Rotary Club of Toledo, September 15, 2014 :

Congresswoman Marcy Kaptur

Topic: The Lake Erie Water Crisis

Good afternoon dear Rotarians. Thank you for this invitation to talk to you about a subject vital to us all; healing our greatest natural asset, Lake Erie.

When I was first elected to Congress, there were two pairs of nesting bald eagles left on Lake Erie. Our nation's symbol was an endangered species. Yet, due to passage of the Clean Water Act, a decade earlier in 1972, the banning of DDT, and the vigilant efforts of citizen naturalists and environmentalists near and far, today there are over 200 pair of nesting eagles on Lake Erie. Our efforts to restore our wildlife refuges and natural habitats, as the decades have ensued, are paying off.

This year more than 300 eaglet chicks hatched. The bald eagle has been taken off the endangered species list. Indeed, about two years ago, a pair of adventuresome bald

eagles took flight from our western basin, flew east, and established a nesting site in the Cuyahoga Valley National Park. Literally, Lake Erie's Western Basin has given rebirth to the bald eagle across our region.

This giant accomplishment of human beings helping nature restore herself teaches us that America can achieve what she sets out to do.

Our place here in Lake Erie's Western Basin is truly blessed. Nowhere on the face of the globe does this much freshwater meet this much arable land. Nowhere. This rich land, site of the former Great Black Swamp, formed as Lake Erie's glacial waters receded from as far west as Ft. Wayne, giving rise to a productive life bowl that even hosts our community's mascot, the Mud Hen, a little brown duck called the "coot."

This freshwater kingdom and the land around it was tiled and drained for agriculture. The fields are abundant

and our four-season region is sustainable. The highly productive soils of Providence Township and points west, south, and east of it are precious, surely in a world whose population is slated to expand geometrically, at a faster and faster rate. When I was born, our nation's population was 146 million. In half a century, it has doubled to over 300 million. And in even less time, by 2050, it is projected to rise to 500 million people – a population two and a half times as large as in the post WWII years.

Agricultural innovation and pushing the science of production has made it possible to meet our food supply needs and to export to a hungry world, especially those in less productive regions. Fertilizer levels have been quadrupled in the past quarter century to replenish depleted soils for higher yields and double cropping. Fertilizer composition has been altered, sometimes eliminating ingredients like sulfur that play a role in soil and water

health. Sulfur helps break down phosphorus, one of the nutrients that explode algae's growth.

But one natural resource on the face of the earth cannot be magically increased – and that is fresh water. There is a finite amount, and though its form gets changed and shifted around by the seasons, its quantity remains the same globally.

In an era where other regions are experiencing water shortages, the Great Lakes contain 85 percent of the freshwater in the United States and 20 percent of the world's supply.

On a planet where there are increasing calls by humans and animals for fresh water, it behooves us to stop and consider how our precious waters and arable soils can be managed for the sake of future generations. The stresses on our waters are growing and significant.

We need clean water and we need replenished soils. We can't afford to destroy either for the sake of the 11 million people who live here and generations to follow.

Here in Toledo, the taps are back on, but the water crisis continues. Our water is drinkable again, but the emergency still exists.

The toxic algae threat has receded for the moment, but the image of our community has suffered untold, tremendous damage.

Rainfall across our region has changed. Sudden, extreme downpours are more and more common, increasing the nutrient runoff into streams and rivers. Our climactic zone has moved up a zone. Ohio's climate is now like Tennessee's. In a nation where 17 states in the arid, fire ravaged West are facing scarcity, we are dealing with a different sort of dilemma.

There is the reality that Lake Erie is sick again – very sick. It might even go the way of Grand Lake Saint Marys, the western Ohio watershed that is in grave trouble. Lake Erie already has dead zones. No one in this region and frankly, no one with any sense can look the other way.

This resource is too important – and, this is our home. We have to muster the will and intelligence to help this system heal.

We don't need another study. Legislative work I have done in funding the Western Lake Erie Basin Partnership for a decade and a half. This group has laid the research foundation for action. We have a major environmental crisis on our hands.

The Toledo water drinking water advisory was an important warning that we overlook at our own peril.

Let me take you on a journey across our Watershed, the largest in the entire Great Lakes. Put on your hip boots.

We are about to scale a shallow canyon that tilts eastward. Toledo lies at the base of this oblong bowl on its extreme eastern edge.

Simply put, the water drains toward us across a three state region. For example, when the Findlay floods, Lake Erie eventually becomes the depository for the runoff as the Blanchard River runs north. If you picture the Watershed as a living, beating heart, the Maumee River is its major aorta. That aorta is fed by major veins and smaller capillaries that form ditches, streams, and rivers that drain into the Maumee inside this bowel tilted toward the Lake. Waterways drain downward from Michigan, - eastward from Ft. Wayne, Indiana - northward from a region south of Findlay - and upward and across toward the Lake near Sandusky.

The watershed is a sponge of water, including artesian wells, underground rivers, and a spider-web of subsurface drainage tiles.

That manmade, concentrated subsurface drainage system is the most concentrated system of tiling on our continent. When it rains anywhere across the watershed, this system acts like a superhighway – shooting the runoff into the Lake.

Now remember rainfall in the Midwest has increased by well over a third in the past quarter century.

The toxin that invaded Toledo's water system is the end product of a massive watershed runoff problem. Just fixing Toledo's water plant won't fix the watershed problem. We have to fix the tri-state feeder system that is clogging the arteries of our heart and threatening cardiac arrest in our Lake.

Our tri-state watershed embraces 11,111 square miles – larger than the states of Maryland and Delaware combined or a land area a little larger than ¼ of Ohio.

When water moves inside this watershed, it sweeps up with it natural sediments and nutrients from the land, and all the by-products of human activity – sewage, stormwater runoff, industrial runoff and agricultural runoff, including animal waste and commercial fertilizer, a witch's brew of our own making.

The water drains and courses down the Maumee River – the largest river that flows into the Great Lakes – and eventually delivers massive amounts of nutrients into the shallowest, warmest and most fragile of the Great Lakes. The Detroit River and Thames River in Ontario also charge nutrients into Lake Erie; but our watershed is the biggest contributor.

Toxic algal bloom and other water contaminants have become a global health threat and an enormously expensive treatment challenge for cities throughout our country. Fixing this is a multi-billion dollar challenge; not just a few million.

To succeed, the region will need a financing mechanism that embraces the entire watershed and meets its myriad of challenges, from thousands of leaking septic systems, to urban storm runoff, to 2 dozen combined sewer overflows, to animal manure spread on winter snows. And, as we found out in Toledo, the clock is ticking.

Good science can save Lake Erie and our freshwater supply. That is why I have worked so hard to bring precious federal dollars starting nearly three decades ago to launch the Lake Erie Research Center at the University of Toledo, in memory of Dr. Peter Fraleigh, a pioneer in lake science who predicted that this day would come. If you haven't visited this world-class Center near Maumee Bay State Park, you should.

We need to strengthen our lakefront science capabilities so that the Lake Erie Center, and Stone Lab at Gibraltar Island and the water labs at Heidelberg and the Erie County Health Department can refine the science of our

Lake. We must continue our work with NASA, and the U.S. Geological Survey, the National Oceanic and Atmospheric Administration, and the Natural Resource Conservation Service of the United States Department of Agriculture. We need them all to help us, not just during this crisis, but to lay the basis for additional action.

To effectively embrace the magnitude of what it will take to heal Lake Erie is precisely why I have worked hard to create a tri- state collaboration called the Western Lake Erie Basin Partnership. It was designed originally as a voluntary effort and a national model for watershed management in this 21st century – a century in which pundits observe freshwater will become more precious, even with wars fought over access to it.

My initial goal was to legally protect our water supply and to prevent its diversion from this region. Our challenge now is to build forward a more action-oriented organization to achieve a solution to the ecosystem crisis at hand. Thank

goodness the vision, data sets, and the relationships already have been at work across the watershed.

As the ranking Democrat on the House Energy and Water Subcommittee, I have proposed several legislative alternatives to expedite a solution to cleaning up the waters and, frankly the soils, to ensure public health and safety. The solutions that will work must rely on three pillars; science, citizen action, and an aggressive, accountable management structure.

The first immediate step is to strengthen the science. USEPA should be mandated to provide advisory guidance for testing and treating microcystin in our drinking water. We need a standard and we need universal testing protocols for this contaminant.

Second, our Lake Erie labs need the testing equipment and research capabilities to help us and all Lakefront communities to maintain a safe drinking water supply.

Communities along Lake Erie should not be forced to waste 2 days in transporting samples to labs in southern Ohio or other states for certified results during a crisis. Lake Erie is here, and so should the labs be here.

Third, we need to inspire a “watershed mindset” across our entire basin. This is an awesome task. Before you came here today, perhaps you did not know the scope of the challenge before us. To be successful, an active and engaged public across the watershed is essential. Perhaps Toledo Rotary could link with all Rotaries across the Basin and consider how to mobilize a broader public in healing our watershed, and in turn, Lake Erie. Citizens could help sample water and soil across our tri state watershed, continually reporting our watershed vital signs – and pinpointing nutrient runoff problems. As we assemble the pieces of the puzzle, our television and newspaper weather reporters could report the results, just as we do rainfall and high pollen counts. High school and university chemistry

classes can help. Boy Scouts and Girl Scouts can help. Service projects can help. Rotary can help.

I have with me today volunteer monitoring forms designed by Western Lake Erie Waterkeeper Association, an organization that has championed lake health. These forms have instructions and contact information for becoming a citizen sampler. It's a simple process, but one that can make an important contribution to addressing water quality problems in our region. Let's use science to find out where the worst nutrient runoff is coming from and post it with the data being compiled about our watershed. There are other groups on the watershed who are involved in citizen sampling. We want to encourage them to work together to build the data sets we need.

We have 1,313,420 acres to attend to. The storm sewer on your street can become a filter strip for nutrient runoff with proper rain-garden plantings. For farmers out in the country, their drainage ditches can become catchment

ponds for nutrients that can be reapplied to fields. The vast amounts of animal manure produced across the watershed need more careful management and, frankly economic uses whose value exceeds the savings of field application. One of the more intriguing ideas recently sent to me was to dewater it and blend it with coal to reduce CO2 in power plant operations.

In your handouts is a chart that roughly estimates the amount of annual manure loads and commercial fertilizer in our western basin. Let me just pick out a few numbers to illustrate the magnitude of the nutrients our watershed is asked to process each year. When it fails to do so, the residuals end up in our Lake and royally feed the algal blooms.

I asked one of our interns to do some quick math on nutrients loaded on to our watershed. So here goes; there are two million people who live in our watershed; but over nine and a half million animals live here too. The amount of

human fertilizer generated each year would fill 247 boxcars. But for animal manure, which totals over 12 billion pounds annually, it would take 42,713 box cars to haul it out. That's over 170 times more than humans.

For commercial fertilizer, there are a total of over a billion pounds of nitrogen, phosphorus and potassium placed on the land, or 3,745 boxcars full. The question is how much do the plants absorb, and how much material works its way to Lake Erie.

There is an old expression; "you can't fool Mother Nature." And, I would add – we shouldn't try. We must find the truth and face it resolutely.

Finally, I believe that our Watershed needs a more formal structure – like a federally authorized, tri-state coordinating and financing instrumentality to set goals and achieve them. This crisis is too significant to punt along. Years ago the Tennessee Valley Authority was created over

an 8 state region to aid their development. More recently, the Everglades and the Chesapeake Bat created organizations to meet their particular environmental challenges. The Bureau of Reclamation has served 17 western states in the desert west for 100 years. The Great Lakes has no such mechanism.

Such a public-private partnership could aim to lift some of the management and infrastructure financing burden from communities trying to do the right thing.

To succeed, we need science, we need one another, and we need an organization empowered and capable to meet the challenge.

Let us be heartened in our quest by this Daniel Webster quote:

“Let us develop the resources of our land, call forth its powers, build up its institutions and ask whether we in our

time and generation may not perform something worthy to be remembered.”

Lake Erie’s future depends on our resolve.