



Utility Committee Meeting

AGENDA

March 7, 2017

I. CALL TO ORDER

II. MATTERS BEFORE COMMITTEE

1. [Approval - Storm Drain Rehab](#)
2. [Approval - Cherry Picker Yearly Maintenance Agreement](#)
3. [Approval - Underground Wiring Policy Amendment](#)
4. [Approval - Out of State Travel for Electric](#)
5. [Approval - Out of State Travel for Telecom](#)

III. ADJOURN



Utility Committee Meeting

AGENDA

March 7, 2017

Item:

Approval - Storm Drain Rehab

Department:

Additional Information:

Financial Impact:

Budgeted Item:

Recommendation / Request:

Viewing Attachments Requires Adobe Acrobat. [Click here](#) to download.

Attachments / click to download

 [Storm Drain Rehab](#)



To: City Council, Committee, City Administrator
From: Rodney Middlebrooks, Director of Water & Gas
Department: Stormwater
Date: 3/2/2017
Description: Discussion/Approval - Rehab of 24" storm drain @ 416 McDaniel St.

Budget Account/Project Name: 520-527-04320-00522-522460

Funding Source: 2017 Budget Expense (R&M System Inside)

Budget Allocation: \$31,000.00

Budget Available: \$15,522.00

Requested Expense: \$15,478.00

Company of Purchase: Southeast Pipe Survey

Recommendation:

Staff recommends the APPROVAL of this request based on the information provided for the rehab of the 24' storm drain @ 416 McDaniel Street. Bids were sought per policy.

Background:

This request is to line 120' of 24" CMP storm drain at 416 McDaniel Street. The drain at this location has deteriorated to the point that would warrant replacement/rehabilitation.

Attachment(s):

Request – 1 page

Quotation – 3 pages



3523 Williams Street, Patterson, GA 31557-0477
 Telephone: 800-343-6140
 www.southeastpipe.com

Date: 02/24/17

Quote #: Q170027

Quote To: Bill Braswell
 City of Monroe
 215 N. Broad St.
 Monroe, GA 30655
 Office: (770) 267-7536 C: 770-294-0915

Job Name

*Clean, CCTV & Line 24" CMP Storm Drain
 416 McDaniel St.*

Item	Description	Qty	UOM	Unit Price	Amount
10	Mobilization	1	LS	\$3,300.00	\$3,300.00
20	Clean & CCTV Prior to Installation	120'	LF	\$3.75	\$450.00
30	CIPP 24" CMP @ 8.5 mm	120'	LF	\$98.10	\$11,772.00
Grand Total:					\$15,522.00

Scope of Work:

Southeast Pipe Survey, Inc. will furnish all equipment and labors to Mobilize, Clean, CCTV and line 24" CMP with CIPP liner at 8.5mm in thickness only as listed above.

In the event that we should encounter unforeseen conditions such as broken pipe, holes in the pipe, offset joints, etc. that may cause our equipment (cleaning nozzles) to become lodged, you will be invoiced at cost plus 10% for recovery and site restoration to pre-existing conditions. (See attached Executive Summary).

*SEP charges for Stand-by time: the hourly rate @ \$500.00 per hour applies if crew cannot perform work due to delays caused by others or for circumstances beyond our control.

Owner to Provide:

- Any and All permits.
- Access to all work sites
- Water access for cleaning
- All site restorations
- Dewatering, Pumping & Any Bypassing Needs.
- Dumping location for debris, dirt from storm drain cleanout.

EXCLUSIONS:

- Any and All Dewatering, Pumping & Bypassing.
- Point repairs

Note:

Payment terms – 10 days after receipt of invoice. SPS will not be subject to retainage. Our invoices are to be paid in full. This proposal may be withdrawn by SPS if not accepted within (30) days.

All materials are guaranteed to be as specified. All work to be completed in a workmanlike manner according to standard practices. Any alteration or deviation from specifications involving extra costs will be executed only upon written orders, and will become an extra charge over and above the estimate.

Item # 1



3523 Williams Street, Patterson, GA 31557-0477
Telephone: 800-343-6140
www.southeastpipe.com
Quote #: Q170027

Southeast Pipe Survey, Inc. appreciates the opportunity to quote this project. If you have any questions feel free to call Darryl Allgood at 912-647-2847, ext. 230 or Ray Douberly at 912-647-2847, ext. 233.

Acceptance of Proposal - The above prices, specifications, and conditions are satisfactory and are hereby accepted. You are authorized to perform the work specified.

Date of Acceptance _____ Authorized Signature _____

Please email signed quote to jrountree@southeastpipe.com or fax to 912-647-2869

**** Please note: If this project will be federally funded all information must be provided before work proceeds***

Quote #17014



UV CIPP
PIPE BURSTING
CCTV INSPECTION
MANHOLE REHAB
OPENCUT
POINT REPAIRS

PO BOX 38
404 BILLY JACOBS RD
HOBOKEN GA 31542
912-458-3747 OFFICE
912-458-3081 FAX

FOR ALL YOUR WATER, STORM WATER, & SANITARY SEWER NEEDS

Date: 1-23-17
To: City of Monroe Ga
Attn: Bill Braswell
RE: 24" Storm CIPP

Scope of Work: CaJenn Construction & Rehab Services to provide all labor, equipment, and materials to perform 125lf of 24" CMP Storm Sewer UV- CIPP as per the below description

Mobilization: \$2500.00LS
24" CMP – 125lf: \$165.00/LF

Others to provide:

All permits/Right of Entry to property
Water Meter for cleaning lines

Does not include Major Traffic Control (anything more than standard Flaggers)

Note:

- Payment terms – Due upon completion and approved inspections. CaJenn will NOT be subject to retainage. Our invoices are to be paid in full. This proposal may be withdrawn by CaJenn if not accepted within (30) days.
- All materials are guaranteed to be as specified. All work to be completed in a workman like manner according to standard practices. Any alteration or deviation from specifications involving extra costs will be executed only upon written orders, and will become an extra charge over and above the estimate.
- CaJenn Construction & Rehab Services appreciates the opportunity to quote this project. Acceptance of Proposal - The above prices, specifications, and conditions are satisfactory and are hereby accepted. You are authorized to perform the work specified.
- Date of Acceptance _____ Authorized Signature _____

Please email the signed quote to Billy@CaJenn.com or fax to 912-458-3081

*Note: If this project is Federally Funded, all information must be provided to CaJenn Construction & Rehab Services before work proceeds.

If you have any questions, feel free to contact:

Billy Jennings, Project Manager

CaJenn Construction & Rehab Services
Billy@CaJenn.com 912-550-5163 cell 912-458-3747 office

Initial Page _____

Item # 1



February 22, 2017

Bill Braswell
City of Monroe GA
770-294-0915

Re: CIPP 24" Corrugated Metal Storm Drain

Mr. Braswell,

I would like to thank you for giving Lining & Coating Solutions the opportunity to quote the above project. Please review and make sure it meets your specifications.

Lining & Coating Solutions proposes to line 120 feet of 24" corrugated storm drain. Liner will be a 9 Mil thickness utilizing polyester resins. The liner will be steam cured and we will perform a pre-work and post work video for your files. Price includes labor, materials, televising, removal & replacement of junction box lid, and lining equipment. Quote is valid for 60 days from today's date. Total price for this proposal is **\$27,029.00**

Exclusions:

1. Water access
2. High pressure Jett cleaning

Note: Material is specific for each job and once order has been placed it cannot be cancelled or returned. Main line material must be refrigerated until installed. If job is delayed for any reason there will be an extra charge for keeping material refrigerated. If job is delayed for longer than a 2 month period material will have to be reordered.

After Lining & Coating Solutions has arrived on job site and there is any type of delay due to receiving approval for extra's not covered under original contract price. Down time will be billed at time and material rate while waiting approval.

If you have any questions concerning this proposal, please contact Andrew Dietsch 727-422-1081.

Lining & Coating Solutions, LLC

I agree and accept the above terms.

Signature & Title

Date



Utility Committee Meeting

AGENDA

March 7, 2017

Item:

Approval - Cherry Picker Yearly Maintenance Agreement

Department:

Additional Information:

Financial Impact:

Budgeted Item:

Recommendation / Request:

Viewing Attachments Requires Adobe Acrobat. [Click here](#) to download.

Attachments / click to download

 [Cherry Picker Info](#)



To: City Council, Committee, City Administrator

From: Brian Thompson

Department: Telecom

Date: 3/1/13

Description: Approval is being sought for the purchase of the yearly maintenance agreement for oldest Cherry Picker(CAP1000). This CAP1000 is one of two that grooms and prepares all TV signals for broadcast. Last year one of the CAPs failed and it was replaced under this agreement. It is a sole source bid and an email from ARRIS is attached explaining why that is the case.

Budget Account/Project Name: Redundancy Project

Funding Source: 2017 Telecom CIP

Budget Allocation:	\$100,000.00	
Budget Available:	\$84,792.96	
Requested Expense:	\$12,155.00	Company of Purchase: AMT

Recommendation:

Staff recommends the APPROVAL of this request based on the information provided for the purchase of the maintenance agreement.

Background:

This CAP1000 the older of two CAPs that groom and prepare all TV signals for broadcast. Last year one of the CAPs failed and it was replaced under this agreement. It is a sole source bid and an email from ARRIS(manufacture) is attached explaining why that is the case.

Attachment(s):

Request – 1 page
Quotation – 1 page

Item # 2



Advanced Media Technologies, Inc.
3150 SW 15th Street
Deerfield Beach, FL 33442

Phone: 954-427-5711
Fax: 954-427-9688
Toll Free: 888-293-5856

Bill To:
City of Monroe
CONNIE DAVIS
PO Box 1249
Monroe, GA 30655
USA

Ship To:
City of Monroe
PO Box 1249
Monroe, GA 30655
USA

QUOTE

Page 1 Attachment number 1 \nPage

QUOTE NUMBER: SQ0118254
DATE: 02/12/17

SALESPERSON: Scott Shreve
CUSTOMER NO: CUST002537

CUSTOMER P.O.		SHIP VIA	SHIPMENT METHOD	TERMS	
			FOB-SP	NET DUE 30 DAYS	
			SHIPPING POINT		
QUANTITY	ITEM NUMBER	DESCRIPTION	UNIT PRICE	AMOUNT	
			USD		
1	803419	CHERRY PICKER SLA NO ACE COVERAGE HARDWARE: NO HARDWARE REPAIR SOFTWARE: ACCESS TO ALL UPDATES TO CUSTOMER-OWNED SOFTWARE TECHNICAL SUPPORT: 24X7X365 TAC/TRC SUPPORT WEB ACCESS TO ONLINE DOCUMENTATION AND SUPPORT BASIS	7,735.00	7,735.00	
1	803421	CHERRY PICKER SLA ACE COVERAGE HARDWARE: ADVANCED COMPONENT EXCHANGE (ACE) - NEXT BUSINESS DAY SHIPMENT OF REPLACEMENT UNIT SOLD SEPARATELY, MUST ORDER 803419 FOR TECHNICAL SUPPORT AND SW UPDATES / UPGRADES	4,420.00	4,420.00	

The coverage term for the above Cherry Picker
SLA renewal is 12/1/2016 - 11/30/2017



Advanced Media Technologies, Inc.
3150 SW 15th Street
Deerfield Beach, FL 33442

Phone: 954-427-5711
Fax: 954-427-9688
Toll Free: 888-293-5856

Bill To:
City of Monroe
CONNIE DAVIS
PO Box 1249
Monroe, GA 30655
USA

Ship To:
City of Monroe
PO Box 1249
Monroe, GA 30655
USA

QUOTE

Page 2 Attachment number 1 \nPage

QUOTE NUMBER: SQ0118254
DATE: 02/12/17

SALESPERSON: Scott Shreve
CUSTOMER NO: CUST002537

CUSTOMER P.O.		SHIP VIA	SHIPMENT METHOD	TERMS	
			FOB-SP SHIPPING POINT	NET DUE 30 DAYS	
QUANTITY	ITEM NUMBER	DESCRIPTION		UNIT PRICE USD	AMOUNT
Total USD					12,155.00

Quote Valid for 30 Days from Above Date
AMT Standard Terms and Conditions apply
Special Order Items are Non Returnable
Sales Tax or Use Tax May Apply

All Shipments will be insured, unless otherwise specified by customer.

Unless otherwise specified, the above quote does not include shipping charges, which will be the full responsibility of the customer.
Please Visit us at www.amt.com

Item # 2

From: Gay, Bruce <Bruce.Gay@arris.com>
Sent: Wednesday, February 15, 2017 1:56 PM
To: Todd Leachmon
Subject: ARRIS and AMT

Todd:

I understand you recently contacted our TAC requesting information for a support quote. AMT is an authorized reseller of ARRIS support services. ARRIS does not bid against our resellers for support services. AMT quotes support using ARRIS list prices so the SLA pricing would be the same.

Regards,

BRUCE GAY
Sr Manager, Services
ARRIS

[2017 Guide to ARRIS Global Services.](#)

o: +1 215-323-1222
c: +1 215-519-0222
e: bruce.gay@arris.com
w: www.arris.com

Follow our blog: www.arriseverywhere.com

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Utility Committee Meeting

AGENDA

March 7, 2017

Item:

Approval - Underground Wiring Policy Amendment

Department:

Additional Information:

Financial Impact:

Budgeted Item:

Recommendation / Request:

Viewing Attachments Requires Adobe Acrobat. [Click here](#) to download.

Attachments / click to download

 [Underground Wiring Policy Info](#)



To: City Council, Committee, City Administrator

From: Brian Thompson

Department: Electric

Date: 3/2/17

Description: Addition of Residential Underground Service Policy for Electric and Telecom and changes to the Underground Wiring Policy for Subdivisions, Town Homes, and Apartments, and Electric Rate Schedule.

Budget Account/Project Name:

Funding Source:

Budget Allocation: \$0

Budget Available: \$0

Requested Expense: \$0 **Company of Purchase:** N/A

Recommendation:

Staff recommends the APPROVAL of this change.

Background:

This policy would create a policy that would require builders/developers to install conduit from the service location (Elec & Telecom) to the ROW from each home. This will help cut down confusion and timing problems when a home is getting ready to close and will also stop damage to a customers yard if the wire is ever damaged. The changes to the Underground Wiring Policy were made to reflect the addition of this policy.

Attachment(s):

Request – 8 page

Quotation –

CITY OF MONROE
UNDERGROUND WIRING POLICY FOR
SUBDIVISIONS, TOWN HOMES AND APARTMENTS
(Updated August 29, 2006)

A non-refundable Electrical Design Fee will be paid upon first submittal of engineered plans.

ELECTRICAL DESIGN FEE SCHEDULE:

Residential Subdivision (1-50 Lots): \$1000*
 Residential Subdivision (51-100 Lots): \$1500*
 Residential Subdivision (over 100 Lots): \$2000*
 All Commercial Development: \$2500*
 Customer Choice Loads Exempt

*Any changes made to the original design will be on a per hour rate of \$50

The City of Monroe's Underground Wiring Policy for Subdivisions, Town Homes, and Apartments is as follows:

1. Underground primary, secondary, transformers, and connections will be installed by the owner, using one of the electrical contractors as shown on the list provided by the City of Monroe.
2. Work will be done using the City of Monroe's Specification Book, the City of Monroe's engineering drawings, and will be inspected by the City of Monroe's Electrical Department.
3. Electrical contractor shall obey all national, state, local, and city rules for working with, and in the proximity of energized lines. This includes all OSHA, NESC, IEEE, Electrical Cities, and the City of Monroe's operating requirements.
4. The City of Monroe will perform the final tap to its primary when all installation has been completed.
5. All primary and secondary shall be placed in pipe when crossing roads and whenever rocky conditions are present.
6. All connections shall be done using manufacturer's recommendation.
7. Owner is responsible for work and material for one year before the City of Monroe takes it over.
8. Any changes in engineering drawings must be approved by the City of Monroe.
9. Temporary services shall be furnished by the owner and will be inspected by the City of Monroe's Electrical Department.
10. Owner shall provide the City of Monroe with right-of-way or public utility easements.
11. The electrical contractor shall provide all labor, equipment, supplies, and supervision necessary to complete the work, using the City of Monroe's engineering drawings.

12. Electrical contractor shall be responsible for all locates and permits before starting and keep updated during the course of the job.
13. Electrical contractor shall be insured and bonded, and shall furnish the City of Monroe with copies of the necessary documents.
14. Owner shall submit a proposed street light plan to the City of Monroe for its approval prior to installation. Owner will also be responsible for work and material related to the street lights for one year before the City of Monroe takes it over.
15. Final inspection on meter base is done by the City of Monroe's Code Department before energizing to structure.
16. Owner will be given a detailed material list from the City of Monroe and the owner will be responsible for purchasing all material.

Electrical Drawings

1. A Site and Utility Plan will be submitted electronically in a DWG (AutoCAD) format before any electrical design takes place.
2. Detailed notes and drawings of the following will be kept by the developer or contractor during the electrical construction process **for each lot**:
 - A.) Depth of wire (primary and secondary)
 - B.) Footages of primary wire from the edge of the curb
 - C.) Footages from transformer to house meter base
 - D.) Measurements on any street crossings
3. Construction notes and drawings do not have to be electronic but must be clear, clean, and legible.
4. Construction notes and drawings will be submitted in a notebook (three-ring binder) with subdivision name, address, and contact number on the front of the notebook.
5. All construction notes and drawings will be submitted to the City of Monroe's Electrical Department for approval before final tap is made.

CITY OF MONROE
UNDERGROUND WIRING POLICY FOR SINGLE FAMILY HOMES,
SUBDIVISIONS, TOWN HOMES AND APARTMENTS

A non-refundable Electrical Design Fee will be paid upon first submittal of engineered plans.

ELECTRICAL DESIGN FEE SCHEDULE:

Single Family Home: \$0

Residential Subdivision (1-50 Lots): \$1000*

Residential Subdivision (51-100 Lots): \$1500*

Residential Subdivision (over 100 Lots): \$2000*

All Commercial Development: \$2500*

Customer Choice Loads Exempt

*Any changes made to the original design will be on a per hour rate of \$125.00

The City of Monroe's Underground Wiring Policy for Subdivisions, Town Homes, and Apartments is as follows:

1. Underground primary, secondary, transformers, and connections will be installed by the owner, using one of the electrical contractors as shown on the list provided by the City of Monroe.
2. Work will be done using the City of Monroe's Specification Book, the City of Monroe's engineering drawings, and will be inspected by the City of Monroe's Electrical Department.
3. Electrical contractor shall obey all national, state, local, and city rules for working with, and in the proximity of energized lines. This includes all OSHA, NESC, IEEE, Electrical Cities, and the City of Monroe's operating requirements.
4. The City of Monroe will perform the final tap to its primary when all installation has been completed.
5. All primary and secondary shall be placed in conduit per design specifications and in accordance with the Residential Underground Service Policy for Electrical and Telecommunications.
6. All connections shall be done using manufacturer's recommendation.
7. Owner is responsible for work and material for one year before the City of Monroe takes it over.
8. Any changes in engineering drawings must be approved by the City of Monroe.
9. Temporary services shall be furnished by the owner and will be inspected by the City of Monroe's Electrical Department.
10. Owner shall provide the City of Monroe with right-of-way or public utility easements.

11. The electrical contractor shall provide all labor, equipment, supplies, and supervision necessary to complete the work, using the City of Monroe's engineering drawings.
12. Electrical contractor shall be responsible for all locates and permits before starting and keep updated during the course of the job.
13. Electrical contractor shall be insured and bonded, and shall furnish the City of Monroe with copies of the necessary documents.
14. Owner shall submit a proposed street light plan to the City of Monroe for its approval prior to installation. Owner will also be responsible for work and material related to the street lights for one year before the City of Monroe takes it over.
15. Final inspection on meter base is done by the City of Monroe's Code Department before energizing to structure.
16. A detailed material list for the project will be provided and bid by the City of Monroe and the owner will be responsible for providing payment for all material.

Electrical Drawings

1. A Site and Utility Plan will be submitted electronically in a DWG (AutoCAD) format before any electrical design takes place.
2. Detailed notes and drawings of the following will be kept by the developer or contractor during the electrical construction process **for each lot**:
 - A.) Depth of wire (primary and secondary)
 - B.) Footages of primary wire from the edge of the curb
 - C.) Footages from transformer to house meter base
 - D.) Measurements on any street crossings
3. Construction notes and drawings do not have to be electronic but must be clear, clean, and legible.
4. Construction notes and drawings will be submitted in a notebook (three-ring binder) with subdivision name, address, and contact number on the front of the notebook.
5. All construction notes and drawings will be submitted to the City of Monroe's Electrical Department for approval before final tap is made.



Residential Underground Service Policy for Electric and Telecommunications

1. All underground electric services must be in conduit. The conduit shall be UL listed electrical grade schedule 40 PVC with pull string. Water pipe is not acceptable. Conduit size shall be 2 inch for services up to 225 amps. For all other services a field engineer will specify the size and number of conduits.
2. The customer/contractor is required to furnish and install the service conduit. Final grade shall be established prior to the installation. The installed/final depth shall in no case be less than 24 inches to the top of the conduit.
3. Following receipt of application for new service, engineering staff shall meet with the customer/contractor on site to establish the route of the conduit and meter placement. Under no circumstances shall the customer install service conduit until engineering staff has approved conduit route.
4. Services under 125 feet shall have a maximum of 270 degrees of conduit bend and all 90 degree bends must have a 36 inch radius.
5. Services exceeding 125 feet must be installed in a straight line to the service point or have a service pedestal (supplied by Monroe). Engineering staff shall determine the location and quantity of service pedestals.

6. All telecommunication services must be in conduit. The conduit shall be UL listed electrical grade schedule 40 PVC with a pull string. Water pipe is not acceptable. Conduit size shall be 1 inch to provide space for multiple service providers.
7. The customer/contractor is required to furnish and install the service conduit. Final grade shall be established prior to the installation. The installed/final depth shall in no case be less than 12 inches to the top of the conduit.
8. Following receipt of application for new service, engineering staff shall meet with the customer/contractor on site to establish the route of the conduit and meter placement. Under no circumstances shall the customer install service conduit until engineering staff has approved conduit route. Telecommunication service conduits can travel the same ditch line as electrical conduit but must be separated by at least 6 inches of fill dirt.
9. Services under 125 feet shall have a maximum of 270 degrees of conduit bend and all 90 degree bends must have a 36 inch radius. For coax installations no service shall be over 200 feet.

ELECTRIC RATE SCHEDULES

MISC ELECTRIC FEES

- Temporary Power/Residential \$ 25.00
- Temporary Power/Commercial \$ 50.00
- Underground Power (Services of 100-225 amps, 150 feet or less) \$400.00/lot ¹
(Services of 225-400 amps, 150 feet or less) \$600.00/lot ²

¹ An additional \$2.50 per foot will be charged over 150 feet

² An additional \$3.50 per foot will be charged over 150 feet

\$ Contract Deposit varies per services at location.

ELECTRIC METER BASE FEES

- 677 X 50 \$26.85
20 AMP, 5 terminal round socket
with CCL device & 1" hub
- UC1290-WL \$62.06
20 AMP, 5 terminal meter socket
with C.C. device, 1" hub
- U7487-YLTG \$19.95
100 AMP, 4 terminal socket
with 13@ Hub
- UAS877-PG \$34.65
200 AMP URD Sidewired
Meter Socket

STEPS FOR PURCHASING ELECTRIC METER BASE:

1. Customer will see Purchasing Warehouse Manager to determine what Electric Meter Base they need.
2. Bring documentation from Purchasing Warehouse Manager to Customer Service for payment.
3. Customer Service will give the Customer a receipt.
4. Customer will be responsible for obtaining the Electric Meter Base from the Purchasing Warehouse.

ELECTRIC RATE SCHEDULES

MISC ELECTRIC FEES

- Temporary Power/Residential \$ 25.00
- Temporary Power/Commercial \$ 50.00
- **Underground Power \$ 300.00***

An additional \$3.50 per foot will be charged over 150 feet

\$ Contract Deposit varies per services at location.

ELECTRIC METER BASE FEES

- 677 X 50 \$26.85
20 AMP, 5 terminal round socket
with CCL device & 1" hub
- UC1290-WL \$62.06
20 AMP, 5 terminal meter socket
with C.C. device, 1" hub
- U7487-YLTG \$19.95
100 AMP, 4 terminal socket
with 13@ Hub
- UAS877-PG \$34.65
200 AMP URD Sidewired
Meter Socket

*STEPS FOR PURCHASING ELECTRIC METER BASE:

1. Customer will see Purchasing Warehouse Manager to determine what Electric Meter Base they need.
2. Bring documentation from Purchasing Warehouse Manager to Customer Service for payment.
3. Customer Service will give the Customer a receipt.
4. Customer will be responsible for obtaining the Electric Meter Base from the Purchasing Warehouse.



Utility Committee Meeting

AGENDA

March 7, 2017

Item:

Approval - Out of State Travel for Electric

Department:

Additional Information:

Financial Impact:

Budgeted Item:

Recommendation / Request:

Viewing Attachments Requires Adobe Acrobat. [Click here](#) to download.

Attachments / click to download

 [Electric Training Info](#)



To: City Council, Committee, City Administrator
From: Brian Thompson
Department: Electric
Date: 3/2/17
Description: Out of State travel for Electric Department

Budget Electric Training

Funding Source:

Budget Allocation:	\$15,000.00	
Budget Available:	\$14,850.00	
Requested Expense:	\$850.00	Company of Purchase: Southeastern Meter School

Recommendation:

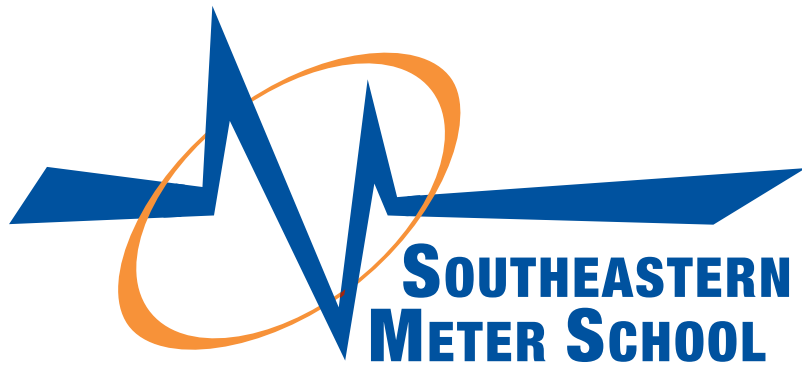
Staff recommends the APPROVAL of this training.

Background:

Southeastern Meter Technical Association is having a training class that includes training and certification on the same test equipment that we use.

Attachment(s):

Request – 1
 Quotation – 7



Southeastern Meter School & Conference

The Hotel at Auburn University
and Dixon Conference Center

Auburn, Alabama

March 20th - 23rd, 2017

Sponsored by the
Southeastern Meter Technical Association

In Cooperation with



Southeastern Meter School & Conference

General Information

The **2017 Southeastern Meter School and Conference** will be held **March 20th - 23rd** at the Hotel at Auburn University in Auburn, Alabama. The school is sponsored by the **Southeastern Meter Technical Association**. It is held in cooperation with **Utility Technology Association**.

The school provides a forum for electric utility meter personnel to **discuss metering practices, procedures, new technologies, and common problems with peers and representatives from industry**. The school is open to anyone interested and involved in these areas. This years' school will be another outstanding educational event. **Great training and hands on learning opportunities are provided in each of five modules.** The modules are tailored to instruct utility professionals at all levels of experience. **Attend any class from any module.** You pick the class of interest.

Day Participant Program

This provides an opportunity for management (general managers, purchasing agents, operation managers, engineers, etc.) to **attend one day for a reduced fee.** Come on any day and attend a few classes, then enjoy an evening of hospitality in the Exhibit Hall.

Professional Development Hours

Participants attending the entire school will be awarded 18 Professional Development hours.

Location

The **Hotel at Auburn University and Dixon Conference Center** is centrally located three miles from Interstate 85. The Hotel at Auburn University is situated in a charming university campus environment within easy walking distance to many shops and restaurants in the quaint, historical downtown **Auburn, Alabama**. Find out more about the hotel and location at **www.auhcc.com**.

Hotel Accommodations

A block of rooms has been reserved for attendees at the **Hotel at Auburn University**. Reservations can be made through the hotel by phone at **(800) 228-2876**.

Please make your reservations by March 6, 2017 to insure availability. **The special room rate is \$134.00 plus tax.** Be sure to **identify yourself as being with the Southeastern Meter School & Conference to get the group rate.** **Room rate will increase after March 6th.**

Directions

Atlanta to Auburn (110 miles)

Take I-85 South towards Montgomery. Take the Auburn exit (exit 51.)

Birmingham to Auburn (120 miles)

From Birmingham, take US Highway 280 East approximately 110 miles. Take a right onto Highway 147 and follow it 5 miles to Auburn.

Exhibit Hall

The Exhibit Hall will be open **Monday, March 20th through Wednesday, March 22nd**. All the suppliers you need to meet will be in one place to answer your questions and demonstrate their products. **Exhibitor Registration Information available on school website.**

Registration

The registration to the Southeastern Meter School & Conference can be sent by mail, fax or on-line. **Payment can be made with check, purchase order, or credit card.** Invoicing available upon request. **Credit Card payment is only accepted with on-line registration.**

Student Registration: \$395

Participant Fee includes Conference Notebook, Lunch on Tuesday and Wednesday, Dinner on Wednesday, Networking / Hospitality Breaks, and Admission to the Exhibit Hall.

One-Day Student Registration: \$195

One-Day Registration Fee includes conference notebook, one Lunch, Networking / Hospitality Breaks and Admission to the Exhibit Hall.

Pre-Registration By March 6th. Late and OnSite Registration are subject to an Additional Charge of \$50.

Mail

Southeastern Meter Technical Association
c/o Utility Technology Association
4711 Peachtree Industrial Blvd, Suite 100
Berkeley Lake, GA 30092

On-Line

www.semeterschool.com

Cancellation Policy

Refunds, less a \$50 administrative fee, will be made for all cancellations received in writing before March 6th, 2017. No refunds will be made after that date, but a substitution of attendees may be made by notifying the Southeastern Meter Technical Association prior to the conference.

Annual Dinner & Game Show

Registration includes a Wednesday evening dinner. After dinner enjoy an entertaining evening at the ***Southeastern Meter School Casino Royale***. Network with your peers while playing blackjack, craps, roulette, Texas hold'em poker or slot machines. Play money will be provided.

Modules to Choose From

Module 100: Fundamental Metering

Coordinators: Freddy Morgan, Tom Woods, Marietta Power; Mike Chirico, South Alabama Electric Cooperative

Module providing instruction in basic metering theory and application. This module will include topics of single and polyphase theory, instrument transformers, meter sockets, and meter form numbers.

Module 200: Advanced Metering

Coordinators: David Ramsey, John Winch, Cobb EMC; Ken Waddleton, Snapping Shoals EMC

Module on intermediate metering theory and polyphase meter installation. Topics include polyphase applications, reactive metering, troubleshooting with phasors, and pulse metering.

Module 300: Hands On Meter Testing & Safety

Coordinator: Mark Wellden, Rhonda Reis, Georgia Power Company

Module providing both lecture and laboratory experiences on all aspects of meter testing. Session will include hands on experience in testing everything from simple single phase, polyphase and demand to multifunction meters.

Module 400: Smart Grid, AMI and Emerging Technology

Coordinators: Jeremy Morgan, Fairhope Utilities; Michael Longmire, Humboldt Utilities

Module to learn about applications, trends and utilizing elements of Smart Grid, AMI and emerging technologies. Session will include AMI Technology, Cybersecurity, Data Mining, and Communications along with many other classes.

Module 500: Meter Programming

Coordinators: Nathan Madison, Jr., South Alabama Electric Cooperative; Tom Ellis, Electric Supply, Inc.

Module providing hands on of programming meters from the metering manufacturers. Laptops will be provided or bring your own.

Exhibit Hall: Coordinators: Chip Kanour, Utility Specialists, Inc.; Geri Turner, Tri-State Utility Products, Inc.; Randall Black, Habersham EMC

Contact Information

Utility Technology Association

Suzanne Powell

(770) 519-1676

suzanne@utilitytech.org



Southeastern Meter School & Conference Class Schedule

Monday, March 20th

Time	Module 100	Module 200	Module 300	Module 400	Module 500
10:00 - 1:00	Registration				
1:00 - 1:30	General Session				
1:30 - 2:30	"Technology Architecture Considerations for Smart Grid & Beyond" Kathy Shaffer, <i>OMNETRIC Group</i>				
2:30 - 3:00	Networking and Refreshment Break				
3:00 - 4:00	Meter Safety Combined Class				
4:00 - 5:30	Exhibit Hall / Hospitality				

Tuesday, March 21st

Time	Module 100	Module 200	Module 300	Module 400	Module 500
8:30 - 10:00	Math & Electrical Fundamentals	Power Theory	Grounding & Bonding Meter Sockets	Cyber-Terrorism Defense - Protecting Our Nations Critical Infrastructure	Meter Programming Aclara
10:00 - 10:30	Networking and Refreshment Break in Exhibit Hall				
10:30 - 12:00	Single Phase Metering Theory	Principles & Applications of Polyphase Metering	Fundamentals of Single & PolyPhase Field Meter Testing	US Army Central Metering Program	Meter Programming Aclara Continued
				Next Generation of Metering Technologies	
12:00 - 1:00	Lunch Provided				
1:00 - 2:00	Single Phase Meter Testing	Troubleshooting with Phasors	Hands On Self- Contained Single & PolyPhase Meter Testing	Pre-Pay Metering Utility Case Studies- Wiregrass Electric Cooperative & Georgia Power	Meter Programming Landis + Gyr
2:00 - 2:30	Networking and Refreshment Break in Exhibit Hall				
2:30 - 3:30	Service Types / Meter Forms	Pulse Metering	Hands On Transformer Rated Solid State PolyPhase Meter Testing	Leveraging AMI Data to Serve Customers: Reducing Costs Through Behavioral Change	Meter Programming Landis + Gyr Continued
3:30 - 5:00	Exhibit Hall / Hospitality				

Item # 4

Attend Any Class You Want

Southeastern Meter School & Conference Class Schedule

Wednesday, March 22nd

Time	Module 100	Module 200	Module 300	Module 400	Module 500
8:30 - 10:00	Polyphase Meter Theory	Alternative Energy Metering Advanced Meter System Design	Testing & Verification of Meter Installation Using Customer Load	Understanding Power Quality & Analysis Tools	Meter Programming Honeywell Elster
10:00 - 10:30	Networking and Refreshment Break in Exhibit Hall				
10:30 - 12:00	Instrument Transformer Fundamentals	Applications & Sizing of Instrument Transformers	Testing & Verification of Meter Installation Using Customer Load Continued	Impacts of Interconnected Solar on Utility Metering	Meter Programming Honeywell Elster Continued
12:00 - 1:00	Lunch Provided				
1:00 - 2:30	Distribution Transformer Connections	Reactive, KVA and 4 Quadrant Metering		Metering Communications	Meter Programming Itron
2:30 - 3:00	Networking and Refreshment Break				
3:00 - 4:00	Demand / Time of Use Metering	Applications of Multifunction Metering		Metering Communications Continued	Meter Programming Itron Continued
5:00 - 6:00	Annual Dinner in Ballroom A				
6:30 - 9:30	Casino Royale in Ballroom A				

Thursday, March 23rd

Time	Module 100	Module 200	Module 300	Module 400	Module 500
8:30 - 9:45	Residential Theft Combined Class				
9:45 - 10:15	Networking and Refreshment Break				
10:15 - 11:30	Commercial Theft Combined Class				
11:30 - 12:00	Closing Session				

Southeastern Meter School & Conference Curriculum

Opening Session

Technology Architecture Considerations for Smart Metering & Beyond

Kathy Shaffer, OMNETRIC Group

Utilities are deploying smart technologies to enable new capabilities that will help them meet their commitments to stakeholders, improve network reliability and deal with the disruptive trends. In order to adapt to rapid change, utilities will need to navigate through some key technology complexities, including an evolving standards landscape, balancing short-term wins with long-term integration complexity and stewardship of data. Kathy Shaffer offers key insights into these issues and the importance of defining an end-state that is relevant to the utility's strategic goals along with a phased approach that is aligned to the utility's business objectives.

Meter Safety

Instructor: Steve Shaw, Georgia Power

The check out procedures for self-contained meter sockets and the results of a fault in a self-contained meter socket. Demonstrations of the proper use of protective equipment and fire retardant clothing while working in reach of an energized circuit. Discussions on various accidents experienced by meterman. Safety precautions while working inside a substation.

Module 100

Fundamental Metering

Metering Math & Electrical Fundamentals

Instructor: Mike Chirico, South Alabama EC

Review of basic meter math skills. This would include fractions, percentages, multipliers, ratios, algebra and how they apply to metering applications. Learn the principles of electricity, AC and DC circuit theory including ohms law and circuit components, along with current and voltage laws.

Single Phase Meter Theory

Instructor: Keith Hardt, Pungo Engineering

Explanation of the mechanics and electrical theory of single phase meters. Discussion of internal meter components, and how they interact to make the meter register properly.

Single Phase Meter Testing

Instructor: Trent Christian, Georgia Power

What does it mean to "test" a meter? This class includes discussion on testing methods and equipment along with ANSI requirements. Proper repair and maintenance of single phase meters are addressed.

Service Voltages / Types & Form Numbers

Instructor: Jeremy Morgan, Fairhope Utilities

Focuses on service voltages and how they relate

to meter selection. What is a meter "Form" and how does it relate to the type of service? Learn what does the nameplate information tell you. Overview of how meters, sockets and transformers are wired together? Although concentrating on single phase services, polyphase meter forms are also discussed.

Polyphase Metering Theory

Instructor: Paul Milan, Southern California Edison

This class will introduce the student to the principles of polyphase metering. Explanations of different configurations and the uses for polyphase meters.

Instrument Transformers Fundamentals

Instructor: Rudolf Ogajanov, ABB

Course is designed to teach the fundamental characteristics of Current and Potential Transformers as they are applied to electric metering. Topics include ratio, rating factor, BIL, burden, polarity and ANSI accuracy class.

Distribution Transformer Connections

Instructor: Mike McHan, Jason Waters, Georgia Power

Lecture on the understanding of distribution transformer connections and how to make them. A necessity to a well rounded meter person.

Demand / Time of Use Metering

Instructor: Jack Pyburn, Honeywell Elster

Lecture on what "demand" is and why do utilities use demand metering. It will cover different types of demand metering and technologies. This class will also cover "Time of Use" (TOU) metering and related technologies. It will address questions on why we use TOU metering and its benefits.

Module 200

Advanced Metering

Power Theory

Instructor: Brian Chandler, City of Troy Utilities

An expansion of the popular course on the basics of electricity – volts, amps, power factor and all kinds of good stuff. Definition and applications of KW, KVA, power factor, reactive power, and demand. Introduction to complex math and phasors.

Principles & Applications of Polyphase Metering

Instructor: Randy Riley, Landis + Gyr

Lecture on "What is polyphase metering." Why does the customer need this type of metering? Evolution of polyphase metering. A review of delta and wye metering applications, 2,2-1/2 and 3 element meter selection, "multi-form" meters and Blondel's Theorem. Polyphase meter wiring connections are discussed.

Installation Troubleshooting Using Phasors

Instructor: Christopher Prince, Aclara

An introduction to the concept of phasor diagrams – what they represent, how they are developed, and how they may be used

as effective diagnostic tools. Working with phasor information provided by new solid state electricity meters to troubleshoot new and Existing metering installations. Includes some interactive exercises diagnosing miswired meters.

Pulse / Load Profile Metering

Instructor: Bill Brayden, Solid State Instruments

What is pulse metering? When, why, and how you would use it in a modern day metering system. Explanations of pulse initiators, isolation relays, and pulse weight calculations.

Alternative Energy Metering

Instructor: Michael Dalton, Georgia Power

Learn about installing meters when the source is from alternative energy. A discussion on the components used and the safety issues. A look at the information provided for billing.

Advanced Meter System Design

Instructor: Trent Christian, Georgia Power

This session will cover the process of designing a large Commercial & Industrial metering installations. Review of the components necessary and the purpose of each to the application.

Applications & Sizing of Current Transformers

Instructor: Frank Lopez, GE Digital Energy

Learn the procedure to determine the proper current transformer size for an installation. Review the application of rating factors.

Reactive, KVA and 4 Quadrant Metering

Instructor: Victor Love, Schweitzer Engineering

Explore reactive metering concepts and terminology. Look at why reactive measurements are important, their impact on system losses, equipment sizing, and cost of service. Review the mathematical derivation of reactive quantities. Explanation of 4 Quadrant metering.

Applications of Multi-Function Metering

Instructor: Mike Bearden, Landis + Gyr

This session will cover the proper selection and application of the multi-function meter. A review of the considerations for the type of utility service.

Module 300

Meter Testing & Safety

Grounding and Bonding of Meter Enclosures

Instructor: Trent Christian, Georgia Power

Lecture of the proper and safe way to ground and bond a meter enclosure. National Electric Code requirements will be discussed.

Fundamentals of Single & Polyphase Field Meter Testing

Instructor: George Johnson, Georgia Power

Discussion on the Basic Theory, Philosophy, and ANSI Standards necessary to complete single phase and three phase meter testing. Includes details of phantom load testing and customer load testing.

Southeastern Meter School & Conference Curriculum

Hands On Self-Contained Single Phase and PolyPhase Meter Testing

Instructors: George Johnson, Art Lowery, Will Rogers, Barry Reese, *Georgia Power*
Hands on lab allowing students to test mechanical and electronic self-contained watt-hour meters using phantom load and portable watt-hour standard.

Hands On Transformer Rated Solid State PolyPhase Meter Testing

Instructors: George Johnson, Art Lowery, Will Rogers, Barry Reese, *Georgia Power*
Hands on lab allowing students to test electronic transformer rated watt-hour meters. Using phantom load and portable watt-hour standard, three portable watt-hour standards, and newer technology test equipment. Testing from infrared test LED.

Testing and Verification of Meter Installation Using Customer Load

Instructors: Art Lowery, Will Rogers, Barry Reese, *Georgia Power*
Demonstration on how to properly check your overall meter installation and be assured of accurate billing. Class will include vector analysis, voltage measurement, CT burden verification and verifying CT ratios using latest test equipment and classroom discussion.

Residential Theft

Instructor: Paul Pulliam, *Georgia Power*
The loss of revenue through unsecured meters, the use of tap detectors, the use of check meters and other methods of theft detection, the meterman's role in revenue protection, and how investigations are completed after a theft case is discovered.

Commercial Theft

Instructor: Paul Pulliam, *Georgia Power*
Detection of loss of revenue due to theft on Commercial accounts. Ways to prevent loss of revenue due to theft of services on Self Contained Polyphase and Instrument Transformer Rated accounts.

Module 400

Smart Grid, AMI and Emerging Technology

Cyber-Terrorism Defense - Protecting Our Nations Critical Infrastructure

Instructor: Steven Dyer, *Central Service Association*

This is a fast paced discussion on how to protect our critical infrastructure. Real world examples of hacking and demonstrations of how easy it is to break into almost any system. Cyber-Terrorism Defense informs participants not only how to combat cyber-terrorism, but also shows the history of how we came to the place we are today. It answers the question of who is really out there and why they want access to our information.

US Army Central Metering Program

Instructor: Michael Ott, *US Army Corps of Engineers*
The U.S. Army Corps of Engineers, Engineering and Support Center, Huntsville (Huntsville Center) manages the \$230 million Army Metering Program. AMP was initiated in response to the Energy Policy Act of 2005 (EPAct 2005), which requires federal facilities to be metered with advanced meters where practical. Electric meters have been installed and connected into energy monitoring systems to provide effective, accurate reporting for timely energy management and accountability. Also have integrated installations and/or regional management systems and meters into an enterprise-wide single Meter Data Management System (MDMS). This session will be a look at how this program has been implemented and the next steps.

Next Generation Metering Technologies

Instructor: Zac Canders, *DataCapable*
The grid is actively evolving and with this comes new technologies, teams, and processes. Gone are the days where silo'd systems and solutions can fulfill all the meter-to-cash needs of an electric utility. Advancement in hardware, communications, and software are transforming the value of meters and associated metering technologies. This presentation will discuss the future of metering technology. This will include the role of machine learning, node based applications, interoperability, and standards.

Pre-Pay Metering - Utility Case Studies

Instructors: Jason Thrash, Brad Kimbro, *Wiregrass Electric Cooperative*; Ronnie Noble, *Georgia Power*
Many utilities have implemented a Pre-Pay Metering solution for their customer base. Wiregrass Electric Cooperative and Georgia Power will share the application, benefits, challenges and future with the systems they currently are providing to their utility customers.

Leveraging AMI Data to Serve

Customers: Reducing Costs Through Behavioral Change

Instructors: Jamie Wimberly, Nat Treadway
DEFG

Many utilities have adopted new technologies to improve system reliability and improve the customer experience. This session will explore how AMI can improve residential offerings. Customer expectations are changing, and utilities can develop strategies and offerings that better serve customers needs. DEFG will discuss advanced services that leverage AMI data and communicate in ways that help residential customers to reduce usage, lower bills, simplify payment, increase satisfaction, lower utility operating costs and enhance revenue recovery.

Understanding Power Quality & Analysis Tools

Instructor: Shane Reeves, *Schweitzer Engineering*
Uncover potential cost savings by visualizing system data and identifying power quality disturbances. This session will introduce the characteristics of power quality (PQ), describe, real-world PQ problems, tools for root cause analysis, and prevention measures. Learn about the impacts of Voltage sag,swell, interruption (VSSI), Harmonics, Unbalance, and more. Included also are practical ways of automating data collection and software reporting.

Impacts of Interconnected Solar on Utility Metering

Instructor: Keith Hardt, *Pungo Engineering*
The presentation covers the metering and protection requirements for the interconnection of utility scale solar generation to utility electric distribution systems. Discussion topics will include the utility interconnection process, metering, protection and safety considerations.

Metering Communications

Instructor: Michael Neas, *Schneider Electric*
This session will define the basic physical elements of a communication system and the basic elements of a communication model. Topics include how to apply and configure the physical elements and the protocol specific elements of a serial communication system. Also how to apply and configure the physical elements and the protocol specific elements of an Ethernet communication system.

Module 500

Meter Programming

Overview and hands on programming of manufacturers metering software. You will be creating and editing meter programs.

Laptop computers are provided but students can bring their own.

Meter Programming

- Aclara
- Honeywell Elster
- Itron
- Landis + Gyr

Student & Presenter Registration Form

Southeastern Meter Technical Association

The Southeastern Meter Technical Association subscribes to the art of metering electric energy and power, and to the purpose of keeping abreast of new developments and techniques in the practice of this technology, and the sponsorship of educational programs and training for electric meter personnel.

The purpose is to organize an annual electric Meter School for the benefit of the attending employees in the electric utility industry.

Day Participant Program

This provides an opportunity for management (general managers, purchasing agents, operation managers, engineers, etc.) to **attend one day for a reduced fee.** Come on any day and attend a few classes, then enjoy an evening of hospitality in the Exhibit Hall. Lunch is provided for Day Participants.

Cancellation Policy

Notification of cancellation must be submitted in writing to:

SE Meter Technical Assn
c/o Utility Technology Association
4711 Peachtree Industrial Blvd.,
Suite 100
Berkeley Lake, Georgia 30092

Refunds, less a \$50 administrative fee, will be made for all cancellations received in writing before March 6th. No refunds will be made after that date, but a substitution of attendees may be made by notifying the Southeastern Meter Technical Association prior to the conference.

Southeastern Meter School & Conference March 20 - 23, 2017 The Hotel at Auburn University, Auburn, Alabama

 First Name

 Last Name

 Badge Name (if different from above)

 Title

 Company

 Address

 City

 State

 Zip Code

 Work Phone

 Mobile Phone

 Email

Registration Fees

 \$ 395

Student Registration Fee includes Conference Notebook, Lunch on Tuesday and Wednesday, Dinner on Wednesday, Networking / Hospitality Breaks, and Admission to the Exhibit Hall.

 \$ 195

One-Day Student Registration Fee includes conference notebook, one lunch, and admission to the Exhibit Hall.

 \$ NC

Presenter - No Charge - All Presenters Must Register

Pre-Registration By March 6th

Late and OnSite Registration are subject to an additional charge of \$50.

Payment Methods

Check Payable to **Utility Technology Association** enclosed for \$ _____

Please Invoice _____

Purchase Order Number _____

Credit Card Payments accepted only with On-Line Registration

Return Registration Form To

**Southeastern Meter Technical Association
c/o Utility Technology Association**

4711 Peachtree Industrial Blvd, Suite 100
Berkeley Lake, Georgia 30092

Please email questions to
suzanne@utilitytech.org

or

or

Fax Registration Form To

Fax (770) 662-0277

**Contact Suzanne Powell
at (770) 519-1676**

Item # 4

Register On-Line at www.semeterschool.com



Utility Committee Meeting

AGENDA

March 7, 2017

Item:

Approval - Out of State Travel for Telecom

Department:

Additional Information:

Financial Impact:

Budgeted Item:

Recommendation / Request:

Viewing Attachments Requires Adobe Acrobat. [Click here](#) to download.

Attachments / click to download

 [Telecom Training Info](#)



To: City Council, Committee, City Administrator
From: Brian Thompson
Department: Telecom
Date: 3/2/17
Description: Out of State travel for Telecom Department

Budget Telecom Training

Funding Source:

Budget Allocation: \$4,500.00

Budget Available: \$4,500.00

Requested Expense: \$0

Company of Purchase: Adtran

Recommendation:

Staff recommends the APPROVAL of this training.

Background:

Adtran a Fiber To the X Company is having a training conference in Huntsville Ala. All expenses are covered by Adtran.

Attachment(s):

Request – 1

Quotation –

Brian,

We are having our annual Broadband Event in Huntsville, AL, April 10-12. The event is attended by approx. 120+ customers and is an opportunity to learn more about what ADTRAN does and to network with other people in the industry. ADTRAN pays for all travel and expenses. The sessions will be a combination of product sessions and technology presentations. Let me know if you would like to attend or send a couple people

- Any movement on the development from the developer?

OVERVIEW AGENDA:

Monday, April 10

[if !supportLists]• [endif]Arrival and Welcome Reception at ADTRAN.

Tuesday, April 11

[if !supportLists]• [endif]All Day Sessions, Dinner at Lake Island (weather permitting)

Wednesday, April 12

[if !supportLists]• [endif]Elective Sessions and Dinner at U.S. Space & Rocket Center

Thursday, April 13

[if !supportLists]• [endif]Departure

Thanks,

Brian Thompson

ADTRAN Territory Manager –GA, MD, NC, SC, and VA
(336)314-9736