

THE OFFICIAL PUBLICATION OF THE MICHIGAN RURAL WATER ASSOCIATION

CLARIFIER



HOW TO PASS THE CERTIFICATION EXAMS

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ISSUE 3 2025

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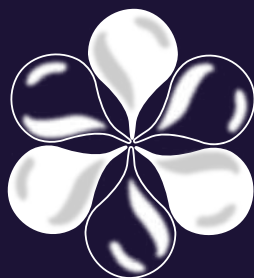
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To provide resources, education and networking to all members, future members and their customers in order to enhance quality of service.

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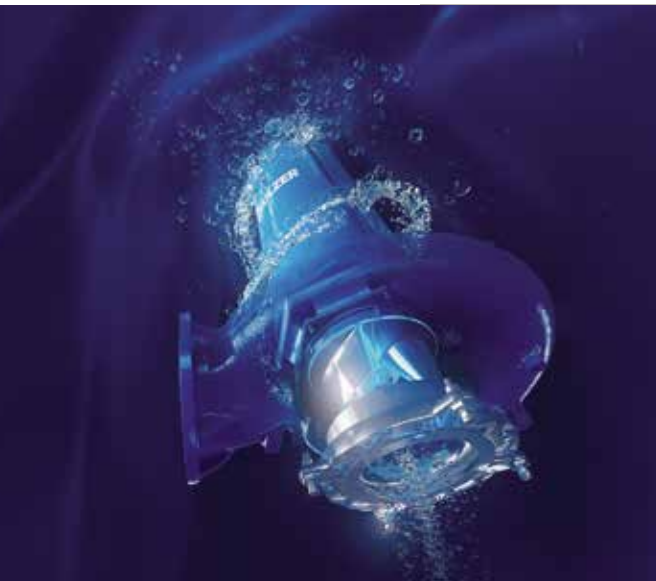
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The Importance of a Valve Turning Program in Water Systems

Water valves are like the steering wheels of a water system – they control the flow of water throughout the community. Just like any piece of equipment, they need regular attention to stay in good working order. That's why a valve turning program is so important for local water systems. Over time, valves can become stuck, corroded, or hard to operate – especially if they aren't used often. If a water main breaks or a section of pipe needs to be shut off in an emergency, quick and easy access to working valves is critical to:

- Limit water loss
- Protect public health
- Avoid property damage

- Minimize service interruptions.
- A proper valve turning program:
- Locates and maps every valve in the system
 - Inspects each valve for damage or wear
 - Turns each valve on a set schedule (usually every 1–3 years)
 - Replaces or repairs valves that are failing.
- By routinely operating and maintaining valves, utility crews can spot issues before they become emergencies, reducing costly repairs and keeping water flowing smoothly to homes and businesses.
- A strong valve turning program is a simple but powerful way to make our water system more reliable, efficient, and prepared for the unexpected. It's all part of delivering safe, dependable water service to our community. ●



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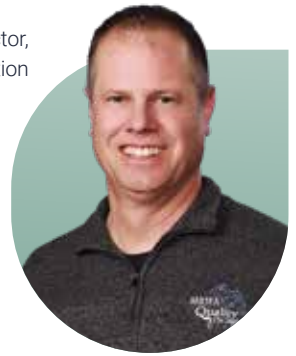
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Your MRWA Update:

Expo Recap and Upcoming Events

This issue I figured would give an update on the happenings of MRWA and upcoming events as we venture into the last little bit of this year. We appreciate all the support of our members.

In August we held our annual outdoor Equipment Expo which is a dynamic, hands-on event tailored for professionals in water, wastewater, and public works. It departs from traditional indoor expos by featuring both classroom sessions and outdoor equipment demonstrations held at MIS. This year the attendance topped 350 attendees along with 40 companies exhibiting their equipment on pit row. This has become one of our most successful events and we appreciate the support of our exhibitors and attendees. We are looking to hold our event next year on August 20, so mark your calendars and be sure to attend.

UPCOMING EVENTS

Our annual UP Conference will be in Marquette October 14–16, where attendees will have the opportunity to earn up to 1.1 CECs in both water and wastewater along with visiting with 20 plus exhibitors. Also coming up in October will be our limited treatment, Distribution 1, 2, 3 & 4 Exam Review courses to help prep you for the upcoming water exams. We typically put over 350 people through these review courses. On December 16 and 17 our Hazard Control Conference is at the Double Tree Hotel in Battle Creek. This conference provides eight hours of training on a variety of safety issues you will face working in the water and wastewater industry. We typically have over 50 people in attendance at this conference. Information for all of these trainings and additional trainings we do can be found at www.mrwa.net.



If there is anything we can do for you at MRWA please reach out to us and we thank you all for your support. ●

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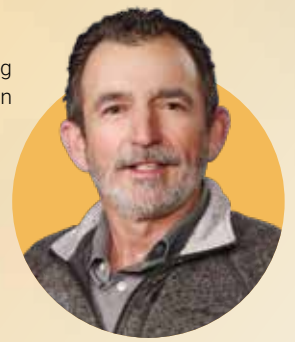
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By **Mike Engels**, Director of Training
Michigan Rural Water Association



HOW TO **PASS** THE **CERTIFICATION** EXAMS





Here is a key point to keep in mind: passing or failing the exam is not determined by your level of intelligence, but by your level of self-imposed discipline.

Do you have enough self-discipline to dedicate whatever time it takes to study for a passing grade? How much study time is enough? How well do you need to know the material? In high school, when you prepared for a test, your study time was probably determined by what kind of grade you were satisfied with. You might have wanted an "A" or a "B," but you were satisfied with a "C+." Once you knew how difficult a particular teacher's exams were, you could make a pretty good guess about how much study time was required to get a satisfactory grade.

Let me tell you a story about myself. In high school and college, I never got above a "C" in a math class. I got a "D" in college algebra once, took the class again two years later and got a "C-." Twenty years later, at the age of forty, I took two math classes and got an "A" in each of them. Did I get smarter? No. I did, however, develop some self-discipline. I told myself at the beginning of each class that I was going to get an "A" in this class no matter what it takes. I had to study approximately ten hours every week to get that "A." For the first time ever, I actually did all of the homework assignments every night during the week. Every Saturday I typically spent two to three hours reviewing what I covered during the week. Remember how your high school math teacher would say "just do the even number problems"? Well on Saturday I would do the even number problems again, then do the odd number problems, and then make up some problems of my own. I studied the material as if I had to stand in front of fifty people and teach it. Outside of gym and woodshop class back in high school, that was the first "A" I have ever gotten. The difference between myself in high school and college, and myself as a forty-year-old, was not intelligence, it was self-discipline. The ability to make yourself do something when you would really rather be fishing! It's the difference between being a sixteen-year-old and an adult who is trying to make a living and support a wife and kids. Here are my suggestions to prepare for and pass your certification exams.

YOUR GOAL SHOULD BE TO STUDY FOR AN "A"

The water distribution tests all consist of multiple-choice questions. Here is my guess on the number of questions per level.

| | |
|----|---------|
| S4 | 70–85 |
| S3 | 80–100 |
| S2 | 100–150 |
| S1 | 110–150 |

When I last took the wastewater exams, they were not multiple-choice tests. I'm not sure how many questions are on those tests.

I took my first wastewater exam in 1984. Ya, ya, you're only as old as you tell yourself...

Keep in mind that the certification exams cover a wide range of topics including rules and regulations, system maintenance, mathematics, mechanical maintenance, Chemical feed, safety, trenching and excavation safety, minor electrical issues and safety, and many more.

Ask yourself these questions and make a decision.

- Do I want to pass the certification exam?
- Why do I want to pass the certification exam?
- How will I benefit from passing the exam? List out some benefits.
- What am I willing to give in order to pass the exam?

Can you achieve this goal with what you are willing to give?

Here are some example benefits of being a licensed Michigan Water Distribution Operator:

- Potential for more money, either by a promotion within, moving for a promotion, or a pay boost of some sort for obtaining the license.
- The ability to move and live anywhere in the world that has a water system and find a job.
- More knowledge about your job, which could make it more interesting.
- And many more benefits.

HOW TO GET THERE

Educate yourself as much as possible.

Sign up for training classes. Attend as many classes as possible, especially when you are relatively new to the industry.

The learning curve for new operators is extremely large. For example, how many people outside of our industry know what a "curb stop" is?

The Michigan Rural Water Association has numerous classes on a variety of subjects that will help you pass your exam. We offer exam review classes, maintenance and regulatory topics, safety classes, and many relevant conferences.

It is best to take as many classes as possible when starting out in the industry, because the exam covers a very wide range of topics.

Study Material

The books from the MRWA review classes you attended are great study items (Water Distribution, Limited Treatment, Math).

If you haven't got one, attend one of the review classes yourself this fall, or borrow one from a co-worker who previously attended.

The University of California Sacramento – Office of Water Programs has some great books on water treatment and distribution. I believe you can just purchase the books or enroll in one of their many classes online and earn full college credits. Doing the online classes is a great idea if you plan to make a career in this industry.

EGLÉ now has a practice test on their website, as well as their updated Distribution and Limited Treatment Study Guide. Visit their Drinking Water Operator Certification Page for details. <https://www.michigan.gov/egle/about/organization/drinking-water-and-environmental-health/drinking-water-operator-certification>.

Don't forget to download a copy of EGLÉ's math formula sheet. You'll want to become very familiar with this document.

A link to the SDWA is also listed on the Drinking Water Operator Certification Page. Look at the bottom of the page and you'll see two links. One says Safe Drinking Water Act 399. This link will take you to a page listing each section individually. However, if you click on the second link that says Part 19. This will get you the entire SDWA, all 331 pages in one document (recommended).

The *Safe Drinking Water Act*, (SDWA) is arguably the most important piece of information in our industry. It is over three hundred pages in length, and most of it contains potential questions for any of the certification exams.

If you have the ability, it's not a bad idea to print this up and put it into a binder that you can reference.

You don't need to memorize and know the entire SDWA. Find the parts of it that pertain to your water system, such as what types of sampling are required. What steps are taken if water samples are above limits?

Ask yourself, what does the State want water operators to know? Well, they want you to know a lot of things, including how to maintain your water system and testing your water system water.

If you have a violation, what do you do to keep your water system and the residents connected to the system safe and supplied with drinkable water? If I'm the State, I want you to be very confident in this area. How to prevent issues in the first place, then how to deal with them afterwards. If you have some bad bacteria water samples, what do you do? Know the steps. Put them on flash cards, understand them, memorize the steps. You get the picture.

My co-worker John Monsees recently wrote an article that was published in our

quarterly produced magazine *Clarifier*, titled "The Best Date You'll Have" which covered drinking water reporting deadlines and due dates. Most of this article is pertinent to all of the certification exams. It was published in *Clarifier* Issue 2, 2025 You can access this article through our website by clicking on the link "Clarifier" then selecting Issue 2, from 2025. Here is the link: https://assets.noviams.com/novi-file-uploads/mrwa/Clarifier_Issue2_2025_Regular.pdf.

There are numerous websites that can help you prepare for the exams. Jumpstart is listed on our website and contains practice questions. On the MRWA website click on the link "Resources," then select Service Providers. Like a lot of things, I've had people tell me that it was very helpful and helped prepare them for the exam, and others who thought it wasn't helpful. You can do a free demo if you want to check it out.

There is a lot of information online. Some good, some not-so good, some free, some not so free.

HOW TO STUDY

It's not your level of intelligence that determines if you pass or fail the exam but your level of self-discipline.

Ask yourself, do I have the self-discipline to write down a study schedule and stick to my study schedule even when something more interesting comes along (like fishing)? Don't be afraid to revise your study schedule. If after two weeks you're still having difficulty, you may need to schedule more study time.

When Studying, Follow These Four Points

1 Search the books and highlight potential questions – don't just read. Look for key words like ("never," "always," "the best"). A potential question in a book might read something like this. "The *most important thing* to remember when shutting down a fire hydrant is ____." When you see a sentence like this, highlight it. It could be used as a question on the exam. Here is another example, "The five steps to a good safety program are ____." This is another excellent potential question that might be asked on the exam.

2 Make flash cards. Next, take these key sentences and any other facts or points you think might be on the exam and write

them on some 4 x 6-inch index cards to make your own flash cards. You could have upwards of 100 or more flash cards that contain pertinent figures & facts that might be on the exam. Study these flash cards two times per day. As you memorize some of the cards, remove them. If you anticipate taking higher level tests in the future, you'll be using your flash cards each season as you study for the next test. **Your flash cards will become very valuable.** You can share these with colleagues, (as long as they share theirs with you!).

Remember, flash cards are used to help first grade children learn words for reading, they are also used by sixth year medical student to memorize medical terms and fact, because they work. You can also read your flash cards aloud and make a recording on your cell phone. Try the "voice memo" app. Once you make the recording, you can listen to your recording over and over again.

3 Post flash cards around your home/office. Post flash cards with some of the more complicated items and math formulas around your home or office. If you have a 55-gallon barrel in your facility, write down the formula to calculate cubic feet in a cylinder on a piece of paper and tape it to the barrel.

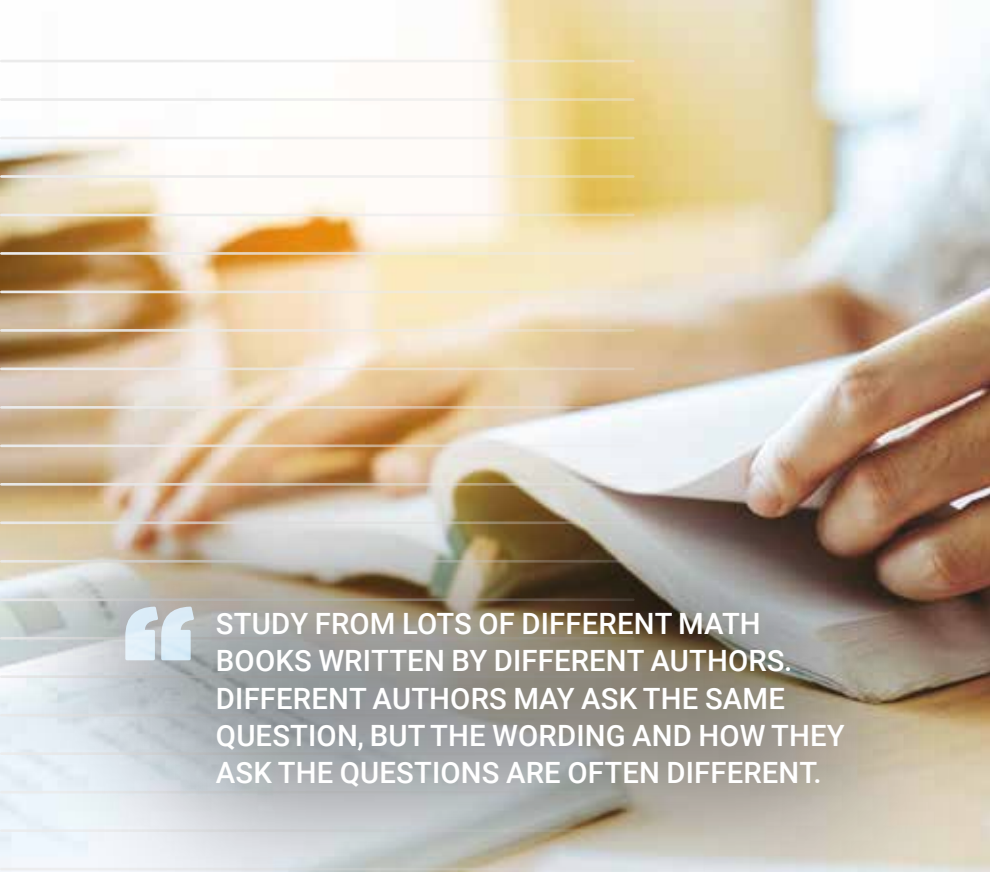
4 Practice writing down the formulas you have been memorizing from flash cards once per day for three straight days leading up to the exam, then practice using the formulas you have written down to solve various math problems.

Study from lots of different math books written by different authors. Different authors may ask the same question, but the wording and how they ask the questions are often different. Don't try to figure out how each author solves the problem, but rather use the method you are most confident in and compare your answer with the answer in the book.

You'll want to be as efficient as possible with your study time. Don't read the book three times, read it once and highlight key points and make flash cards. Talk to colleagues who have taken the exam in the past and ask:

- What study material did they use?
- What training classes did they attend and find helpful?

“ YOU DON'T NEED TO MEMORIZE AND KNOW THE ENTIRE SDWA. FIND THE PARTS OF IT THAT PERTAIN TO YOUR WATER SYSTEM, SUCH AS WHAT TYPES OF SAMPLING ARE REQUIRED. WHAT STEPS ARE TAKEN IF WATER SAMPLES ARE ABOVE LIMITS? ”



“STUDY FROM LOTS OF DIFFERENT MATH BOOKS WRITTEN BY DIFFERENT AUTHORS. DIFFERENT AUTHORS MAY ASK THE SAME QUESTION, BUT THE WORDING AND HOW THEY ASK THE QUESTIONS ARE OFTEN DIFFERENT.”

- If they had to take the test again, how would they prepare?
- How many hours did they study on average? Everybody will answer this question differently.

Don't just memorize the facts, become a student of the industry and study your industry, rather than just doing your job. If you understand something you will be much more likely to remember it than just trying to memorize the facts.

If you actually study your job things will happen. What could/will happen?

Some of your co-workers might make fun of you. Take a good look at these people, at what they have, and where they are going in life. Those who can't do something will often make fun of those who can, out of jealousy.

Your job will become more interesting.

You will become more knowledgeable about the industry.

You will grow as an individual.

Opportunities **will** eventually present themselves.

If you come to work and only do what is required, who and what will you be in 20 years? You can have a career, or you can have a job. When you are 60 years old, who and what do you want to be?

Write down your calendar when you will study. Post a picture of your calendar and study times on your refrigerator at home, so everyone in your family/house can see it.

Are there certain days on which you cannot study because of existing commitments? Your kid's ball games, bowling league, etc. Is there a time of day in which you are more likely to study?

- First thing in the morning? Getting up an hour early Tuesday – Friday
- Immediately after work? 4:00pm – 5:00pm Monday – Thursday
- After dinner? 6:00pm – 7:00pm
- Saturday mornings

"I don't have any available time or days that are convenient to study." Let's face it, nobody wants to study, and nobody has free time! However, the difference between wanting a water license and having a water license is study time.

For most people, the best time (and often the only time) to study is to get up an hour earlier than normal when no one else in the house is awake. Granted, nobody wants to get up an hour earlier than normal. Do you have the discipline to get up an hour early when you don't want to? Your answer will be determined by how much you want the license. Answer these questions:

- What days will I get up early to study?
- What time will I get up to study?
- Will I get up early to study when I don't want to?

HOW TO TAKE THE TEST

If you have had difficulty with the exam, it may not be you. It may be that you haven't

been shown how to pass them. Often, we fail at something because we were not taught how to prepare, or we didn't prepare. Here are some tests taking suggestions:

1 Once the test starts take a few minutes to write down any pertinent facts, figures, and complicated math formulas somewhere on the test booklet, answer sheet, before you answer the first question. Then stop, take a breath, and clear your mind. Rather than trying to remember lots of facts and formulas all day long, write them down and get them out of your head. This will help you **concentrate on each question** as you read it, rather than trying to remember all of the different fact, and formulas you have studied, while at the same time trying to think of the correct answer for the question you are reading. Trying to remember all the facts, figures, and formulas all day is a lot like juggling. It's kind of difficult to juggle ten balls at once, a lot easier to juggle ten balls, one at a time.

Trying to remember all the math formulas and other pertinent information in your head while you're taking the exam will tire your brain much faster, leading to fatigue and failure and wrong answers.

2 When you hit the point of fatigue (which everyone does) during the exam, take a 10 to 20-minute break. When the 20 minutes is up, go back to your test and answer the next question, concentrate on one question at a time.

3 If you skip a question, write down the question number on the front of the test booklet so you don't forget to go back and answer it.

4 After finishing the exam, take another 10 or 20-minute break. After you feel a little rested, work the math problems a second time without looking at your previous work or answer from the first time. Many math problems get marked incorrect because of a simple, easy mistake. Not because they weren't capable of solving the problem, but because they made a simple mistake and didn't catch the error. Think about that. Most likely everyone who turns in an exam has a math problem on it that is incorrect, not because they couldn't do it, but because they made a simple mistake.

5 Read each question closely, then read it again, and again!

On multiple choice math problems, the wrong answers on the test are often purposely wrong. For instance, if you're trying to calculate how many million gallons are

in a water main, and you forget to divide by 1,000,000 to get million gallons, that incorrect answer in gallons will be one of your choices. Sometimes an answer on the exam might have the correct number, but the wrong units, as in 48 **GPM** when answer "D" might have the correct answer of 48 **GPD**. This is how testing procedures determine if an operator can "think past the end of their nose."

It's not a good idea to second guess yourself on multiple choice or fill in the blank questions. When solving math problems, it's always a good idea to second guess yourself by checking your work.

On true and false questions, pay attention to words like, "always," "never," and "sometimes." Is the statement always true or sometimes true?

Taking a test can be a daunting experience, but with proper preparation and a strategic approach, you can increase your chances of success. Mastering the art of test-taking is a valuable skill that can lead to better results and reduce stress.

MATH TIPS

When working on math problems, practice on your own plant or on stuff in your own community. If you can figure out how many million gallons are in a tank in your community by looking at the blueprints or by using a measuring tape, you will become very good at math, very quickly.

When studying math for the exams, do the following:

- Study the basics.
- Memorize pertinent formulas.
- Become very familiar with the state's formula sheet.
- Become an expert at basic math formulas, such as volume of cylinder, the pounds formula, converting from GPM to GPD, PSI conversions, etc.

Many of the more complex problems are several minor formulas used together. For instance, if I need to calculate out how many pounds of (BOD for the wastewater people, or pounds of chlorine for the water people) are in a cylinder-shaped tank, I need to be able to calculate how many million gallons are in the tank before I even start on the pound formula. To be good at the more complicated formulas you need to be an expert at the basic formulas and basic math concepts.

Solving Math Problems

You can be more successful at solving math problems if you approach all math problems in the same fashion. I use a five-step process.



- What are they asking for? Circle it or underline it.
- Draw a picture if possible.
- Write down all formulas that you memorized.
- Insert the numbers into the formula.
- Pick up the calculator and get the answer.

After reading a long and confusing story problem, have you ever heard yourself say something like this: "Who the hell wrote this problem? (Just kidding.) I'm not even sure where or how to begin this problem! What do they want? Where do I start?" Following the five-step process listed above often serves as a road map directing you to the answer. **The number one rule when solving math problems is to avoid reading a question and then instantly grabbing your calculator and trying to solve the problem.** This knee jerk reaction leads to a 50–80 percent success rate. By following the five steps for every problem you solve, your success rate will increase into the 90+ percent range. Your goal when solving math problems on the exam is to get every math problem correct, not just a majority.

One problem can make the difference between passing and failing. I cannot emphasize enough the importance of following the five-step rule for all math problems.

Here are some suggestions I found online that should help with your exam:

Start early with a study plan. Effective test preparation begins well in advance of the actual test date. Start by creating a study plan that outlines what material you need to cover and when you'll study. Spacing out your study sessions over time is always more effective than cramming three nights before the exam.

Gather study materials. Collect all the necessary study materials, such as textbooks, notes, and practice tests. Make sure you have access to any required resources.

Organize your study space. Create a conducive study environment that is free from distractions. Keep your study area organized and well-lit. Use tools like flash cards, highlighters, and sticky notes.

Instead of passively reading or listening to information, engage in active learning.

This involves summarizing key points, teaching the material to someone else, or solving practice problems. Active learning helps reinforce your understanding.

Practice with past tests. If past test questions are available, practice with them. Past questions often give you insight into the types of questions you can expect and the level of difficulty. Additionally, it helps you become familiar with the test's structure.

Stay calm and manage anxiety. Test anxiety is common but manageable. Practice deep breathing and relaxation techniques if you feel stressed during the test. Focus on one question at a time and move on if you get stuck. Returning to challenging questions later can help.

Review your answers before submitting your test. This can be critically important.

Use effective test day strategies. On the day of the test, arrive early to reduce stress. Bring all required materials such as identification, pens, and pencils. Read instructions carefully and pace yourself. Start with questions you find easiest to build confidence.

Taking a test can be a nerve-wracking experience, but there are specific strategies you can employ during the test to improve your chances of success. Here's a more detailed exploration of what to do while taking the test:

Before the test starts write down facts, figures, math formulas you have been studying. Prepare yourself before you start

the test. This can relieve anxiety and ensure you give yourself the best chance possible to pass the exam.

Start by quickly skimming through the entire test. This gives you an overview of what to expect and helps you plan your approach. It's also an opportunity to identify any easy questions that you can answer quickly.

When answering questions, adopt a systematic approach. For multiple-choice questions, read each option carefully (three times) before selecting an answer. For essay questions, outline your response before writing to ensure clarity and coherence.

Begin with the questions you find easiest. This builds confidence and helps you make progress early on. Plus, it may trigger recall of related information that can be useful for more challenging questions.

If you're unsure about an answer, mark the question for review and come back to it later. Sometimes, tackling other questions can provide clues or insights that help you answer the initially challenging ones.

Maintain a positive attitude and stay calm throughout the test. If you encounter difficult questions, remind yourself that you've prepared and are capable of tackling them. Avoid panicking, as stress can impair your performance.

Pay attention to your physical well-being during the test. Stay hydrated and use the restroom before the test begins. If you feel overwhelmed or anxious, take a few deep breaths to calm your nerves.

Check your work and review your answers. Look for errors, or any misinterpretations of questions. Correct any mistakes you find but **be cautious not to overthink or second-guess yourself excessively.**

Stay focused on the task at hand. Avoid distractions, such as looking around the room or worrying about what others are doing. Concentrate on each question and your approach to answering it.

Effective test-taking is not only about knowledge but also about strategy and mindset. By employing these techniques while taking the test, you can approach each question with confidence and maximize your

chances of success. Remember that practice and experience can improve your test-taking skills over time.

Mastering the approach to multiple-choice questions can significantly improve your test-taking performance.

Here's an in-depth guide on how to tackle multiple-choice questions effectively:

1 Read the Question Stem First

Begin by carefully reading the question stem (the part of the question that asks for an answer) **before looking at the answer choices.** Underline what the question is asking for. This helps you understand what information to look for in the answer choices.

2 Predict the Answer

Before you look at the answer choices, try to predict the answer based on your knowledge of the subject matter. This initial prediction can help you evaluate the answer choices more critically.

3 Examine All Answer Choices

Once you've predicted an answer, carefully read all the answer choices. **Don't jump to conclusions after reading the first seemingly correct option.** The first seemingly correct option could be the second-best answer and might seem like the correct answer, until you read all of the answers. Sometimes the best answer may be further down the list.

4 Eliminate Obviously Wrong Choices

Begin by eliminating answer choices that are clearly incorrect. This reduces the number of options you need to consider and increases your odds of choosing the correct answer.

5 Use Process of Elimination

If you're unsure about an answer, use the process of elimination. Cross out choices that you can confidently rule out. This narrows down your options and increases your chances of selecting the right answer.

6 Be Wary of Absolute Terms

Watch out for answer choices that use absolute terms like "always," "never," "every," or "none." These choices are often incorrect because they rarely hold true in complex situations.

7 Look for Qualifiers

Pay attention to qualifiers such as "most," "often," "usually," or "sometimes" in both the question-and-answer choices. These qualifiers can provide valuable clues to the correct answer.

8 Avoid Changing Your Answers Unnecessarily

Generally, your initial choice is more likely to be correct than a later change. Only revise your answer if you have a strong reason to do so. Overthinking can lead to changing correct answers to incorrect ones.

9 Consider All of the

Above and None of the Above

If "All of the Above" or "None of the Above" is an option, consider them carefully. They are often correct when multiple statements in the question stem are true or false.

10 Mark Questions for Review

If you're uncertain about an answer, mark it for review and come back to it later if time allows. Don't spend too much time on a single question; move forward and return to it after addressing easier questions.

11 Double-Check Your Answer Sheet

Ensure that you're marking your answers on the correct spaces on the answer sheet. A simple mistake can result in incorrect scoring.

12 Stay Calm and Confident

Remember that practice is key to improving your performance on multiple-choice questions. Familiarity with the subject matter and experience with various question formats will make you more adept at quickly identifying the correct answers. Do practice test as often as possible.

Again, the hardest part of passing any test is **setting aside a defined study time.** Don't just say to yourself "I'm going to study a lot," say to yourself "I'm going to study Monday through Thursday from 5:45 am to 6:30 am," and then write this statement down on a sheet of paper.

Here are a couple of my favorite quotes from a motivational speaker named Jim Rohn:

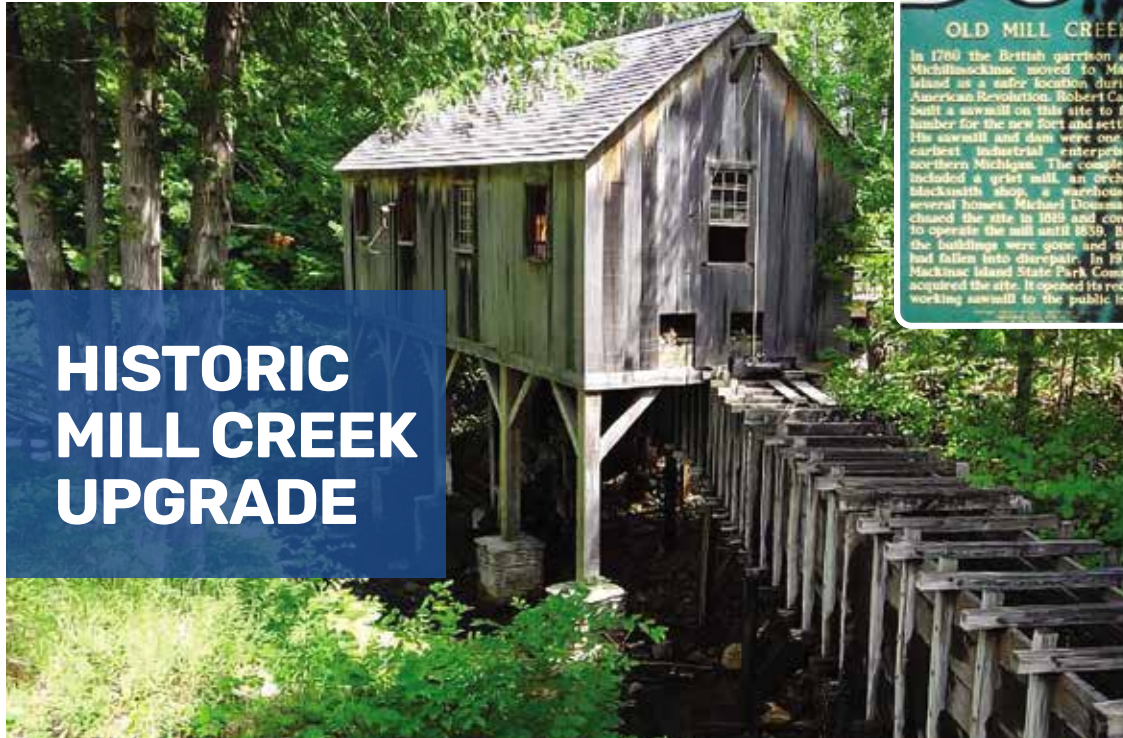
"Success is nothing more than a few simple disciplines, practiced every day; while failure is simply a few errors in judgment, repeated every day. It is the accumulative weight of our disciplines and our judgments that leads us to either fortune or failure."

"Learn to work harder on yourself than you do on your job. If you work hard on your job, you can make a living, but if you work hard on yourself, you'll make a fortune."

Passing the exams is about self-discipline, study habits, test taking skills and techniques for problem solving.

As I mentioned before, your grade on the exam is not determined by your level of intelligence, but rather your level of self-discipline. You don't need to be a genius to pass. You just need a plan, discipline, and the guts to stick to it. Set your study schedule, stick to it, and walk into that exam knowing you've already put in the work. That's how you make your own luck. ●

IF YOU CAN FIGURE OUT HOW MANY MILLION GALLONS ARE IN A TANK IN YOUR COMMUNITY BY LOOKING AT THE BLUEPRINTS OR BY USING A MEASURING TAPE, YOU WILL BECOME VERY GOOD AT MATH, VERY QUICKLY.



HISTORIC MILL CREEK UPGRADE

MILL CREEK WAS ESTABLISHED IN 1790, by Robert Campbell to provide lumber for the growing settlement on Mackinac Island. A gristmill was later added, and in 1819 the site was purchased by prominent island merchant Michael Dousman, who continued operations into the 1830s. Eventually abandoned and forgotten, the site was rediscovered in 1972 and, after extensive archaeological work, reopened in 1984 as a public interpretive center managed by the Michigan Department of Natural Resources.

MACKINAW CITY, MI



Limatorque electronic motor that operates Slide Gate 2 and controls flow coming into the mill.

SUMMARY:

Customer:

Michigan DNR

Project:

Improve water control infrastructure

Equipment:

- (2) Slide Gates
- (1) Electronic Motor Operator
- (1) Handwheel Actuator

Result:

Delivering modern flow control solutions that respect and reinforce the site's 18th-century character.

THE PROBLEM

Today, Historic Mill Creek operates as a working reconstruction of early industrial life and a public education site. **Michigan DNR** sought to upgrade water control infrastructure while preserving the visual and historical integrity of the setting. Any visible components needed to match the late 18th- to early 19th-century character of the site, particularly near the working flutter wheel and reconstructed mill systems.

The project required a solution that could manage flow in two key areas: one that mirrored the original manual operation for educational demonstration, and another that could offer modern control to accommodate varying site needs.

(continued on the next page)



Slide Gate 2 – controls the main flow into mill.



Mill Creek operates as a working reconstruction of early industrial life and a public education site.



90-Degree Gear – allows the horizontal actuator to actuate the valve vertically.



Slide Gate 1 – updated actuator with manual handwheel operation for the gate.

THE SOLUTION

Partnering with MacMillan & Associates and Rowe Professional Services, Kennedy Industries provided two customized slide gates – one actuated by a wooden handwheel to match the look of the mill, and the other equipped with an electric actuator.

SLIDE GATE 1 was installed in a drop box structure and designed to operate much like the site's historic gate once did. Kennedy supplied a manually operated gate with a stand screened in wood and a handwheel to ensure visual consistency with the era. This gate directs flow through the flutter wheel to power the mill's saw – just as it would have in the early 1800s.

SLIDE GATE 2 was installed in the main channel, equipped with a horizontal electric actuator and a right-angle (90-degree) gearbox for flexible flow control. The gate can be adjusted on-site or remotely from a panel in the operator room, providing seamless functionality without disrupting the period setting.

THE RESULT

The completed solution preserves the authenticity of Historic Mill Creek while supporting its daily operation as a public educational site. Kennedy's attention to both form and function ensures the mill continues to engage visitors – as both a working example of early industry and a treasured part of Michigan's heritage.

Kennedy Industries played a key role in preserving the function and story of Historic Mill Creek, delivering modern flow control solutions that respect and reinforce the site's 18th-century character.

THE 2025 REGULATORY ACTIVITIES



By **John DeGour**, DrPH, National Rural Water Association

2025 has seen many changes across the federal government, including the Environmental Protection Agency. While no new water-related regulatory initiatives have been introduced this year, those rulemaking activities previously set in motion are still grinding forward.

The Lead and Copper Rule Improvements (LCRI) was published by EPA on October 7, 2024 and will take effect at the end of 2027. NRWA submitted substantial comments on the rule, which received over 200,000 comments total, illustrating that flaws and concerns were identified universally across the Water Sector. This rule, however, was finalized without significant change. NRWA joined AWWA, AMWA, and other partners in petitioning the EPA to halt LCRI implementation pending the release of the new rule, but the EPA denied this request. The Lead and Copper Rule Revisions required lead service line inventories to be completed and submitted to state primacy agencies by October 16, 2024. The new LCRI regulation ambitiously requires the replacement of all lead service lines identified in those inventories within 10 years. The LCRI lowers the lead action level from 15 ug/l to 10 ug/l. Sampling for the ninetyth percentile now requires a first and

fifth-liter draw, of which the system must use the higher result. This new mandate requires systems with exceedances to offer filtration, provide public notification, and impose additional Consumer Confidence Report requirements. EPA has indicated that funding will be available through the Drinking Water State Revolving Fund, Water Infrastructure Improvements for the Nation Act, Bipartisan Infrastructure Law, and Water Infrastructure Improvements for the Nation Act grants.

The EPA released the final PFAS rule on April 10, 2024. Although EPA received over 120,000 comments in response to the proposed rule, the final rule was largely unchanged. The rule requires water systems to complete initial PFAS monitoring by 2027, followed by ongoing compliance monitoring. Systems must provide the public with information on the levels of PFAS in their drinking water beginning in 2027. By 2029, systems must implement solutions to reduce PFAS if an MCL exceedance occurs during initial motioning. Beginning in 2029, systems having one or more PFAS MCL exceedances must take action to reduce PFAS levels in their drinking water and provide public notification of the violation. Lastly, the rule set individual MCLs of 4ppt for PFOA and PFOS, MCLs of 10 ppt for PFHxS, PFNA, and HFPO-DA, and Hazard Index of 1 Mixtures containing two or more of PFHxS, PFNA, HFPO-DA, and PFBS.

On April 17, the NRWA Regulatory Committee submitted written comments to EPA on the proposed regulation for perchlorate in drinking water. Additionally, on January 16, 2025, NRWA participated in the Federalism Consultation for the proposed perchlorate National Primary Drinking Water Regulation and provided comments provided comments. On January 9, 2025, during the National Drinking Water Advisory Council consultation for perchlorate, Alaska Rural Water Association's Janna Littlewood also commented to the EPA on the proposed rule. EPA will publish the proposed rule for public comment by November 21, 2025, and promulgate a final rule by May 21, 2027.

The NRWA Regulatory Committee convenes regularly to review proposed federal regulations with public drinking water and/or wastewater implications and develops positions within the parameters of board-approved regulatory principles and policy. The committee recommends to the NRWA Board of Directors on regulatory issues that circumvent association policy or regulatory principles. The Regulatory Committee draws from its vast wealth of experience and practical knowledge to offer real-world information/insight and provide small and rural water system perspectives.

NRWA also maintains a national presence by leveraging the extensive experience possessed by State Rural Water Associations, which currently have over 31,000 utility system members across all 50 states and Puerto Rico. Members provide practical expertise and small system perspectives to inform national policy. The following National Rural Water representatives sit on national committees, workgroups, and taskforces.

- **Jana Littlewood** (Alaska Rural Water Association): EPA National Drinking Water Advisory Council
- **Paul Fulgham** (Rural Water Association of Utah): AWWA Water Utility Council
- **John Jones** (New Mexico Rural Water Association): EPA Small Advocacy Review Panel: Proposed Per- and Polyfluoroalkyl Substances National Primary Drinking Water Regulation
- **Randy Pleima** (Iowa Rural Water Association): Lead Service Line Removal Collaborative
- **David Peterson** (Kentucky Rural Water Association): Water ISAC Board
- **Jeff Ford** (Arkansas Rural Water Association): Voting member of

the Water and Wastewater Sector Coordinating Council

- **Matt Odermann** (North Dakota Rural Water Association): Voting member of the Water and Wastewater Sector Coordinating Council
- **Arianna Lageman** (Kentucky Rural Water Association): Small Business Advocacy Review Panel: Current Microbial and Disinfection Byproducts (MDBP) National Primary Drinking Water Regulations
- **John Jones** (New Mexico Rural Water Association): Small Business Advocacy Review Panel: National Primary Drinking Water Regulation for Perchlorate
- **John Covington** (California Rural Water Association): Small Business Advocacy Review Panel: National Primary Drinking Water Regulation for Perchlorate
- **Matt Odermann** (North Dakota Rural Water Association): 2024 CIPAC Water Sector Cybersecurity Task Force
- **John DeGour** (NRWA): 2024 CIPAC Water Sector Cybersecurity Task Force
- **Charles Stephens** (NRWA): Lead Service Line Collaborative Steering Committee

- **Charles Stephens** (NRWA): Local Government Environmental Assistance Network

NRWA will continue to monitor and engage in national-level regulatory activities to stay informed about potential and upcoming regulations as well as to understand new and existing regulatory requirements. NRWA seeks to influence proposed regulatory activities and advocate/champion small and rural water system needs and perspectives on the state and national stage. NRWA leverages over 31,000 utility system members across all 50 states and Puerto Rico to amplify its voice and the interests of its members and rural America on regulatory and policy issues. NRWA will continue to train, support, and promote water and wastewater professionals who serve our small and rural communities. ●

John DeGour, DrPH is the Regulatory Affairs Specialist for NRWA. Previously, he spent 13 years as an environmental scientist at the Environmental Protection Agency.

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EMPOWERING RURAL WATER UTILITIES:

THE CYBERSECURITY CIRCUIT RIDER PROGRAM STUDY



By **Charles Stephens**, National Rural Water Association
Senior Executive Policy Director

In collaboration with the White House Office of the National Cyber Director (ONCD) and the United States Department of Agriculture (USDA), the National Rural Water Association (NRWA) launched a year-long Cybersecurity Circuit Rider Program Study aimed at strengthening the cybersecurity posture of rural water utilities in November 2024. This study is designed to assess and improve the cybersecurity capabilities of the water and wastewater systems, one of the nation's most vulnerable sectors.

The growing threats in the cyber world have underscored the need for heightened security measures across all industries, and rural water utilities are no exception. These utilities play a vital role in ensuring safe, clean water for millions of people across the country, and the consequences of a cyberattack can be devastating – not only financially but also to public health and safety.


Cybersecurity for rural water systems is a challenge. Small utilities often lack the resources, expertise, and technical support to address cyber threats. The Cybersecurity Circuit Rider Program aims to bridge this gap by providing direct, hands-on, in-person assistance by cybersecurity experts who understand rural water and wastewater system designs and operations. What makes this program different from others is that the onsite aid is provided by water sector experts who have cybersecurity experience. In the past, many well-intended government programs have provided cybersecurity expertise, but in most cases, these experts have never seen a water or wastewater operation. They don't speak our language or understand the nuances of running a utility in rural America.

Additionally, these experts provide their advice remotely, on the ground, face to face assistance can't be overlooked.

The program study is being conducted in Oregon and Vermont. At the heart of this initiative are the Cybersecurity Circuit Riders, who are former water operators with cybersecurity experience. They engage directly with rural water utilities to assess their cybersecurity infrastructure, identify vulnerabilities, and offer tailored solutions. Our systems are very different, and cyber solutions must be individually based. A one-size-fits-all solution doesn't work. These Circuit Riders are working with utility managers and staff to provide training, implement best practices, and develop long-term strategies to bolster their defenses against cyber threats.

This one-year study focuses on gathering essential data to understand and address small water systems' specific cybersecurity needs and how they can be supported through ongoing technical assistance. By taking a proactive approach to cybersecurity, the NRWA, ONCD, and USDA hope to create a model that can be replicated nationwide.

The Cybersecurity Circuit Rider Program Study is more than just a government initiative – it's a testament to the power of collaboration. The NRWA, in partnership with ONCD and USDA, has brought together a diverse group of stakeholders committed to safeguarding rural water systems. This partnership will allow for the development of comprehensive solutions that address these critical utilities' immediate and long-term needs.



“ **CYBERSECURITY FOR RURAL WATER SYSTEMS IS A CHALLENGE. SMALL UTILITIES OFTEN LACK THE RESOURCES, EXPERTISE, AND TECHNICAL SUPPORT TO ADDRESS CYBER THREATS. THE CYBERSECURITY CIRCUIT RIDER PROGRAM AIMS TO BRIDGE THIS GAP.**

As the study unfolds, it will serve as a valuable learning tool for rural water utilities and other sectors that face similar cybersecurity challenges. The data collected will provide a clearer picture of the gaps in cybersecurity preparedness and highlight practical strategies for mitigating risks.

The insights gleaned from this one-year study will be crucial in shaping future cybersecurity initiatives for rural water systems. By equipping these utilities with the tools and knowledge they need to protect themselves from cyber threats, the program will contribute to the overall resilience of the nation's infrastructure. NRWA is working closely with Congress on the next Farm Bill to address this issue further. NRWA is requesting authorization to implement the Cybersecurity Circuit Rider Program, and this study will prove that Cybersecurity Circuit Riders are the best option for the sector. Regulations and government mandates burden the systems. Rural water systems need direct assistance and resources, not additional regulation.

The goal is to create a lasting impact, ensuring that rural water utilities can respond to cyber incidents and anticipate and prevent them. The success of this program study will hopefully lead to broader national efforts to safeguard critical infrastructure in rural communities, promoting safety, sustainability, and the continued delivery of safe drinking water.

Even the smallest system can no longer overlook cybersecurity. Through the Cybersecurity Circuit Rider Program Study, rural water systems will gain access to the support they need to fortify their defenses against cyber threats. The NRWA, USDA, and ONCD are committed to empowering these utilities to secure their systems and protect the communities that depend on them. As the program progresses, it will undoubtedly serve as a model for future efforts to enhance the cybersecurity of other vital sectors across the country. ●

Charles Stephens is the Senior Executive Policy Director for NRWA.



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We stand here today at a critical point for the Rural Water sector, with numerous challenges before us, including proposals for devastating cuts to the affordable federal financing rural communities rely on, assistance that we were conceived on, and programs that our nation's small and rural systems depend on daily in order to remain sustainable. These are the largest proposed cuts for our sector in decades, and such cuts would have lasting impacts well into the future.

New challenges are also facing the industry, including the cost of PFAS treatment

and Lead and Copper Rule compliance, cybersecurity threats, our aging workforce, and the cost and availability of supplies and equipment. You know the story better than I; you live it daily.

History tells us we have been here before, and when confronted with challenges in the past, Rural Water has faced them head on and, because of that, we have come out stronger and more resilient. Rural America has and always will stand up in times of challenge. It is in the very fabric of the culture and DNA of the character of rural communities and their people.

You have exemplified this very nature through the amazing response to our Rural

Water Strong campaign. When we put out the call to not only garner your signature on the pledge but also share your testimonials straight from rural America, you answered. As I am writing this, we have over 8,300 signatures on the pledge, and since January of this year we have reached over 77,000 people on social media and our Rural Water Strong website has been viewed over 43,000 times! I cannot express my thanks enough for the support you have shown for Rural Water and rural America!

At our Rural Water Rally this past February, rural leaders from across the nation came to Washington, D.C., to make the case for Rural

Water to their members of Congress. We met directly with the Chairman of the House Appropriations Committee, the Majority Leader of the Senate and numerous other water champions on Capitol Hill to carry your voice and desires to our nation's decision makers.

Additionally, in April, NRWA hosted the Rural Water Policy Forum to highlight examples of the economic and public health impact on small and rural communities through the successful partnerships between State Rural Water Associations and federal agencies.

NRWA met with newly appointed leaders within the Trump Administration who are responsible for the water funding in both USDA and EPA. We also met with the leadership within the Office of Management and Budget to make the case for why these critical financing tools and services should be contained within the President's Budget.

On May 2, 2025, President Trump released his "Skinny Budget," which included a summary of what would be contained within his official budget. The USDA Rural

Development mission area was included in this Skinny Budget, specifically with the following justification:

"Infrastructure loans are prioritized for aging rural water and wastewater systems, as well as technical assistance through the 'Circuit Rider' program balanced with reductions in the grants. Other specialty water grants and earmarks are not funded except where the tax base cannot support loans, including maintaining funding for Native American Tribes."

While the funding included in the Skinny Budget for Rural Development was at a reduced level, Rural Water was grateful that President Trump's budget request included funding for rural water and wastewater utilities. I am confident that with your input and support, you have already made a difference in the appropriations process that helped get USDA Rural Development included in the President's budget.

Now that the official budget has been released, Congress is moving forward on their work for the FY2026 appropriations,

including Rural Water's priority programs.

This process is in full swing in both the House and the Senate, and we will continue to work with our rural water champions in Congress and the Administration to ensure your voices are heard. But much more work lies ahead of us.

Currently the funding levels for USDA Rural Development are inadequate to address the basic core needs and services that rural America has relied on for decades to remain healthy, sustainable, affordable, and economically prosperous.

Ladies and gentlemen, budgets are about priorities. Are you a priority? Is rural America a priority? Is the strength of our industry directly linked to the health and economic vitality of the rural communities you serve? You know the answer – and so should your elected representatives.

I implore you to stand up for Rural America and ask your Senators to support this campaign to provide the adequate funding and services that rural communities deserve. ●



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LEARN MORE



The Village of Honor, Michigan

A Community Steeped in History and Tradition

Tucked away in the northern part of Michigan's Lower Peninsula, the Village of Honor is a serene and welcoming community surrounded by the stunning natural beauty of Benzie County. With a population of just over 300 residents, Honor remains one of Michigan's hidden gems, a village that beautifully balances rural charm with the undeniable appeal of the great outdoors. Its tranquil pace of life, rich historical roots, and close-knit community make it a place worth discovering whether you're a lifelong resident or a first-time visitor.

A RICH HISTORY STEEPED IN TRADITION

The village's history stretches back to the late 1800s, when it was originally settled as a logging and agricultural hub. The village was named 'Honor' as a tribute to the baby daughter of J.A. Gifford, the general manager of the Guelph Patent Cask Company. The town is proud of its heritage, and many of its older buildings still stand as reminders of the early days. The village retains a timeless quality, with tree-lined streets and quaint architecture evoking the essence of its humble beginnings.

Historically, Honor served as a key connection point for transportation, particularly as a stop along the railroad that helped bring prosperity to the region in the early 20th century. While much has changed over the decades, Honor's sense of tradition and its commitment to preserving local culture remain strong.

For those with an interest in history, the village is rich with stories and landmarks that tell of its development. Local archives and museums capture the spirit of Honor, showcasing everything from the early logging industry to the evolution of the local economy. These small but significant historical markers help visitors connect with the past while exploring the village's beautiful present.

SURROUNDED BY NATURAL WONDERS

Honor's true allure lies in its breathtaking surroundings. The village is ideally situated within the Manistee National Forest, with a vast expanse of trees, rivers, and wildlife that serves



as a paradise for outdoor lovers. From hiking and fishing to boating and birdwatching, the opportunities for adventure are endless.

Crystal Lake, a pristine freshwater lake just a few miles south of Honor, is the crown jewel of the area. The lake spans over 9,000 acres and offers some of the clearest waters in Michigan, making it a popular spot for fishing, water skiing, paddleboarding, and swimming. The sandy shoreline provides a perfect

setting for family picnics, and the lake's calm waters are ideal for kayaking and canoeing, allowing visitors to immerse themselves in the peaceful beauty of the area.

The Platte River Recreation Area is another nearby treasure, offering miles of trails for hiking, cross-country skiing, and snowshoeing during the winter months. With an abundance of flora and fauna, the region is a favorite for wildlife enthusiasts and photographers.

If you're lucky, you might spot deer, foxes, and even bald eagles soaring overhead.

For those seeking a more tranquil experience, the area is also home to numerous quiet parks and nature reserves, where one can escape into the forest and enjoy the serenity of Michigan's northern landscape.

A COMMUNITY OF HEART AND TRADITION

While its natural beauty is undeniable, the village's most cherished feature is its people. Honor is home to a warm, tight-knit community where neighbors look out for one another and share a strong sense of pride in their town. It's a place where everyone knows your name and where the simple joys of small-town life are celebrated.

Honor is a village that hosts several key events throughout the year, each designed to bring people together and celebrate the spirit of the community. The annual Coho salmon festival in August is one of the largest of these events, offering a weekend of live music, food vendors, parades, and local artisans. It's a fun-filled occasion that allows residents to showcase their talent and small businesses, while visitors can get a taste of Honor's local flavor.

The village also hosts seasonal farmers' markets, craft fairs, and community picnics, all of which bring together people from surrounding areas to enjoy good food, lively conversation, and entertainment. These events foster a sense of connection and belonging, encouraging both residents and visitors to form lasting relationships with one another.

SMALL BUSINESSES AND LOCAL ECONOMY

Like many small communities, Honor thrives on its independent businesses and local entrepreneurs. From family-owned restaurants serving up hearty meals to charming boutiques and farms selling fresh produce, Honor offers a variety of locally made goods and services. One of the village's hidden gems is the Honor Market, a local grocery store that has become a cornerstone of the village's economy, providing residents with everyday essentials while supporting local producers.

Many small businesses in Honor embrace sustainability, offering eco-friendly products and services that align with the values of the community. These local businesses play a vital role in keeping Honor's economy healthy and contribute to the village's distinct character. Whether you're looking for a unique gift or a



home-cooked meal, you'll find something special at one of the village's family-run establishments.

EDUCATION, FAMILIES, AND THE FUTURE

Honor is served by the Benzie Central School District, which is known for its commitment to educational excellence. The school district serves the surrounding communities and offers a strong curriculum that prepares students for success both academically and personally. The small size of the school district allows for individualized attention and fosters a sense of community among students and their families.

With a low crime rate, excellent schools, and abundant outdoor activities, Honor is a great place for families looking to settle down in a safe, supportive environment. The village's

peaceful setting allows children to grow up surrounded by nature, while also participating in community events and activities that help them develop strong social bonds.

A PLACE TO CALL HOME

For those seeking a slower pace of life, Honor is an ideal place to call home. Its affordable housing options, coupled with the surrounding natural beauty, make it a great choice for those wanting to live away from the hustle and bustle of larger cities. Whether you're looking for a quaint cottage by the lake or a spacious home with a large yard, Honor offers a variety of properties to suit different tastes and budgets.

For seasonal residents, Honor provides a perfect getaway destination. The village's proximity to Crystal Lake, the Platte River, and the nearby Sleeping Bear Dunes



National Lakeshore makes it an attractive spot for those seeking a vacation home or seasonal retreat. Whether you're exploring the wilderness in summer or enjoying winter sports in the snow, Honor offers year-round opportunities for relaxation and recreation.

CONCLUSION:
THE HEART OF BENZIE COUNTY

The Village of Honor is not just a place on a map – it's a living, breathing community that offers a blend of nature, history, and friendship. From its deep-rooted past to its vibrant present, Honor is a village that welcomes all who visit and invites them to be part of something special. Whether you're here for a day or a lifetime, you'll find yourself captivated by the warmth of the people, the beauty of the landscape, and the spirit of a community that feels more like family.

In the end, Honor may be small, but it leaves a big impression on all who experience it. If you haven't yet had the chance to explore this enchanting village, now is the time to discover everything it has to offer. ●

“ THE VILLAGE OF HONOR IS NOT JUST A PLACE ON A MAP – IT'S A LIVING, BREATHING COMMUNITY THAT OFFERS A BLEND OF NATURE, HISTORY, AND FRIENDSHIP.

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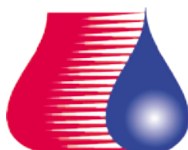


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Letters regarding the assistance you have received from MRWA are useful in discussing with our lawmakers the need for water programs for small communities. If you have received assistance from MRWA that has been helpful, please consider writing a letter of thanks and sending it to us.

August 29, 2025

To Whom It May Concern,

On behalf of the Village of Shelby, I would like to extend our sincere gratitude to the Michigan Rural Water Association for their invaluable assistance in preparing the 2025 update of our Source Water Protection Plan.

Your organization's expertise and dedication to supporting rural communities like ours play a vital role in safeguarding our natural resources and ensuring the long-term sustainability of our water systems. The updated plan will serve as a critical tool in our ongoing efforts to protect our source of water and promote public health.

We would like to express special appreciation to Kelly Hon, whose professionalism, responsiveness, and deep knowledge made the entire process both efficient and collaborative. Kelly's guidance and support were instrumental in helping us navigate the technical aspects of the plan and tailor it to the unique needs of our community.

Thank you again for your continued partnership and commitment to rural water protection. We look forward to working together in the future.

Warm regards,

Phil Morse

Village Administrator
Village of Shelby
Shelby, Michigan

218 N. Michigan Ave.
Shelby, MI 49455

Village of Shelby

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Kyle Bond

Village Manager <mgr@kalkaskavillage.com>

To: Tim Neumann <tneumann@mrwa.net>

Tim,

We wanted to express our thanks and pleasure to be able to work with Kyle Bond. Kyle was instrumental in assisting the Village of Kalkaska in a rate study that demonstrated a real need for a rate adjustment. Kyle was outstanding in his presentation to the board and the public that attended the meeting. Kyle is a great asset to your organization and to the municipalities who are able to work with him. We look forward to a long working relationship with Kyle and MRWA in the years to come.

Thank you,

Aaron J. Popa

Kalkaska Village Manager/Chief of Police
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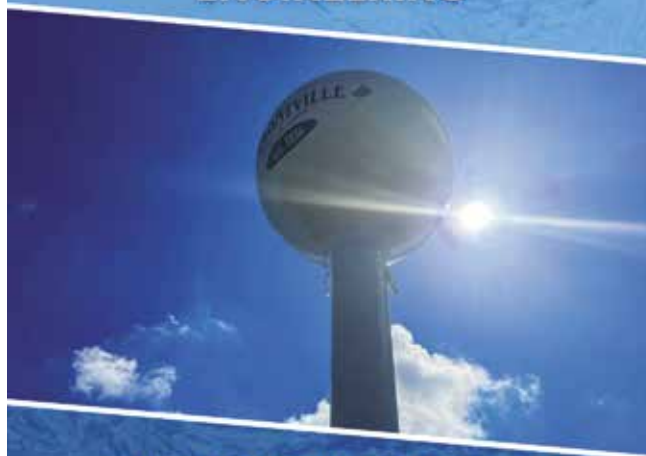


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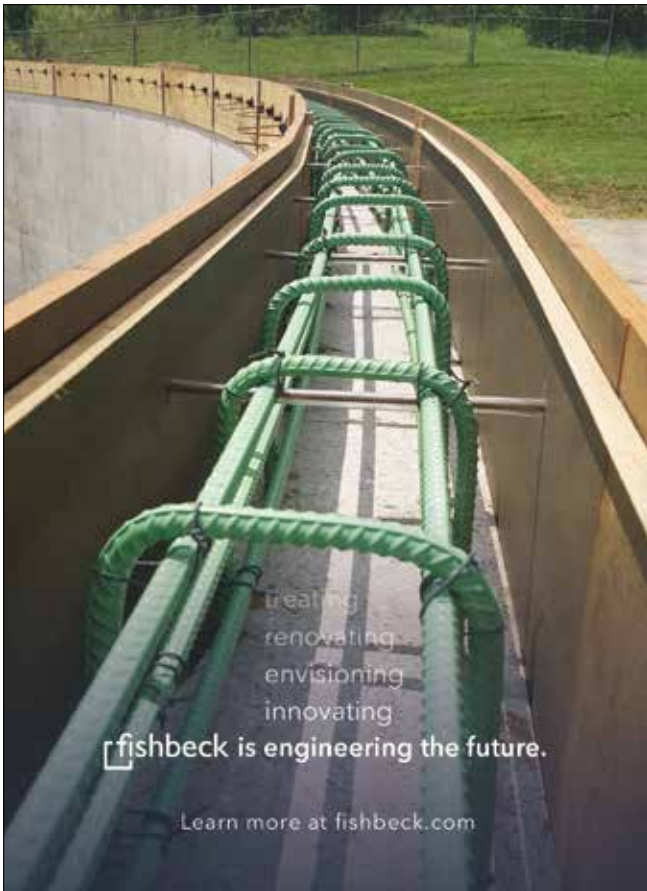
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UPCOMING EVENTS

SEPTEMBER

| | | |
|--------------|-------------------------------------|---------|
| 23-24 | 2 Day Math | Clare |
| 23-24 | 2 Day Math | ZOOM |
| 25 | Submersible Pump | Flint |
| 30-October 1 | Limited Treatment (D Certification) | Jackson |
| 30-October 1 | Wastewater Plant Operations Review | Okemos |
| 30-October 1 | Wastewater Plant Operations Review | ZOOM |

OCTOBER

| | | |
|-------|--|-------------|
| 1-2 | 2 Day Math | Milford |
| 7-8 | Limited Treatment (D Certification) | Clare |
| 7-8 | Limited Treatment (D Certification) | ZOOM |
| 7-8 | Distribution & Limited Treatment | Ishpeming |
| 8-9 | S3 & S4 Review | Taylor |
| 14-15 | S3 & S4 Review | Frankenmuth |
| 14-16 | UP Conference ATTENDEE (Operator) Registration | Marquette |
| 22-23 | Lagoon Operations | West Branch |
| 22-23 | Lagoon Operations | ZOOM |
| 22-23 | S3 & S4 Review | Milford |
| 22-23 | S1 & S2 Review | Milford |
| 28-29 | Advanced Wastewater Plant Operations | Okemos |
| 28-29 | Advanced Wastewater Plant Operations | ZOOM |
| 29-30 | S1 & S2 Review | Caledonia |
| 29-30 | S1 & S2 Review | ZOOM |
| 29-30 | S3 & S4 Review | Caledonia |
| 29-30 | S3 & S4 Review | ZOOM |

NOVEMBER

| | | |
|---|--------------|--------|
| 3 | One Day Math | Okemos |
| 3 | One Day Math | ZOOM |

DECEMBER

| | | |
|-------|---|----------------|
| 3 | Wastewater Operators Meeting | Caro |
| 3 | Pressure Reducing Valve Maintenance & Operation | Northville Twp |
| 4 | Wastewater Operators Meeting | West Branch |
| 4 | Pressure Reducing Valve Maintenance & Operation | Kalamazoo |
| 16-17 | Hazard Control Conference (Operator) Registration | Battle Creek |



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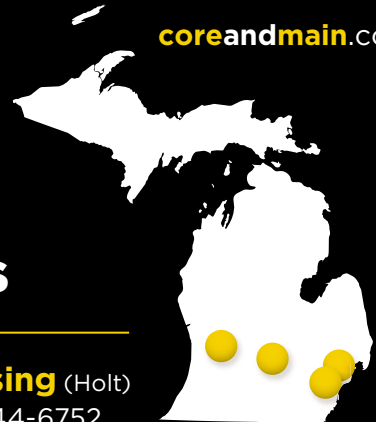
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Al Whalen, Marketing Manager

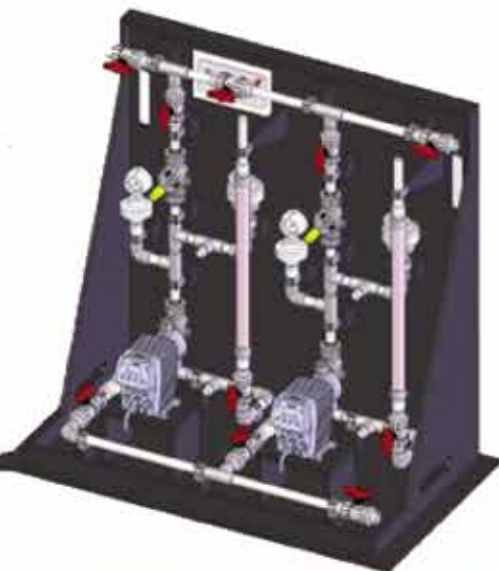
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