

# Underground School

**MMUA/APPA/MREA**  
**May 14-17, 2019**  
**MMUA Training Center, Marshall, MN**



Minnesota Municipal Utilities Association (MMUA), along with our partners Minnesota Rural Electric Association (MREA) and American Public Power Association (APPA), are pleased to offer the 2019 Underground School.

Underground School offers participants top-notch instruction from experienced professionals in a very collaborative learning environment where sharing ideas is encouraged.

With two class options and numerous social opportunities—like our always popular Pizza Reception, this School really does offer something for everyone!

**DID YOU KNOW?**  
*MMUA opened the Training Center 20 years ago? This endeavor could not have been initiated nor sustained without the support of our generous members. Thank you!*

# 2018 Underground School – Class Overview

## CLASS OPTIONS

Classes are held concurrently May 15-16.

**When registering, select 1 of the following course options—**

**Multi-Session Class or Advanced Class**

### About the MULTI-SESSION CLASS

**(Consists of the following six (6) Sessions)**

The hands-on class is intended for lineworkers of all experience levels.

#### Session #1 - Locating

##### URD Cables

This session is designed to give individuals a better understanding of locating URD cables. Participants will be able to work with various brands of locators and learn different techniques, including locating bad secondaries using an A-frame locator.



#### Session #2 - Table-top Splicing and Terminations

For utilities looking for a reliable alternative to compression connections, 3M offers the shearbolt connectors, QCI Series. 3M's Jim Stephens, will offer useful tips as he instructs on the proper technique for terminating a splice. Attendees will also participate in other terminations to ensure understanding and to reinforce comprehension.



#### Session #3 - Secondary Troubleshooting

Secondary troubleshooting can be a hassle at times. This session is designed to give participants a better understanding of different scenarios—including back feed and

Note: The Multi-Session Class is a rotating class—participants will rotate through each of the six sessions listed below. The Advanced Class does not rotate.

open neutral situations. Partial power scenarios will also be discussed and worked through with hands-on exercises. Proper testing of connections, phasing, tagging and installation of secondaries will also be covered.

#### Session #4 - Infrared Technology

The use of infrared technology is becoming more and more crucial. Understanding the technology and how to properly use it can make a big difference in the process. This session will go over the fundamentals of infrared: how it works, key factors in obtaining images, software and ways you can apply the information.

#### Session #5 - Exposing Live Underground Cables

There are many times where utilities need to expose existing energized cables. This hands-on session will cover the proper way to do so using backhoes, vacuum excavators and shovels. Once the wires have been exposed, participants will be taught the proper method of backfilling around these wires.



#### Session #6 - Accident Investigation

In this classroom session, participants will hear and discuss an accident that recently happened in Minnesota to a lineman on a storm job. This accident, and others that have occurred around the state, will be broken down, analyzed and thoroughly discussed. Topics to be covered include best practices, PPE use, job briefings, proper steps to ensure a safe work environment, and more.

### About the ADVANCED CLASS

#### Maintaining Your Underground System

This two-day session will be packed with intense training and will move quickly to cover all the information. This is an advanced class designed for seasoned lineworkers, managers, engineers and others who can benefit from the course.

Topics to be covered include:

- Power factor
- Transformer specs
- Cable specs
- Proper construction specs
- Financial considerations
- System losses
- Cable replacement plans

## GENERAL SESSIONS

The General Sessions are held on the first and last day of the School. Participants must attend both General Sessions to receive full credit for course hours.

### Tuesday, May 14

#### Customer De-escalation Strategies

Learn about pre-assault behaviors both verbal and non-verbal. A variety of methods will be discussed on ways to calm a verbally aggressive or potentially disruptive individual. Learn how personal space, body language, and listening skills can help effectively de-escalate the disruptive behavior of those you may be dealing with. The ability to organize your thinking and calmly respond are effective de-escalation techniques that can help you avoid a potential crisis.

#### What to Bring?

##### Multi-Session Class:

- Hard Hat
- Safety Glasses
- Work Gloves
- Work Boots
- High Visibility Clothing Appropriate for the Weather
- Rain Gear (just in case)

##### Advanced Class:

- Note Pad & Pen/Pencil
- Calculator
- Hard Hat
- Safety Glasses
- High Visibility Clothing Appropriate for the Weather
- Appropriate Footwear

#### Attendance Certificate

Each participant will receive a certificate of attendance indicating the course/hours. Watch for an email from MMUA after the School.

### Friday, May 17

#### DOT/Worksite Traffic Control

This session is intended to provide work zone employees with an understanding of the most basic aspects of safety in a work zone and to encourage them to develop safe habits. It begins with how a worker should prepare before entering the work zone, and it doesn't end until the worker is off site and out of the work zone area. The session will also cover important DOT regulations that must be followed.

#### Evening Activities (optional)

##### Tuesday, May 14 - 5:00 pm

##### Pizza Reception

Everyone registered for the School is invited to our reception at The Gambler. Enjoy free pizza and a beverage!

##### Wednesday, May 16 - 5:00 pm

##### Sporting Clay Shoot or Golf

At participant's expense, we will arrange a fun evening of golf at one the Savannah Oaks Golf Course or an evening of shooting sporting clays at Shooter's Sporting Clays.

#### Schedule

##### May 14 - Tuesday

12:00 pm	Registration
1:00 pm	Welcome
1:15 pm	Customer De-escalation Strategies
2:15 pm	Break
2:30 pm	Rodeo Round-up
5:00 pm	Pizza Reception at The Gambler

##### May 15 - Wednesday

8:30 am	Multi-Session Class/Advanced Class
10:30 am	Break
10:45 am	Multi-Session Class (rotate) Advanced Class (continued)
11:45 am	Lunch Served
12:30 pm	Multi-Session Class/Advanced Class (continued)
1:30 pm	Break
1:45 pm	Multi-Session Class (rotate) Advanced Class (continued)
4:00 pm	Wrap Up
5:00 pm	Optional activities (at participant's expense): - Golf at Savannah Oaks Golf Course - Sporting Clay at Shooters

##### May 16 - Thursday

8:30 am	Multi-Session Class/Advanced Class
10:30 am	Break
10:45 am	Multi-Session Class (rotate) Advanced Class (continued)
11:45 am	Lunch Served
12:30 pm	Multi-Session Class Advanced Class (continued)
1:30 pm	Break
1:45 pm	Multi-Session Class (rotate) Advanced Class (continued)
4:00 pm	Lineworker Rodeo Mystery Event

##### May 17 - Friday

8:30 am	DOT/Worksite Traffic Control
10:00 am	Break
10:15 am	Q & A
12:00 pm	Wrap-up

Schedule subject to change.

# 2019 Underground School

## Registration Information

### Registration Fees (if registered on/by April 11)

Member - \$465 per person

Non-member - \$690 per person

Registration fee increases \$50 on April 12.  
Deadline to register is April 22.

Registration fee includes workshop tuition, materials, two lunches, refreshment breaks, and a certificate of attendance.

### Cancellations/Refunds

MMUA will issue a refund (less \$30 processing fee per person) provided MMUA is notified of the cancellation by 4:30 pm on April 23, 2019.

**QUESTIONS?** Please contact Theresa Neddermeyer by email [tneddermeyer@mmua.org](mailto:tneddermeyer@mmua.org) or call 763-551-1230.

## Hotel / Motel Information

AmericInn by Wyndham and Ramada offer special pricing for participants. Just ask for MMUA's reduced rate when making your reservation. (Note: Yellow arrow indicates location of MMUA Training Center.)



### Hotels

1. AmericInn Lodge & Suites  
1406 East Lyon Street  
507.537.9424 or 800-634-3444

2. Arbor Inn Bed & Breakfast  
1500 East College Dr  
507.532.3221

3. Quality Inn  
1511 East College Drive  
507.532.3070 or 800.288.5150

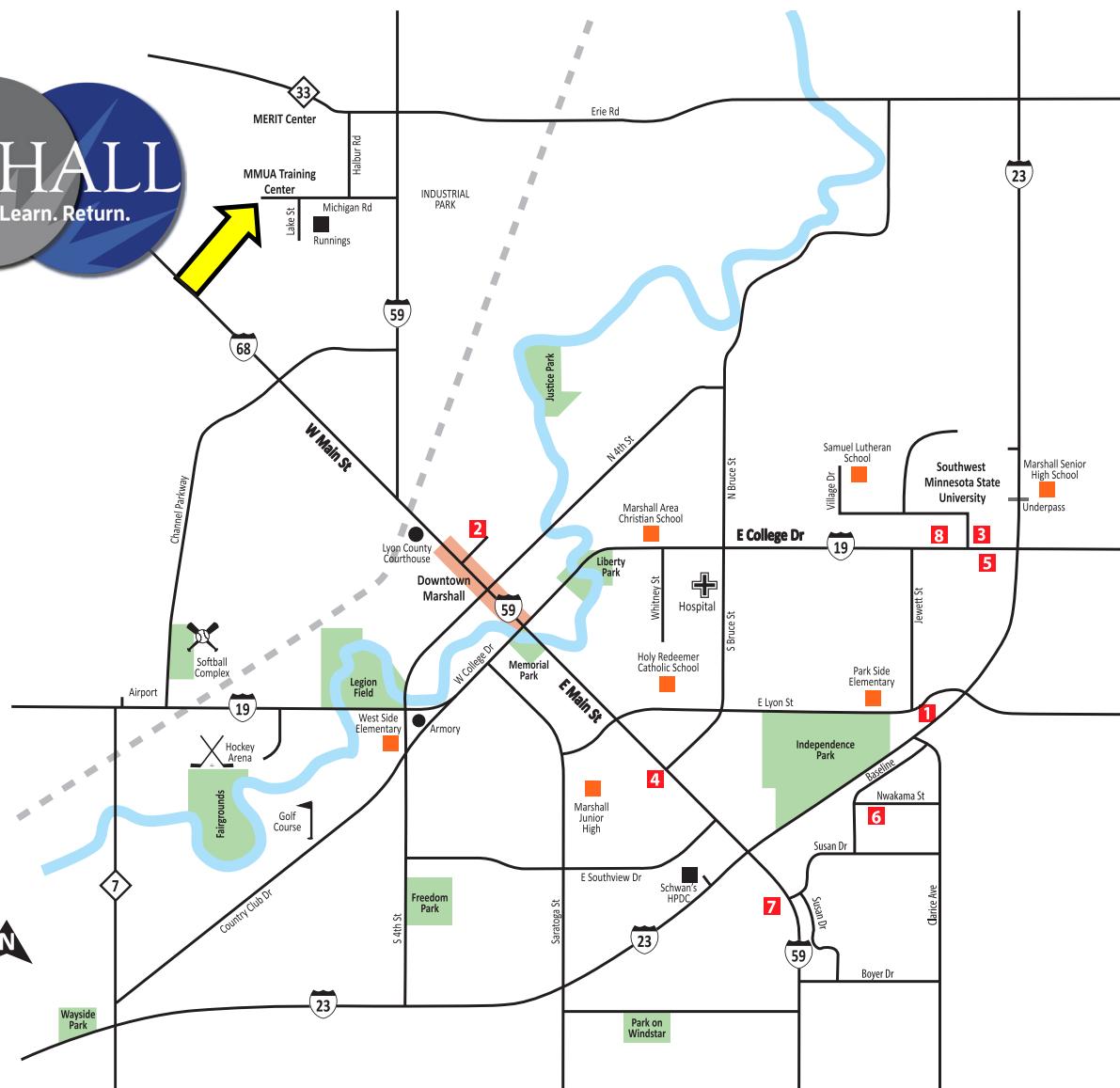
4. DeLux Motel  
516 East Main Street  
507.532.4441

5. Ramada Inn Marshall  
1500 East College Drive  
507.532.3221 or 800.422.0897

6. Sleep Inn  
1300 Nwakama Street  
507.337.0103 or 877.424.6423

7. Super 8 Motel  
1106 East Main Street  
507.537.1461 or 800.800.8000

8. Traveler's Lodge  
1425 East College Drive  
507.532.5721 800.532.5721



# 2019 Underground School Registration Form

4413.01

**May 14-17, 2019    MMUA Training Center  
1004 Michigan Road  
Marshall, MN 56258**

## Attendee Information

This form may be used to register multiple people if they are taking the same class.

Name: \_\_\_\_\_

Email: \_\_\_\_\_

Indicate Preferred Shirt Size (Small - 3XL): \_\_\_\_\_

(2) Name: \_\_\_\_\_

Email: \_\_\_\_\_

Indicate Preferred Shirt Size (Small - 3XL): \_\_\_\_\_

(3) Name: \_\_\_\_\_

Email: \_\_\_\_\_

Indicate Preferred Shirt Size (Small - 3XL): \_\_\_\_\_

## Indicate Class Selection (select ONE)

Multi-Session Class (participants rotate through 6 different sessions)

Advanced Class

Utility/Co. \_\_\_\_\_

Address: \_\_\_\_\_

Primary Contact: \_\_\_\_\_

Email: \_\_\_\_\_

Phone: \_\_\_\_\_

**PHOTOGRAPHS:** By registering for this conference, I, the attendee(s) named above, authorize Minnesota Municipal Utilities Association (MMUA) to photograph me at this event and use such photographs in MMUA marketing materials (both electronic and print). I understand that I will not be paid for giving this consent.

Registering  
is Easy!

Online: [www.mmua.org/event/underground-2019](http://www.mmua.org/event/underground-2019)  
Mail: MMUA  
3025 Harbor Lane North, Suite 400  
Plymouth, MN 55447-5142  
Email: [tneddermeyer@mmua.org](mailto:tneddermeyer@mmua.org)  
Fax: 763-551-0459

## Registration Fees (by April 11)

Member Rate - \$465 per person

Non-Member Rate - \$690 per person

## Please note:

- Registration fees increase \$50 per person on April 12.
- Registration deadline is April 22.

Registration Fee: \$ \_\_\_\_\_

x Number of Attendees: \_\_\_\_\_

Total Due \$ \_\_\_\_\_

## Payment Options

- Check Payable to MMUA  
 Bill Utility/Company  
     Purchase order \_\_\_\_\_  
 Credit Card  
     Visa     MasterCard     Discover

Name as it Appears on Card \_\_\_\_\_

Cardholder's Signature \_\_\_\_\_

Credit Card Number \_\_\_\_\_

Expiration Date \_\_\_\_\_ Card Code on Back \_\_\_\_\_

**REFUND:** MMUA will issue a refund (less \$30 processing fee per person) provided MMUA is notified of the cancellation by 4:30 pm on April 23, 2019. Sorry, no refunds after April 23.

Deadline  
to Register:  
**April 22**