Video Transcript for “MWEE Conestoga Valley High School”
Posted by: Chesapeake Bay Program

**Video images**: Text “Conestoga Valley School District (PA)”, students and teacher in class and on school bus, high school building
**Narration:** You can see how big that Susquehanna River is. That’s 444 miles long 10,000 little farm tributaries that go into that. [Ms. Snavely talking with student] Kyle? Kyle’s not here. [Ms. Snavely and students on bus] My name is Kerrie Snavely and I'm a science educator at Conestoga Valley High School.

**Video images**: Class on bus, exiting bus, and testing water quality at a stream. Interview with Ms. Snavely.
**Narration:** It is, right now, 70-something and the fish are just saying “catch me, catch me”. [Ms. Snavely to students on bus] I want the kids to understand what’s happening when it rains. Where does that water go? So through my MWEE, we're going to see that it goes to Stauffer Run, which is right next door to us. Where that's connected to? Stauffer Run is connected to the Conestoga River. Why do I care? Because that's where your drinking water is drawn from. [Ms. Snavely interview]

**Video images**: Class performing various water quality tests at the stream including sampling for macroinvertebrates. Interview with Ms. Snavely.
**Narration:** You can tell it's a guy because the first few swimmerets are pointed up. Good job, I love it! Is it gonna regenerate? [Ms. Snavely and student] You can show them all the pictures you want. They can draw in the classroom. But till you're outside in the stream turning over those rocks collecting those macroinvertebrates…wow there it is! Oh it's smaller than what I thought it was gonna be or, it's bigger! [Ms. Snavely interview]

**Video images**: Class observing macroinvertebrates, taking water temperature and reading the water clarity.
**Narration:** This guy requires a lot of what? Oxygen. Okay so he is sort of like still, isn't he? Better give him some water and we're gonna see…there he goes, look at his gills going. [Ms. Snavely talking with students] Sixteen degrees Celsius. So, I say 96 centimeters. [students sharing data]

**Video images**: Class collecting macroinvertebrates, testing water samples, and measuring the stream. Images of cows. Interview with Ms. Snavely.
**Narration:** We test for nitrates. That's big around here because we're agriculture. We test for phosphorus, we do a dissolved oxygen test. Of course pH, total chlorine, and we test for iron. That's another thing we talk about here because you don't want iron in our waterway because that would be detrimental to the cows and their milk production. The kids measure the width, the depth, the velocity. To see if there's been any change we note for erosion these fall the meander. [Ms. Snavely interview] It whips out there to hit this bank and brings it down then scoops over there. [Ms. Snavely talking with students]

And they are with their group. I mean in the real world you work in a team and you have to learn to work with everyone. Everybody has their specialty but you have to work as a team together and they do. I walk up and down just watching them love it.

**Video images**: Students in classroom analyzing their stream data and drawing macroinvertebrates.
**Narration:** Side legs, side legs, side legs, more side legs, more side legs. And then they got a tail like right here. [students talking] We're gonna take our data sheets today and we're gonna fill out this data to see if indeed our section of Stauffer Run, which contributes to the Conestoga River, which goes to the Susquehanna River, which goes to the Chesapeake Bay, is a good place. [Ms. Snavely talking with students]

**Video images**: Interview with Ms. Snavely. Ms. Snavely working on lesson planning.
**Narration:** I've been doing MWEEs for about thirty years but I never had a real guide to put a MWEE together. We have standards and I was checking them off. I did, it, did it, did it. But I never really had a flow to it. So the MWEE helped me put my one concept into the right thought to follow those standards because now I can look at my MWEE and look at my standards: check, check, check. Oh, the MWEE is everything that you're doing but now it helps you do it better. [Ms. Snavely interview]

**Video images**: Class discussing results. Interview with Ms. Snavely. Ms. Snavely working on lesson planning.
**Narration:** Did you get a phosphate reading? Yep, who else did? What brought it downstream? The cows that are upstream that aren't fenced in. Well done, okay see we're thinking! [Ms. Snavely talking with students] So, we did a stormwater management plan. We talked about the BMPs. What are some of the things that we could put in place to control the runoff and purify it before it would enter our waterway? [Ms. Snavely interview]

**Video images**: Students sharing their action plans in class.
**Narration:** So would someone like to explain our action plan? [Ms. Snavely asking students] We have green roofs to catch the runoff as well as permeable pavement and rain barrels here to catch the rain water. We have a swale that goes in the backyard and then to a retention pond. [students] What would a permeable pavement do to help with the runoff? It would reduce the amount of flat surface there is and more green surface. Exactly! [Ms. Snavely and students discussing]

**Video images**: Students working in class. Interview with Ms. Snavely. Students at the stream.
**Narration:** Thinking caps on. If there was a group that caught a leech yesterday, would their water have a high DO or a low DO? [Ms. Snavely asking students] My favorite part of a MWEE is when they roundtable and they've taken all this information that they've gathered from their field trips, from their knowledge content that they've gained in the classroom, from our discussions, and they take their data sheets and they interpret what those numbers mean. And then they have that aha moment. Wow, this is why we found a lot of class 1 and class 2 organisms. We have high quality water. So they're moments

of understanding this when they look at their results like, our nitrates are high and you hear them talking about those cows that farmers got to get that fence up. That's my proud moment. Like yeah, we did it, they got it.

**Video images**: Students watching a turtle in class eat a crayfish. Class on bus. Interview with Ms. Snavely.
**Narration:** That farm that just got sold maybe they'll do some more streambank fencing. [Ms. Snavely talking with students] Part of the MWEE is, we need an action plan. What could we do to help build good stewardship in our community? I need a visual. So the kids came up with the idea about doing CVHS recycles.

**Video images**: Ms. Snavely and students in metal shop.
**Narration:** Tom Care is our metal shop teacher so I just went downstairs to his shop and I said hey I have an idea. And he just looks at me says yeah you always have an idea. And I said ok, but I need your help. All right what's your idea. So of course I have the plain sheet where Tom can do all the fancy CAD stuff. And he says huh, your kids, my kids working together. We can do this! [Ms. Snavely interview]

**Video images**: Class filling up the metal CV letters with recyclables.
**Narration:** One, two, three, fill'er up! [Ms. Snavely instructing students] I like that moment of a MWEE when it all comes together. And when we got to put our recycling letters out there and they took out their recyclables. It wasn't trash, it was recyclables. Look at all this. We recycle and now as the cars go by they're gonna see what we learned. Our kids are becoming environmental stewards. [Ms. Snavely interview]

**Video text:** Thank you to…Students and staff of Conestoga Valley High School, Conestoga Valley School District, Lancaster, PA