

Optimizing SUE on GDOT Projects (PDP)



What Projects are Good Candidates for SUE Services?


- **High Level of utility congestion expected**
- **High probability of utility conflicts on construction expected**
- **Project Area is characterized as suburban or urban**
- **Poor previous experience with utility owners to provide timely/accurate information**
- **High utility relocation costs estimated**
- **High probability existing utility installations can be retained to save relocation costs**

Who can Identify and Request SUE Services?

- **Identify:**
 - Anyone involved with the project may identify a good candidate
- **Request:**
 - GDOT Project Manager
 - District Utilities Engineer
 - State Subsurface Utilities Engineer

How to Request SUE Services

- Step 1:
 - Go to GDOT's Office of Utilities website
 - Click on Subsurface Utility Engineering (SUE) Link
 - Open the SUE Project Utility Impact Form
 - Fill out Form
 - Save the SUE Project Utility Impact Form



SUE Utility Impact Rating Form
Revised 05-17-08

PI# / Project#:

Date:

Project Description:

Instructions:

A. For each Question below, 'Double click' or manually check the Rating box that best fits your opinion of the issue.

Question	Rating		
1. How many utilities are expected to be encountered on this project?	Low <input type="checkbox"/> 0-2	Med <input type="checkbox"/> 3-4	High <input type="checkbox"/> >4
2. Generally, for the type of work proposed, what is the probability for utility conflicts to be encountered on construction for this project?	Low <input type="checkbox"/>	Med <input type="checkbox"/>	High <input type="checkbox"/>

3. Which b
on this r

Utility Impact Score			
Total Boxes Checked:	5	4	1
Utility Impact Score:	2		

4. How car
propose

C. Match the Utility Impact Score from above with the corresponding Utility Impact Rating shown below and use the results to check the correct "Project's Utility Impact Rating" box on the "SUE Request Form".

Utility Impact Ratings	
1- Low	Project minimally impacted by utility issues
2- Med	Project moderately impacted by utility issues
3- High	Project severely impacted by utility issues

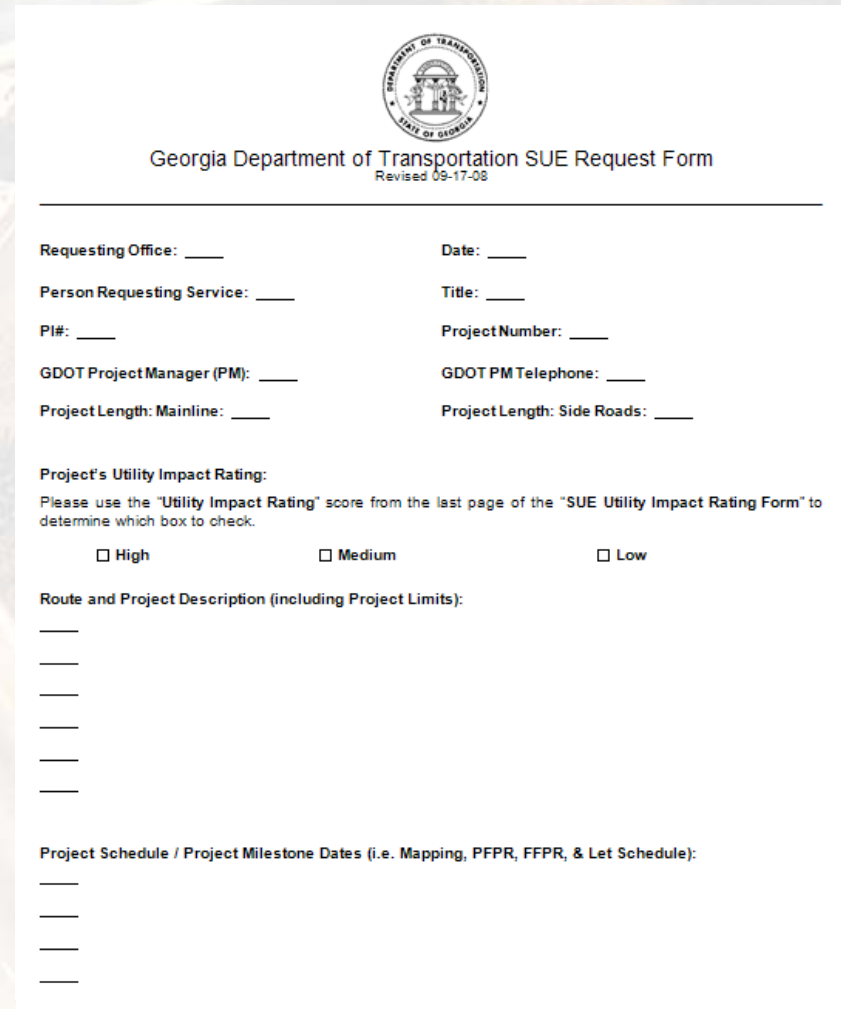
Submit this form together with the "SUE Request Form" to:

Jun Birnkammer, EIT
State Subsurface Utilities Engineer
Georgia Department of Transportation
One Georgia Center, 10th Floor
600 West Peachtree Street
Atlanta, GA 30308
jbirnkammer@dot.ga.gov


7. Do you f
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How to Request SUE Services (cont'd)

- Step 2:
 - Go to GDOT's Office of Utilities website
 - Click on Subsurface Utility Engineering (SUE) Link
 - Open the SUE Project Request Form
 - Fill out Page 1



The image shows a form titled "Georgia Department of Transportation SUE Request Form" with a revision date of "Revised 09-17-08". The form includes fields for "Requesting Office", "Date", "Person Requesting Service", "Title", "PI#", "Project Number", "GDOT Project Manager (PM)", "GDOT PM Telephone", "Project Length: Mainline", and "Project Length: Side Roads". It also has a section for "Project's Utility Impact Rating" with checkboxes for "High", "Medium", and "Low". Below this is a section for "Route and Project Description (including Project Limits)" with several blank lines for text entry. The final section is "Project Schedule / Project Milestone Dates (i.e. Mapping, PFPR, FFPR, & Let Schedule)" with four blank lines for text entry.


Georgia Department of Transportation SUE Request Form
Revised 09-17-08

Requesting Office: ____ Date: ____
Person Requesting Service: ____ Title: ____
PI#: ____ Project Number: ____
GDOT Project Manager (PM): ____ GDOT PM Telephone: ____
Project Length: Mainline: ____ Project Length: Side Roads: ____

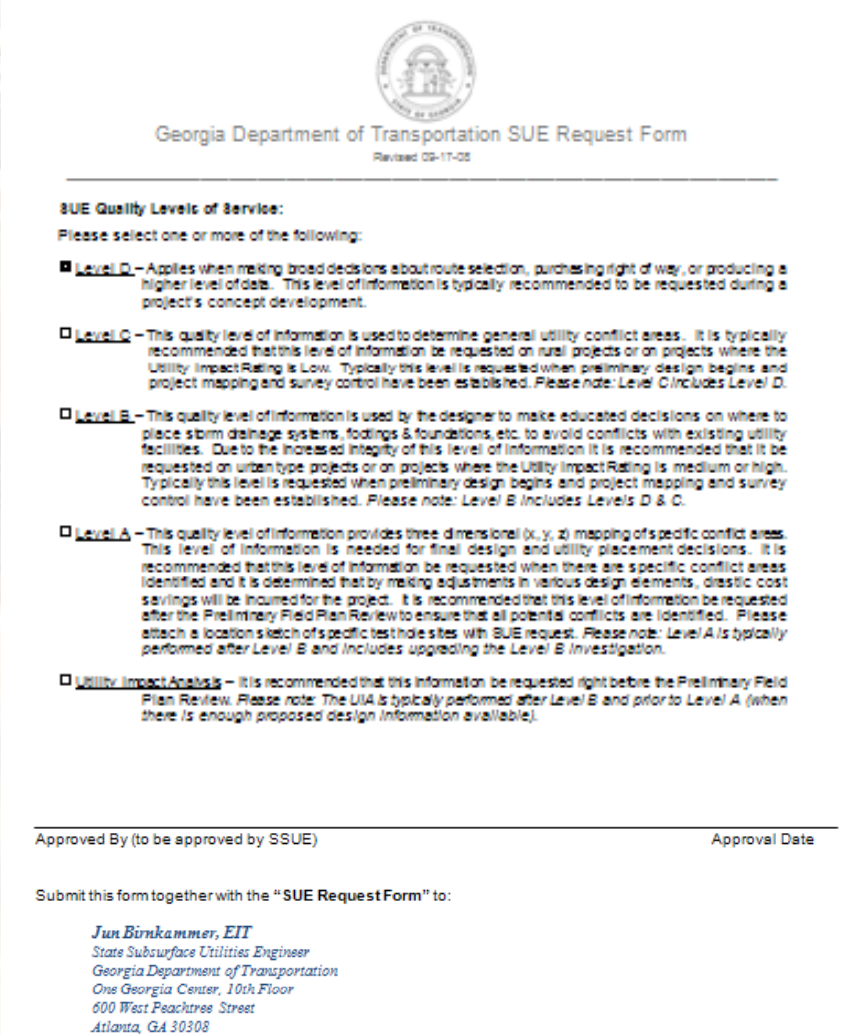
Project's Utility Impact Rating:
Please use the "Utility Impact Rating" score from the last page of the "SUE Utility Impact Rating Form" to determine which box to check.
 High Medium Low

Route and Project Description (including Project Limits):


Project Schedule / Project Milestone Dates (i.e. Mapping, PFPR, FFPR, & Let Schedule):

How to Request SUE Services (cont'd)

- Step 2 cont'd:
 - Check Level of SUE by:
 - Utility Impact Rating
 - Phase of Project Development
 - Fill out rest of Form
 - Save the SUE Project Request Form



The image shows a document titled "Georgia Department of Transportation SUE Request Form" with a revision date of "Revised 09-17-05". It features the state seal of Georgia at the top. The document outlines "SUE Quality Levels of Service" and provides instructions for selecting one or more levels. The levels are: Level D (broad decisions), Level C (general utility conflict areas), Level B (educated decisions on utility facilities), Level A (three-dimensional mapping for final design), and Utility Impact Analysis (performed before final design). At the bottom, there are fields for "Approved By" and "Approval Date", and contact information for Jun Birnkammer, EIT, at the Georgia Department of Transportation.


Georgia Department of Transportation SUE Request Form
Revised 09-17-05

SUE Quality Levels of Service:
Please select one or more of the following:

- Level D** – Applies when making broad decisions about route selection, purchasing right of way, or producing a higher level of data. This level of information is typically recommended to be requested during a project's concept development.
- Level C** – This quality level of information is used to determine general utility conflict areas. It is typically recommended that this level of information be requested on rural projects or on projects where the Utility Impact Rating is Low. Typically this level is requested when preliminary design begins and project mapping and survey control have been established. Please note: Level C includes Level D.
- Level B** – This quality level of information is used by the designer to make educated decisions on where to place storm drainage systems, footings & foundations, etc. to avoid conflicts with existing utility facilities. Due to the increased integrity of this level of information it is recommended that it be requested on urban type projects or on projects where the Utility Impact Rating is medium or high. Typically this level is requested when preliminary design begins and project mapping and survey control have been established. Please note: Level B includes Levels D & C.
- Level A** – This quality level of information provides three dimensional (x, y, z) mapping of specific conflict areas. This level of information is needed for final design and utility placement decisions. It is recommended that this level of information be requested when there are specific conflict areas identified and it is determined that by making adjustments in various design elements, drastic cost savings will be incurred for the project. It is recommended that this level of information be requested after the Preliminary Field Plan Review to ensure that all potential conflicts are identified. Please attach a location sketch of specific test hole sites with SUE request. Please note: Level A is typically performed after Level B and includes upgrading the Level B investigation.
- Utility Impact Analysis** – It is recommended that this information be requested right before the Preliminary Field Plan Review. Please note: The UIA is typically performed after Level B and prior to Level A (when there is enough proposed design information available).

Approved By (to be approved by SSUE) _____ Approval Date _____

Submit this form together with the "SUE Request Form" to:

Jun Birnkammer, EIT
State Subsurface Utilities Engineer
Georgia Department of Transportation
One Georgia Center, 10th Floor
600 West Peachtree Street
Atlanta, GA 30308

How to Request SUE Services (cont'd)

- Step 3:
 - Submit both forms to:
 - State Subsurface Utility Engineer
 - Expect Approval Decision within 2 weeks



Quiz Question:

When in a Project's Development can SUE services be requested?

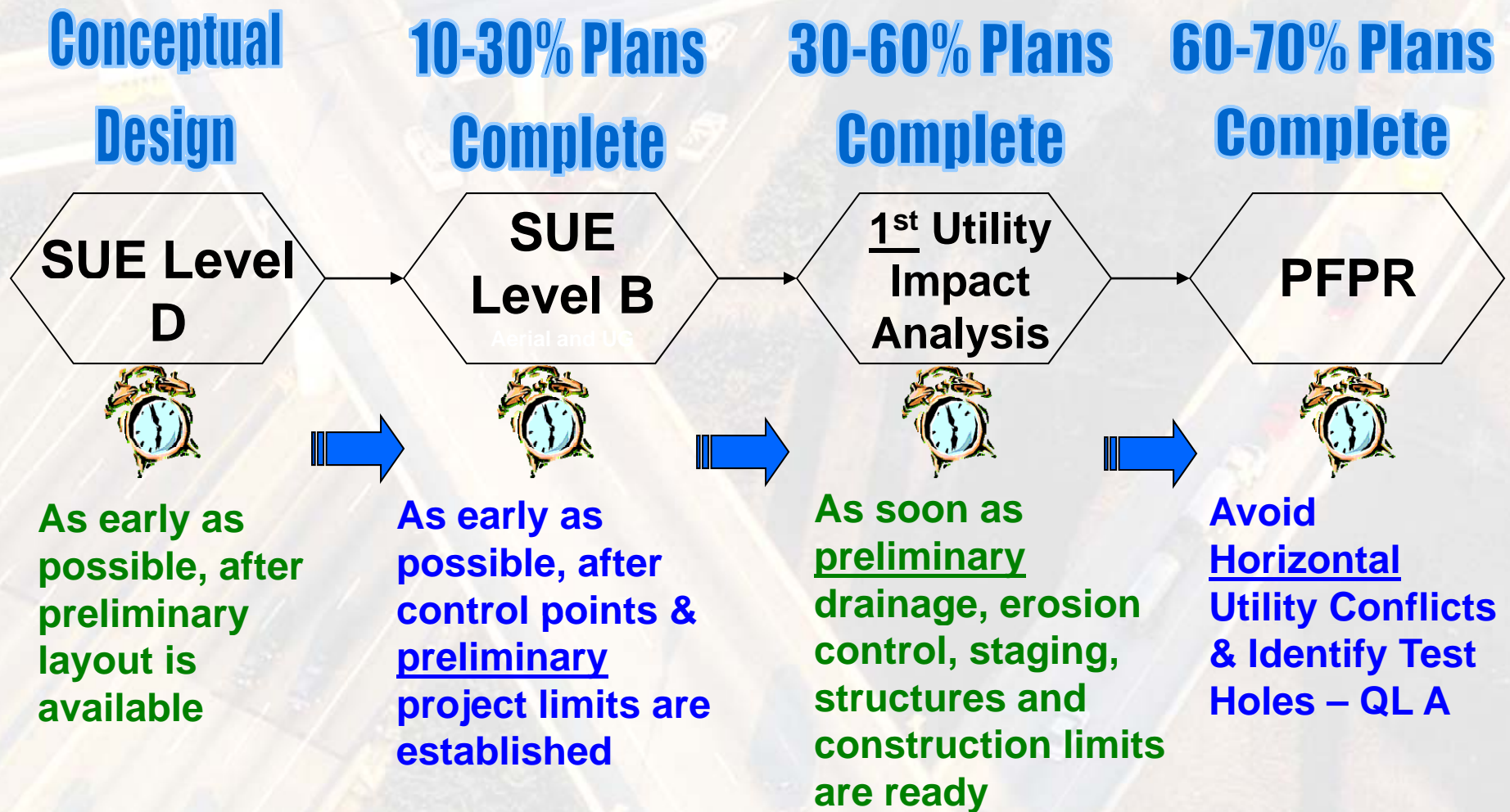
- A. As Soon as Project Enters the CWP.**
- B. During Concept Development.**
- C. During Preliminary Design.**
- D. During Final Design.**
- E. During Construction.**
- F. All of the Above.**

Quiz Question:

When is the optimum time to request SUE services to minimize all Utility Impacts?

- A. As Soon as Project Enters the CWP.**
- B. During Concept Development.**
- C. During Preliminary Design.**
- D. During Final Design.**
- E. During Construction.**
- F. All of the Above.**

OPTIMUM PROJECT DEVELOPMENT TO AVOID UTILITY IMPACTS



OPTIMUM PROJECT DEVELOPMENT TO AVOID UTILITY IMPACTS

60-70% Plans Complete

70% Plans Complete

70-90% Plans Complete

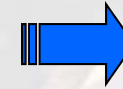
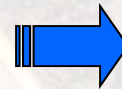
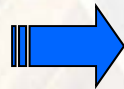
90-100% Plans Complete

SUE Level A

Utility Relocations

2nd Utility Impact Analysis

FFPR & Final Plans



After PFPR-
"Enhance"
Preliminary
Design to
Resolve
Vertical Utility
Conflicts.

Send Plans to
Utilities as Soon
as Design is
"Enhanced" to
Avoid Utility
Conflicts.

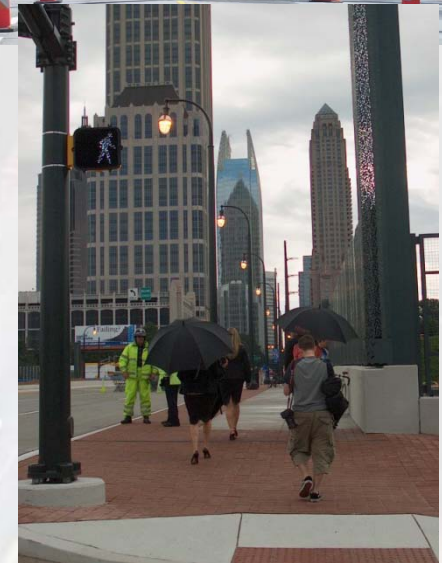
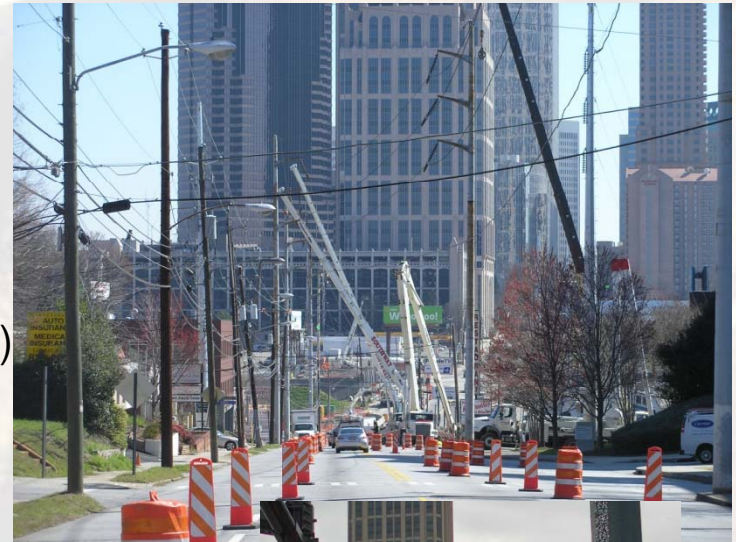
Incorporate Utility
Relocations into
Plans & Resolve
New/Remaining
Conflicts.

Finalize Design
& Resolve
New/Remaining
Utility Conflicts

Conflict Resolution Task Summary

- **Utility Coordination**
- **Modify Project Design**
- **Prepare Conflict matrix**
 - Introduced after 2005
 - Used whenever QL-B SUE is provided
 - After QL-B and prior to FFPR (ideally before PFPR)
- **Introduce Design Alternatives**
- **Identify Required Utility Relocations**
- **Utility Relocation Plans complete**
 - (Prior to FFPR)
- **Final Utility plans to PM**
3 months prior to FFPR

Iterative Process (pending design progression)



Conflict Matrix

Conflict	Station and Offset	Utility	Identified Conflict	Testhole Needed	Utility Impact with Cost ("As-designed")	Recommended Resolution	*Benefit of Resolution
C1	100+05, 21'L 14th St Constr. BL	AGL-BFO	Proposed storm structure and existing BFO	No	Relocate 1150LF of BFO-DUCT (\$91,000)	Relocate proposed storm drainage into street. Use DI's that drain toward roadway.	Save Cost to Relocate BFO-DUCT (\$91,000)
C2	100+66, 21'L 14th St Constr. BL	AGL-BFO	Proposed storm structure and existing BFO	No	See C1		
C3	100+38, 24'R 14th St Constr. BL	UNK@Tee	Proposed 18" storm and unknown utility tee	TH 1	Relocate unknown type and function utility	TH to identify utility and conflict	Eliminate possible delay during construction
C4	100+56, 25'R 14th St Constr. BL	8"W	Proposed 18" storm and existing 8"W	TH 2	Relocate 8"W (\$7,500)	TH on 8"W, adjust depth of proposed storm drainage	Save Cost to Relocate 8"W (\$6,000)
C5	100+61, 25R 14th St Constr. BL	8"W	Proposed 18" storm and existing 8"W	TH 3	Relocate 8"W (\$7,500)	TH on 8"W, adjust depth of proposed storm drainage	Save Cost to Relocate 8"W (\$6,000)
C6	100+82, 28R 14th St Constr. BL	4"G	Proposed storm structure and existing 4"G	TH 4	Relocate 20 LF of 4"G (\$6,000)	TH on 4"G, adjust depth of proposed storm structure	Save Cost to Relocate 4"G (\$4,500)
C7	101+22 27'R 14th St Constr. BL	4"G	Proposed 18" storm and existing 4"x2" gas tee	TH 5	Relocate 2"G & 4"G Tee (\$12,500)	TH on G lines, adjust depth of proposed storm structure	Save Cost to Relocate G lines (\$11,000)
C8	101+01 28'L 14th St Constr. BL	16"G	Proposed 18" storm and existing 16"G	TH 6	Relocate 16"G (\$10,000)	TH on 16"G, adjust depth of proposed storm structure	Save Cost to Relocate 16"G (\$8,500)
C9	101+25 41'L 14th St Constr. BL	BT-DUCT 2"G	Proposed storm structure and two BT-ducts	TH 7	Relocate BT-DUCT & 2"G (\$11,000)	TH on BT-DUCT & 2"G, adjust depth of proposed storm structure	Save Cost to Relocate BT-DUCT & 2"G (\$10,500)
C10	101+37, 41'L 14th St Constr. BL	6"W	Proposed 18" storm and existing 6"W	TH 8	Relocate 6"W (\$5,000)	TH on 6"W, adjust depth of proposed storm drainage	Save Cost to Relocate 6"W (\$3,500)
C11	101+57, 27'L 14th St Constr. BL	16"G	Proposed 18" storm and existing 16"G	TH 9	Relocate 16"G (\$10,000)	TH on 16"G, adjust depth of proposed storm structure	Save Cost to Relocate 16"G (\$8,500)
C12	101+58, 22'L 14th St Constr. BL	AGL-BFO	Proposed storm structure and existing BFO	No	See C1		
C13	101+90, 22'L 14th St Constr. BL	AGL-BFO	Proposed storm structure and existing BFO	No	See C1		
C14	102+20, 27'R 14th St Constr. BL	4"G	Proposed storm structure and existing 4"G	No	Relocate 4"G (\$4,500)	Relocate 4"G	Eliminate conflict with proposed DI
C15	102+36, 24'L 14th St Constr. BL	AGL-BFO	Proposed storm structure and existing BFO	No	See C1		

*Please include all benefits incurred including time, costs, and safety improvements.

Key:

AC - Asbestos Concrete
 BE - Buried Electric
 BFO - Buried Fiber Optic
 BT - Buried Telephone
 G - Gas
 L - Left
 MES - Mitered End Section
 OE - Overhead Electric

OT - Overhead Telephone
 R - Right
 RCP - Reinforce Concrete Pipe
 W - Water
 WM - Water Main
 TH - Test Hole, verify vert. and horiz
 UNK - Unknown Type
 SAN - Sanitary Sewer

Utility Owner:

AGL Atlanta Gas Light
 BE Georgia Power
 BT Bell South
 L3 Level 3 Communications
 MFN Metromedia Fiber Network
 SAN Fulton County Public Works
 W City of Atlanta
 UNK Unknown Owner

RESULTS!

- **OPTIMUM PROJECT DEVELOPMENT:**

- Peachtree Road Corridor - A Case Study

- Project Length (miles): 0.42
- No. of Utility Owners: 10
- Underground Utilities (LF): 48,000
- No. of Test holes: 61

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- Costs: \$110,500.00
 - Savings: \$2,731,900.00
 - Savings/Cost: \$24.7 / \$1

