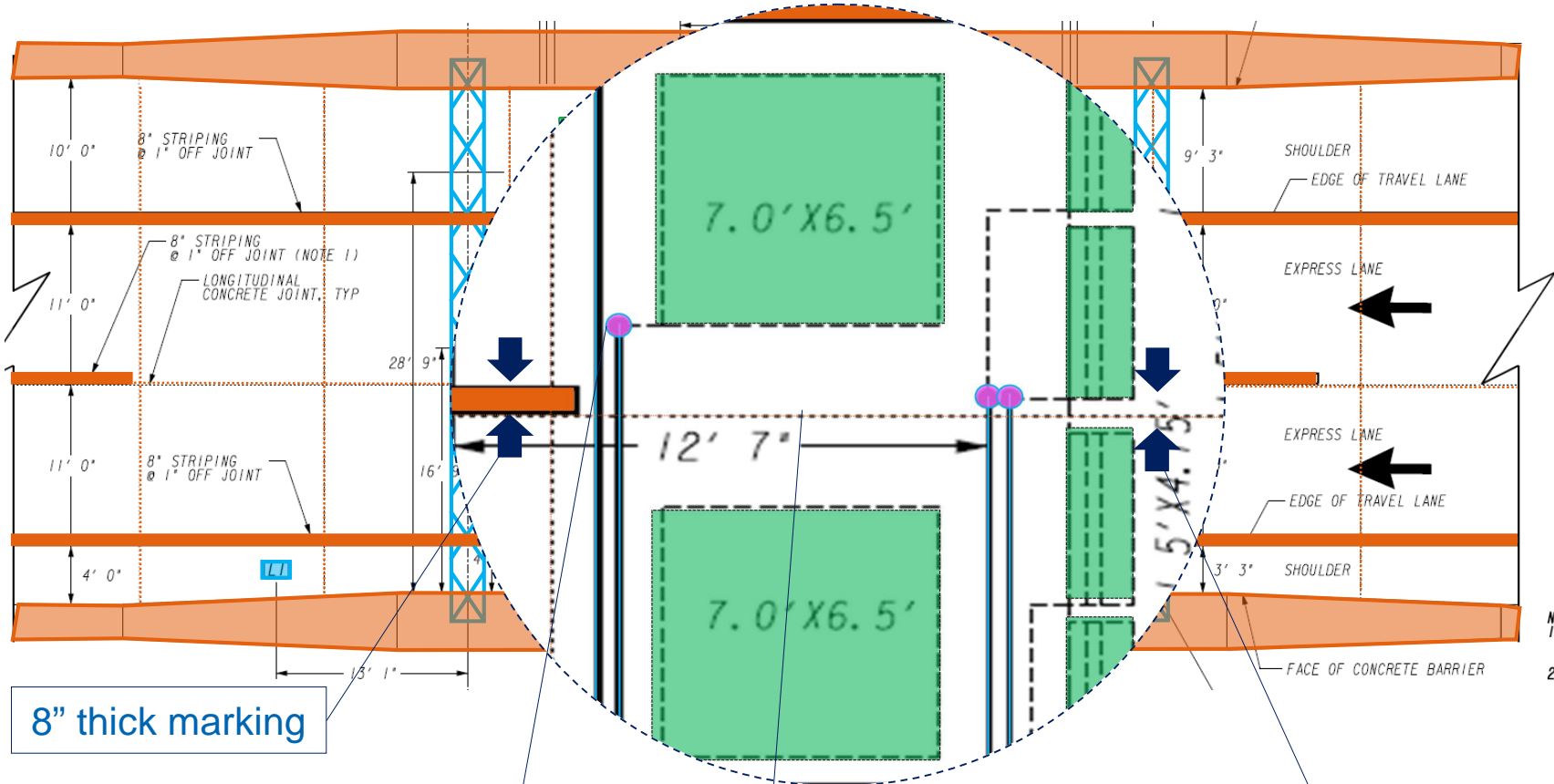
- AASHTO
- MUTCD
- State requirements
- NEPA/Permitting

- **Hold more workshops than required (including topic specific)**
- **Use prototype plans**
- **Consider implementing over the shoulder reviews**





## Design of Toll Zone Loop Layout (Reversible Lane System)



8" thick marking

Conduit stub-up point

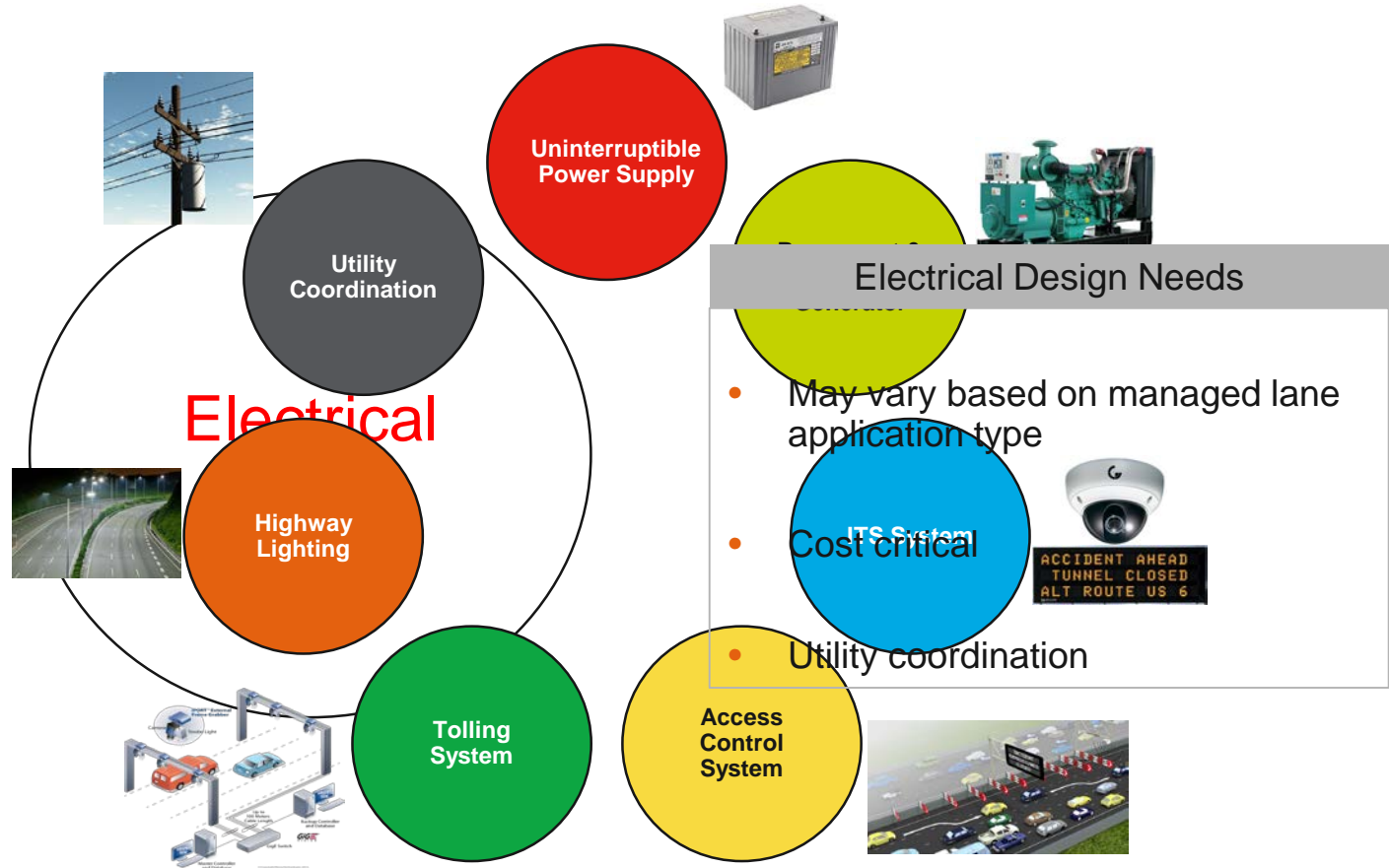
Construction joint

- 1' axel clearance
- Avoid joint conflict
- Avoid marking conflict



## Electrical Design Aspects (I-75 Metro Express)

Prioritize Electrical Design

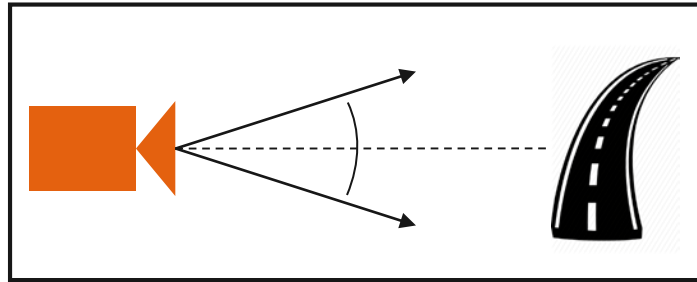




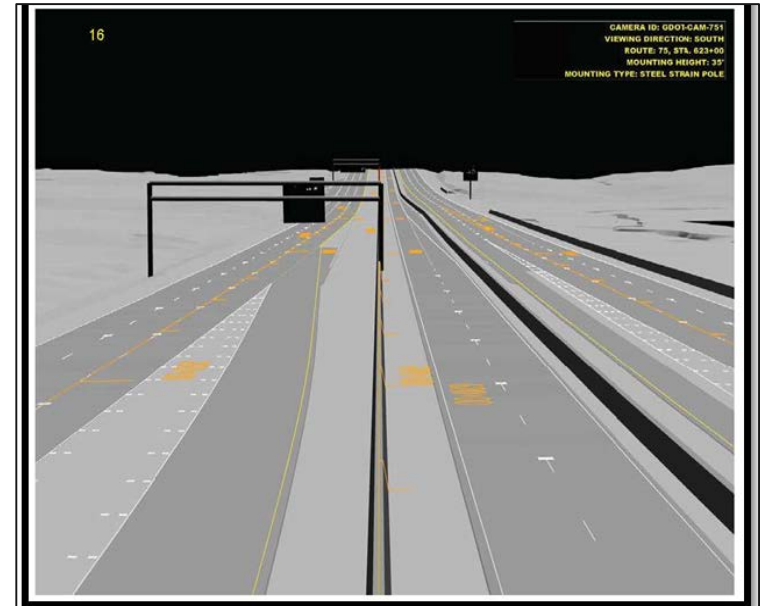
Design Execution



### CCTV Coverage Confirmation (I-75/I-85 Express)



Northbound



Southbound

Don't just assume it,  
CONFIRM IT!



**Best Practices**

## Goals of Go-Live Process

- Demonstrate elements of your design by testing
- System testing through field pilot site
- Help owner operators/emergency responders familiarize with the project



Go-Live



## Shared Microwave Detection System Testing

Installation



Shared  
Microwave  
Detector

GDOT

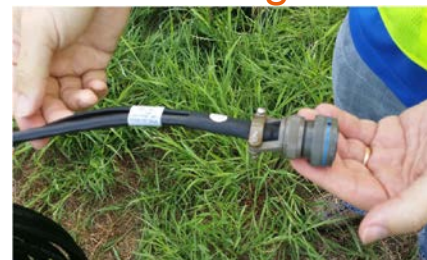
SRTA



Test Site



Cabling



Cabinet Connection



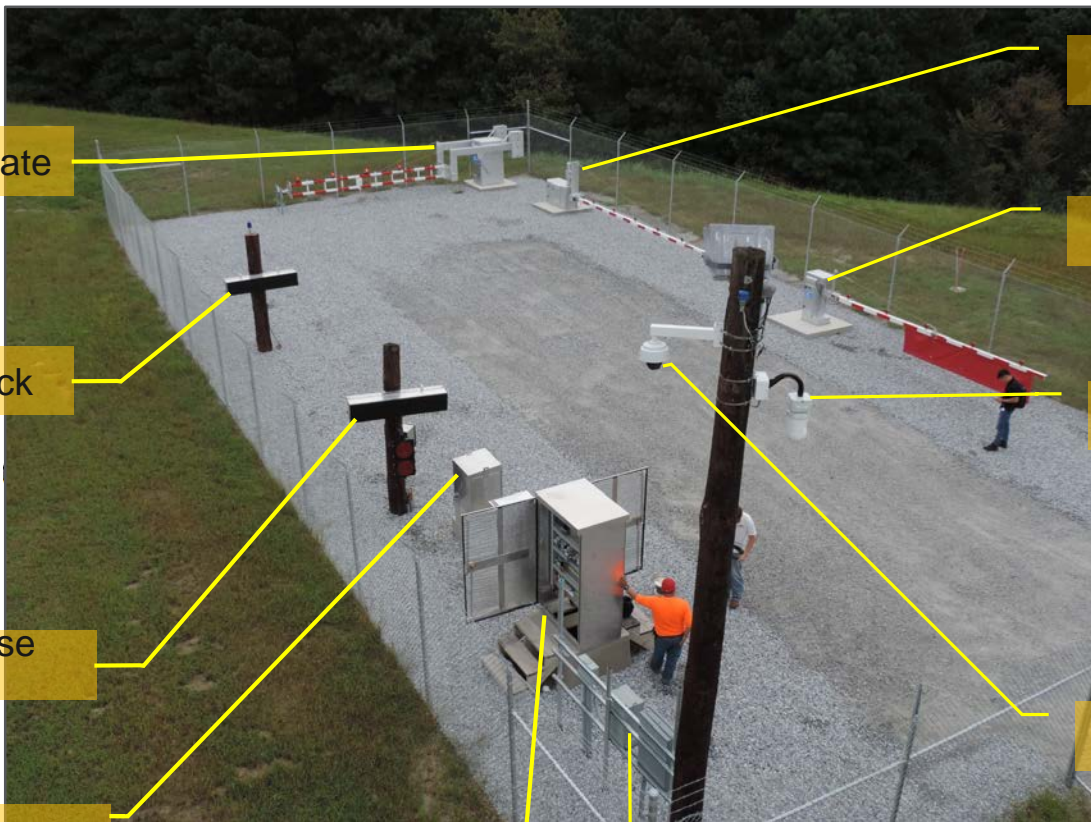




Go-Live



## Pilot Site – Reversible Access Control System



Resistance Gate

Toll Rate Brick

Open\Close  
Brick

Signal Cabinet

ACS Cabinet

Electrical  
Equipment

Warning Gate  
HW4

Warning Gate  
HW2

Night Vision  
Camera

CCTV





# Best Practices



ITS  
Contractor

Tolling  
Agency

## Do not be passive, Stay involved!



Electrical  
Designer

Highway  
Designer

ITS & Tolling  
Integrator

ITS &  
Electrical  
Designer

Tolling  
Designer



# Thank you!



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