MEETING MINUTES
FEBRUARY 22, 2017

PRESENT:
Dru Montri, Vice Chair, Michigan Commission of Agriculture and Rural Development
Bob Kennedy, Secretary, Michigan Commission of Agriculture and Rural Development
Diane Hanson, Past Chair, Michigan Commission of Agriculture and Rural Development
Brian Pridgeon, Commissioner, Michigan Commission of Agriculture and Rural Development
Jamie Clover Adams, Director, Michigan Department of Agriculture and Rural Development

ABSENT (EXCUSED):
Trever Meachum, Past Chair, Michigan Commission of Agriculture and Rural Development

CALL TO ORDER AND ROLL CALL
Vice Chairperson Montri called the meeting of the Commission of Agriculture and Rural Development to order at 9:05 a.m. on February 22, 2017. Commissioner Kennedy called the roll with Commissioners Hanson, Kennedy, Montri, and Pridgeon, and Director Jamie Clover Adams present.

APPROVAL OF AGENDA
MOTION: COMMISSIONER KENNEDY MOVED TO APPROVE THE MEETING AGENDA FOR FEBRUARY 22, 2017. SECONDED BY COMMISSIONER HANSON. MOTION CARRIED.

APPROVAL OF JANUARY 25, 2017, MEETING MINUTES
MOTION: COMMISSIONER KENNEDY MOVED TO APPROVE THE JANUARY 25, 2017, MEETING MINUTES. SECONDED BY COMMISSIONER HANSON. MOTION CARRIED.

NEXT SCHEDULED MEETING
The next scheduled meeting is March 29, 2017, to be held at GreenStone Farm Credit Services, 3515 West Road, East Lansing.

INTRODUCTION OF NEW COMMISSIONER
Commissioner Montri welcomed Brian Pridgeon, who was appointed to the Commission by Governor Snyder on February 17, 2017. She added that she is looking forward to working with him.

Commissioner Pridgeon advised he is a seventh-generation pork producer from Montgomery, Michigan. His father is a previous Commissioner, as is his grandfather,
who also served as director of the department for a few years. He is a Central Michigan University graduate, and is honored to serve on the Commission.

**COMMISSIONER COMMENTS AND TRAVEL**

**Commissioner Kennedy** noted the very mild weather recently and lack of any serious frost. Fruit growers on the west side of the state are concerned and are hoping to avoid the devastating crop damage caused by spring frost in some recent years.

There is considerable discussion within the industry regarding the new Dicamba products being used for spraying soybeans. The department needs to be aware and assist in educating and training farmers, as there are considerable restrictions to other crops.

**Commissioner Hanson** reported weather in the Upper Peninsula (UP) has been mild and there is very little snow remaining. Their operation is shipping seed potatoes to growers in the lower half of Michigan, who will be planting in late March or early April.

She attended the Winter Potato Conference held three weeks ago in Mt. Pleasant. She also participated in Michigan Farm Bureau’s (MFB) Legislative Seminar held in Lansing on February 21.

**Commissioner Montri** reported the U.S. Department of Agriculture (USDA) North Central Region Sustainable Agriculture Research and Education (SARE) notified their operation it had received a Farmer Rancher Program grant. They will be working with a Presque Isle Farm in northeast Michigan and Green Garden Farms in Battle Creek to conduct on-farm studies around root crop production and post-harvest systems for scaling up. This is an exciting project that will be progressing on their farm over the next two years.

She attended the Michigan Agriculture Environmental Assurance Program (MAEAP) Partnership meeting earlier this month. She recently joined the Bath Elementary School Health and Wellness Committee, which includes operation of a hoop house. She and her husband are considering adopting that project to help support agriculture education at the school.

The Michigan Farmers Market Association (MIFMA) launched their Market Managers Certificate Program in February. Currently, there are about 80 market managers certified in Michigan. This year, MIFMA also sponsored a satellite campus in Indiana.

She served as a guest judge for the Michigan Pork Producers Taste of Elegance meeting last week, which was a fantastic event. Yesterday, she joined the Small Business Association of Michigan Leadership Council meeting.

Upcoming events in which she will be involved include the MIFMA conference on March 7-8, the Michigan Meat Association convention on March 10-11, the Michigan State University (MSU) Agriculture and Natural Resources Week events during that same timeframe, and Ag Day at the Capitol on March 22.
Commissioners Hanson, Kennedy, Montri, and Pridgeon traveled to attend today’s meeting. There was no other travel submitted for approval.

MOTION: COMMISSIONER KENNEDY MOVED TO APPROVE THE COMMISSIONERS’ TRAVEL. SECONDED BY COMMISSIONER HANSON. MOTION CARRIED.

COMMISSIONER ISSUES
Commissioner Montri advised the Commissioner Issues item was moved to earlier on the agenda to facilitate discussion and will include updates such as Commissioner Meachum shared last month relative to immigration reform concerns. That topic was also a point of discussion at the Leadership Council she attended yesterday, as it relates to agriculture and many other industries, which is an issue without much clarity at this point in time.

Commissioner Kennedy confirmed the need for education around new science in the agriculture industry, in particular new chemistry as it relates to dicamba and other applicable changes. Commissioner Montri advised new technology and science in agriculture is on the list of potential meeting topics for this year, and a focus on this new chemistry will be included. As suggested by Commissioner Hanson, opportunities for consumer education around agriculture will be tied to the new technology topic as well.

Commissioner Montri advised the Commission received a request from Dr. Olabisi with the MSU Department of Community Sustainability. They are working in partnership with the University of Michigan and the University of Arizona in submitting a National Science Foundation (NSF) grant proposal for Innovations at the Nexus of Food, Energy, and Water Systems (INFEWS). The group is attempting to involve stakeholders and experts in the field to consider how urban agriculture in Detroit and Phoenix is impacting food, energy, and water systems in those cities. The request was forwarded to the Director to explore if this is an opportunity for the department.

DIRECTOR’S REPORT
Director Clover Adams reported the Governor’s budget recommendations were introduced earlier this month and Maria Tyszkiewicz will review those details later in the meeting, and feels very positive about what was included for the department. Her recent Michigan Department of Agriculture and Rural Development’s (MDARD) overview presentations to the Senate and House Agriculture Appropriations Subcommittees were well received.

She attended the National Association of State Departments of Agriculture (NASDA) meeting earlier in the month. There was considerable discussion about immigration and trade. It is recognized the North American Free Trade Agreement (NAFTA) needs to be modernized, but trade is critical to agriculture. The industry needs to be at the table when the trade agreements are discussed. Members met with federal administration officials to help drive that message home.

In response to mention from Commissioner Kennedy, the Director confirmed she was recently appointed to the NASDA Board of Directors.
The fourth Pure Michigan Ag Summit will be held on March 9 in Novi. It is an excellent opportunity for buyers and sellers to connect and to grow the state’s economy. Again this year, we have several more buyers than in the past. That continual increase in buyer activity substantiates the success and value of this event.

Ag Day at the Capitol will be held on March 22, during which the department with launch this year’s issue of the Michigan Agriculture magazine.

ELECTION OF NEW OFFICERS
Commissioner Montri noted the Commission is looking to fill its positions of Secretary, Vice Chair, and Chair for 2017.

MOTION: COMMISSIONER HANSON MOVED TO NOMINATE COMMISSIONER MONTRI AS CHAIR AND COMMISSIONER KENNEDY AS VICE CHAIR OF THE COMMISSION FOR 2017. COMMISSIONER KENNEDY SECONDED. MOTION CARRIED.

MOTION: COMMISSIONER KENNEDY MOVED TO NOMINATE COMMISSIONER PRIDGEON AS SECRETARY OF THE COMMISSION FOR 2107. COMMISSIONER HANSON SECONDED. MOTION CARRIED.

PUBLIC COMMENT (AGENDA ITEMS ONLY)
There was no public comment relative to agenda items.

SAGINAW BAY WATERSHED MODEL: David Karpovich, PhD., Director, Saginaw Bay Environmental Science Institute, Saginaw Valley State University
Dr. Karpovich reported the work to create a Saginaw Bay Watershed Model was funded by a grant from the University of Michigan Water Center. The project is a collaborative partnership among Saginaw Valley State University (SVSU), The Nature Conservancy (TNC), LimnoTech, MSU Institute of Water Research (IWR) and several governmental agencies, including MDARD. The knowledge and expertise of a broad range of people contributed to this collaborative project.

Focus of the project was the Saginaw Bay Watershed, which is experiencing water quality issues that this project addresses in a unique way. Being 1,143 square miles in area, the watershed is Michigan’s largest and it drains 8,500 square miles of land from 22 counties. Land use in the area is very important to water quality in Saginaw Bay.

The project addressed the Best Management Practices (BMPs) that can reduce runoff and associated issues, such as unprotected soil, sediment, nutrient transport, nuisance algae, and muck on the beach. BMPs minimize sediment and nutrient runoff and include practices such as vegetative buffer strips and cover crops that not only benefit the water quality, but help the fields by retaining those needed nutrients. The Saginaw Bay Optimization Model (SagODM) is able to apply the 4 Rs of conservation to achieve multiple ecological benefits, which is to use the Right practices, in the Right places, at the Right amounts, and at the Right times.
The project goal was to determine where BMPs could be implemented to achieve ecological goals and enhance socioeconomic values at the lowest cost. This is a relatively new concept. The project identified those socioeconomic values and connected them with BMPs being applied in the field to actual outcomes in Saginaw Bay, rather than simply quantifying at the edge of the field level. The project sought to develop tools to help prioritize places to implement the BMPs for the best outcomes. The SagODM integrates field, watershed, and Saginaw Bay tools and models, interests and values from ecosystem users, and needs of SagODM end users.

The team built Soil and Water Assessment Tool (SWAT) models focusing on three subwatersheds for most intense treatment of information. He reviewed a model of the Kawkawlin River Watershed depicting phosphorus delivery to the mouth of the river. SWAT models consider soil type, soil tests, land use, crop rotations, land slope, past history, and whatever other data might be available to apply to the regional models.

The Saginaw Bay Ecosystem Model v. 2 (SAGEM2) is another model utilized. It divides the bay into one kilometer grids, 10 layers deep, and considers 30 different inputs, including weather, data from streams, and measurements from around the bay for validation, to predict ecological responses for any grid cell at any depth, including dissolved oxygen level, Cladophora loads, algae distribution, and phosphorus levels on days and places those can’t be measured. Utilizing this model, they can quite reliably predict those likely levels.

To determine what ecological features and socioeconomic conditions are valued, stakeholder input was sought through focus groups, individual surveys, and stakeholder meetings that focused on specific subwatersheds, end users, and ecosystem users. Those efforts identified the ecological values as total phosphorus, cladophora biomass (SAV), cyanobacteria biomass, and chlorophyll a. Socioeconomic values identified included fish spawning locations, stream fish habitat, recreational fishing, commercial fishing, public water intakes, birding sites, coastal wetlands, and migratory birds. All of these factors were figured into the models in terms of values. This can be refined and improved in the future through additional data collection.

The Saginaw Bay Watershed is divided into almost 8,000 catchments and the model is designed to connect each of those catchments with a grid cell and result in the Saginaw Bay. The SWAT Model and field scale tools can link what is happening in each of the catchments to the mouth of each of those tributaries and rivers. By linking that information to the Saginaw Bay Model, we are essentially linking activity in the catchments to an outcome in Saginaw Bay.

This provides a tool to direct where conservation practices could most effectively be placed. It also provides a means of communicating with people funding those practices the expected specific outcomes in the Saginaw Bay.

The cost of taking agricultural land out of production also must be considered. Through an optimization process that calculates the proportional influence of each subwatershed to each valued feature, benefits can be mapped to help assist those decisions. This represents where conservation dollars can have their greatest impact. Sediment and
nutrient reduction output maps for various regions of the Saginaw Bay Watershed were reviewed, depicting where various levels of benefits could be realized.

A more detailed final project report, as well as a video, can be accessed on the website at www.svsu.edu/sbesi/saginawbayodmupdates/.

In response to questions from Commissioner Kennedy, Dr. Karpovich advised there are 22 counties in the watershed with large agricultural use, which constitutes their project focus. The project conducted a retrospective of current practices, which is included in the final report. Currently, about two percent of land in the Saginaw Bay Watershed is engaged in conservation practices. As a result of numerous studies on buffer strip width, which is dependent on soil type and land slope, 40 feet has been recommended in the Saginaw Bay area, which may allow for narrowing of some of those existing buffers.

Commissioner Kennedy noted that considering changes coming from Washington, D.C., funding for future conservation practices might be more difficult.

Commissioner Montri asked about their next steps in terms of research and implementation. Dr. Karpovich advised for this model, he is working with soil conservation district staff in all three of the subwatersheds to assist them in using the data to implement BMPs. As a project team, they will continue to discuss ways to obtain the level of detail across the entire watershed that they currently have in the Kawkawlin River Watershed. In addition, discussions are ongoing about expanding the effort around the Great Lakes.

In response to question from the Director, Dr. Karpovich advised they are working with both the federal and county soil conservation districts, which often share office space.

MANAGING WATER RESOURCES IN MICHIGAN BY WATERSHEDS: FACT, FICTION, FRUSTRATION: Alan Steinman, Ph.D., Director, Annis Water Resources Institute, Grand Valley State University

Dr. Steinman advised the Managing Water Resources in Michigan study originated with a C.S. Mott Foundation Request for Proposal that was seeking new ways to solve community-scale water management challenges in the Great Lakes region, with the intent to stimulate new types of thinking about how to solve problems related to water pollution. The proposal stated the solution should have the ability to inform, or advance, local or state-level policy decisions that impact Great Lakes water resources. The goal of the study became that of assessing the feasibility and structure of an alternative water management approach in the State of Michigan through a district-type system of Integrated Watershed Commissions.

To sustain Michigan’s water heritage, the timing is right for examining new approaches. Toward the goal that Michigan has the governance tools to address water challenges and provide clean water and healthy aquatic ecosystems, the recommendation was to evaluate and implement necessary changes to laws, including state and local land use statutes, as well as the Drain Code, to create a more integrated watershed-based system for managing water at the landscape level.
A research approach was applied to the study with no pre-determined outcome. Although there was initial resistance from the Michigan County Drain Commission Association, clearly the study’s goal was not to put anyone out of business, but simply more effectively manage water in the state.

They convened a cross-sector planning group to provide input and assistance throughout the process, which included more than 70 participants. Two project team workshops were held and more than 40 individual/small group discussions. Results identified Michigan’s major challenges and assessed opportunities for coordination and integration from a broad-based perspective. Alternative watershed management models from states across the country were then analyzed.

Michigan’s major challenges were identified as (1) overall, Michigan’s management system is fragmented into water quantity and water quality being dealt with separately, surface and groundwater not being addressed in a conjunctive fashion, isolated decision-making (administrative and geographic), no statewide watershed management strategy, and no multi-scale strategic approach; (2) institutional resource capacity limitations; (3) water infrastructure needs; and (4) lack of trust in government.

There were two visions around the Integrated Watershed Commissions (IWCs) approach: (1) constrained – watershed-based management system without major policy/management overhauls; and (2) unconstrained – “blue sky” approach unrestricted by current policy/management limitations. The Mott Foundation asked them to consider both visions.

The constrained vision considers the state from 15 IWCs, which are the coordinating mechanism for regional, county, and municipal managers. The approach would include (1) plan strategies to achieve desired outcomes for all users of watershed resources; (2) implementation coordinated among IWC members; (3) automatic members of drain commissioners, one representative from each county commission, one representative from each intergovernmental planning agency, and an opt-in of one representative from each municipal and tribal government; and (4) leadership consisting of a five-member executive committee elected by IWC members.

Proposed boundaries/scale under a constrained IWC would be the 15 watershed-based units statewide. Governance approach would entail a largely voluntary watershed coordinating mechanism for current management structures, with leadership provided by the five-member executive committee composed of current water managers.

Scientific/technical capacity would be provided through coordinating and leveraging current resources. Financing strategies would be self-financed through performance-based property assessments, credit trading programs, and public-private partnerships. Planning strategies would include coordination of existing plans, with the option to develop new integrated plans.

There would be no regulatory authorities, with decisions implemented by each IWC member. Democratic participation strategies would be provided through implementation
of public education/outreach activities, discussion forums, and water users advisory groups. There would be no major policy overhauls, only policy revisions as needed.

The “blue sky” unconstrained IWC approach would provide regional agencies with comprehensive watershed management responsibilities to plan and implement strategies to achieve desired outcomes for all users of watershed resources.

Leadership of the unconstrained ICWs would be provided through a five-member governing board for each IWC, with three members appointed by the Governor and two members elected by populace. Operations would be implemented by the governing board hiring an executive director, as well as implementation through IWC personnel and coordination with local/state managers.

Under an unconstrained IWC, the proposed boundariesSCALE would be six watershed-based units statewide. The governance approach would be through new comprehensive watershed management agencies led by a five-member governing board. Scientific/technical capacity would be provided by IWC-housed expertise, plus strategies in the constrained vision. Financing strategies would be the same as the constrained version, plus the option to bond for specific projects. Planning strategies include developing integrated plans and aligning implementation across state, regional, and local governments/stakeholders. This IWC may directly oversee regulatory programs and/or coordinate with federal and state programs. Democratic participation strategies include those in the constrained version, plus resources for public involvement in technical activities. Major policy overhauls would be likely.

The potential benefits of IWCs include reduced redundancies leading to economic efficiencies. Instead of 83 drain and water commissioners, they would be collated into a smaller number to provide economies of scale and overall efficiencies. Management of the watersheds would be science-based, leading to improved water quality and quantity (economic, social, and environmental gains). That science could provide data not yet available, including actually how much water the state contains, what withdrawal rates are, and identify the sustainability of the state’s water resources. There also would be improved coordination among units of government and strengthened public engagement.

Possible next steps that could incrementally move us forward in this fashion include (1) organize a workgroup to reduce statutory barriers to managing drainage across regional watershed areas (e.g., Chapter 22 of Drain Code); (2) improve state agency coordination/engagement on a watershed basis; (3) develop a statewide, real-time water monitoring and data management strategy; (4) implement an IWC pilot program to test/refine recommendations; and (5) continue dialog among decision-makers and thought leaders.

The Director asked if there were an example of how reorganizing would improve the situation. Dr. Steinman noted on a watershed level, you could begin working together to determine what could be accomplished both upstream and downstream to improve the water quality and quantity in each specific instance. He advised this is currently successful in the Okeechobee Watershed in South Florida, noting there were no
resources to fund the costs, assistance was only technical, and implementation was completed on an entirely voluntary basis.

In response to inquiry from Commissioner Kennedy, Dr. Steinman advised the cross-sector planning group included representation from MFB, Michigan Agri-Business Association (MABA), drain commissioners from across the state, Office of Great Lakes, MDARD, Michigan Department of Environmental Quality (MDEQ), Michigan Department of Natural Resources (MDNR), and private sector members and funders.

In terms of next steps, Commissioner Montri asked where he sees his institute or other organizations taking the lead from this point. Dr. Steinman advised he is not certain the Annis Institute of Water Resources has an additional role at this point; however, they would be more than happy to be involved if there were a role for them, emphasizing they are not trying to be the epicenter. Two avenues are more realistic – one would be the Mott Foundation finding enough interest to fund an implementation phase; and the second would be if the Michigan Association of County Drain Commissioners, MDARD, or MDEQ decided to pursue further and developed a workgroup around that.

RECESS AND RECONVENE
Chairperson Montri recessed the meeting at 10:15 a.m. for a brief break. She reconvened the meeting at 10:36 a.m.

FARMER-LED AGRICULTURE PROJECT: Jim Isley, Owner, Sunrise Farms:
Mr. Isley advised he is a fifth-generation producer in Palmyra Township. His farm is MAEAP verified in both the Cropping and Farmstead Systems. He is a member of the Lenawee County Farm Bureau and River Raisin Watershed Farmer Advisory Committee, and serves as Palymra Township Supervisor. Being in their third year of a conservation plan, practices incorporated on his farm include strip-tillage, no-till, variable rate nutrient and seeding, and drainage control structures.

The River Raisin Watershed Farmer Advisory Committee consists of farmers helping farmers protect water quality. There are a total of 173 MAEAP verified farms in the River Raisin Watershed. The Farmer-Led Watershed Conservation has divided that watershed into four focus regions and he is the representative for the southeast quadrant. To help promote conservation in the area, “shop talk” meetings were scheduled in each geographic region during February and March of this year, with a semi-annual meeting to be held on March 29.

The main topic discussed at the “shop talk” meetings is obviously conservation and they are very open to discussing issues and solutions with fellow producers. Discussions focus on conservation practices to protect our environment and help farms remain both sustainable and profitable.

Goals of the Farmer-Led Watershed Conservation are (1) attend multiple meetings per year; (2) have 200 farmers attending the annual meeting; (3) participate with water words that work; (4) speak at the Michigan Association of Conservation Districts Annual Conference; and (5) conduct project promotion through newsletters, e-mail, website, and social media.
Planned outcomes of Farmer-Led Watershed Conservation are to (1) encourage farmer participation in MAEAP; (2) implementation of 40 new conservation practices over a three-year period, as well as maintain those already established; (3) have 20 additional farms MAEAP verified in the next three years; (4) realize a 14,000-pound reduction of phosphorus in the Western Lake Erie Basin (WLEB); and (5) reach a five percent increase per year in acres of farmland covered by BMPs.

Their agenda moving forward includes how to more clearly identify the problem – WLEB issues, producer awareness, and public perception. Causes of the problem include agriculture’s partial responsibility of WLEB issues, inadequate producer participation, and the negative perception of agriculture. Possible solutions include improved conservation education, increased producer participation in conservation efforts, and greater outreach to the public.

Successes realized to date include over 70 in attendance at the first two meetings, both producer and agency representation, legislative participation, positive farmer response, excellent media coverage, and opportunities for questions and one-on-one discussions.

Next steps will involve continued promotion of MAEAP, follow-up with interested producers, core committee meetings to surface new topics, recruit new hosts/locations, maintain positive contact with media and legislators, and being responsive to new opportunities.

He and his wife have devoted themselves to being an example of how implementation of conservation practices can make a difference. They grow over 500 acres each of corn and soybeans. He shared a short video demonstrating their strip-tillage practice.

In response to question from Commissioner Pridgeon, Mr. Isley advised resistance to adoption of practices can often be attributed to the older farmer population who often are reluctant to embrace different farming techniques.

Commissioner Montri asked what percentage the 200 farmers attending a meeting represents. Mr. Isley advised that would represent about one quarter of the farms. New people attend every year, especially many of the younger farmers; but they would like to draw more of the large-scale farmers. Commissioner Kennedy suggested keeping topics broad enough to offer value to all farmers.

The Director asked if he sees property owners in his area placing restrictions on how their land can be farmed. Mr. Isley advised of the two with which he is familiar, one requires tenants to be MAEAP verified. Commissioner Pridgeon advised how a farmer plans to use the land definitely is a decision point for many property owners.

In response to question from Commissioner Kennedy, Mr. Isley advised he is not aware of any other farmer-led conservation groups in the state. The acute awareness that existed in the River Raisin Watershed was a large driver for establishment of their group and their goal is to be proactive.
Dr. Rose advised she is from Florida and worked with their water districts extensively on science and water quality issues from groundwater to surface water. She is a supporter of considering issues from a watershed perspective. With its very long shoreline, Michigan is similar to Florida with an important coastal system, yet has some very unique aspects because it is a freshwater system.

The economic impact of the Great Lakes is amazing, with 40 million people relying on this international basis shared by the U.S. and Canada. Over 211 billion liters are withdrawn daily for municipal, agricultural, and industrial uses.

She studies pollution at it relates to human health, and primarily that is fecal pollution from humans and animals. There are 24 million gallons of sewage discharged annually and 539 combined sewer overflow systems in stages of repair. There are closures and advisories on the beaches that have economic impacts, which are estimated at $240,000 a day. Temperature and climate changes contribute to the issues, as well as the extremes from drought to high rain events affecting the land. Because Michigan possesses the water, it has a great capacity to grow agriculturally in the future.

Water, food, and human health are very connected. These have changed over the last 30 years, and we also now have a more immune-compromised population. The contaminates on which she focuses originate primarily from animal and human waste. They enter the water system in a variety of ways and then can enter the food chain through irrigation, fertilization, and agricultural runoff.

Another factor that has changed over the last few years is the difference between urban and rural environments, the main difference being water and wastewater systems. In urban areas, there are wastewater treatment systems with larger flows, combined sewer overflows, infrastructure spills, community water systems, and tourism with a focus on coastal areas. In rural areas, there are more diffused sources with septic tanks, smaller wastewater plants, lagoon systems, animal manure and biosolids application, groundwater and individual wells, less monitoring and less information on water quality, and it is a source of food supply.

As already identified by previous speakers, there are various types of pollution and resultant impacts. In Toledo, while drinking water was the initial focus, more recently, the toxic algae blooms are influencing our recreational waters, with more outbreaks and more people becoming ill as a result.

The total maximum daily load (TMDL) approach to the number of causes of impaired waters varies during different time periods. What she discovered is the impairment is highly associated E.coli, a bacteria originating from fecal waste.

Knowledge gaps exist on the microbial reference of E.coli conditions in rivers and systems. We have an influence of non-point source pollution on water quality that is very difficult to ascertain and remedy. The existing spatial change at a very large scale associated with land use and land characteristics has been difficult to assess with
current approaches. We have temporal changes associated with hydrologic conditions. Our ultimate goal is restoring water quality, which needs to be accomplished at the watershed scale.

We know from past human outbreaks that fecal oral diseases are spread through fecal contamination. The pathogens are shed by an infected individual, animal or human, and the individual becomes infected through ingestion. Many bacteria and parasites are termed zoonotic, having the capability of moving from animals to humans and humans to animals. All warm blooded animals, including birds, have E.coli, so their source cannot be distinguished. They come from wildlife, runoff, septic systems, waste water/sewage treatment systems, animal farming operations, and combined sewer overflow.

Their goal has been to improve water quality diagnostics using source tracking at a very large scale. They have been working with health departments and MDEQ to establish a series of laboratories to conduct analyses with new technologies that provide for rapid processing of more samples to develop a greater spatial look. The project she will detail was completed at a 10,000 foot level to look very broadly at 64 watersheds in the Lower Peninsula that drain about 84 percent of the state’s water. They collected at the base of the watersheds under three flow regimes – base flow, when groundwater was the primary driver, spring melt, and summer rain. Wanting to consider statistical relationships, hydrology was carefully considered and no samples were taken from watersheds where water moves in and out of a Great Lake.

Samples from the 64 watersheds were taken to determine what is happening on the land and when the human marker, B.theta is increasing. It will be found in all wastewater treatment plants that discharge, downstream and in untreated and treated, and they know it is decreased by the treatment process. Where they found the relationship to the human marker was at low flow, in the winter, with septic tanks; therefore, increasing septic tanks in the watershed meant increasing the human marker. B.theta dilutes out during snow melt and summer rain, so varying concentrations exist.

From this first analysis, they learned that new microbial source-tracking tools can elucidate important nonpoint sources of water quality degradation and there is a potential need for further investigation of human health risks on large scales. Pollution arising from septic system discharges is likely more important than previously realized. Identifying sources and providing reference levels for water quality provides a basis to assess water quality trends and remediate degraded areas. While transport was linked to rain, changes in concentrations were not as clearly determined.

They wanted to move beyond septic tanks because septic tanks are managed at the county level, which can vary drastically by how their evaluation and maintenance is conducted. Statewide, there is no good understanding of where the specific problems exist and how those might be remedied.

The agricultural environment is unique and different, but also includes human sources. The markers utilized have been evaluated in a blind study in California to provide validation. They have considered two markers, with the M2 bovine marker having very good sensitivity, as well as the Pg2Bac in pigs. She shared maps depicting the
prevalence and concentrations of the bovine marker by watershed under the three flow regimes. It is not known how much is legacy versus fresh. The marker moves everywhere with concentrations greatest after summer rains and some hot watersheds were identified at that 10,000-foot level. She also reviewed maps depicting the pig marker, which followed the same patterns as the bovine marker.

They have also been overlaying this information with nutrient application based on state data sets, which is tricky because some of that data is spatially and temporally aggregated. A better job needs to be done in the future to evaluate relationships.

They began considering statistics of whether they could at that high-level look at till versus no till, manure versus fertilizer, use of tile drains and buffers, and more wetlands. What became evident were the buffers. The resolution does not exist at the 10,000-foot level to provide outcomes for the other factors. Their study did clearly indicate that when buffers existed with no septic tanks, there was no agriculture indicated in the buffers – nutrients and all of their markers decreased. This indicates that riparian zones are very, very important to the protection of water quality.

While across the U.S. people have talked considerably about quantity, there were very few areas working on water quality. The Great Lakes is an area where water quality has always been important and Michigan has the opportunity to lead the way toward its assessment and protection as a global hub for water quality. With the new laboratory capabilities, we have greater capacity across the state than almost any other in terms of testing and using the data to drive decisions.

Their project does have funding to continue development of the markers and they plan to conduct a study in five watersheds at a more detailed scale to better understand what is happening on the land, the interplay between land use and rain, and what that means for public health.

In response to question from the Director, Dr. Rose advised while they have a bird marker that captures wildlife, it cross reacts with the chicken and turkey markers. The bovine marker does not react with deer, and there is a ruminant marker that could be used, but it would then require manipulation of the data. New technology could allow for measuring multiple markers simultaneously, which could also composite samples in the future. They are looking at ways to enhance the monitoring programs to most efficiently utilize funding.

Commissioner Hanson asked if a study in the UP is being considered. Dr. Rose advised they would like to conduct additional work in the UP because some of those watersheds could offer good contrast. Although funding for that area has not been forthcoming, they do recognize the technological capabilities of the two UP laboratories.

**BUDGET UPDATE: Maria Tyszkiewicz, Chief Budget/Financial Officer**

Ms. Tyszkiewicz reported the Governor’s fiscal year (FY) 2018 budget recommendation for MDARD included a total appropriation of $104.9 million, of which $56.6 million is in general funds (GF). She reviewed the department’s budget requests.
The largest increase requested is for Agriculture Development, with $2.7 million allocated for competitive grants and an incentive program for larger projects in rural areas. About $400,000 of that would support two new staff people in the field and one for exports, as well as funding to expand export activities.

There is a $1 million one-time funding request for the Wildlife Risk Mitigation Program. This is a cost share program with cattle producers in our highest-risk region of the state for bovine Tuberculosis.

We are again asking for On-Farm Produce Safety Program funding in the Food and Dairy Division. We did receive $300,000 in the current year, and we are asking for a little less than $700,000 next year to support one additional staff person and the remaining would go to MSU and the conservation districts to support training and assistance for farmers who will be affected by the rule. In addition, we requested funding for the fruit and vegetable producers who conduct GAP/GHP (Good Agricultural Practices and Good Handling Practices) inspections.

Two staff for the Right to Farm Program are needed as a result of expansions in pork production for the Clemens Food Group processing facility, increases in complaint response for urban livestock, and increases in turkey operations across the state.

One-time funding is requested for the Intercounty Drain Mapping Project, which would be a Geographic Information Systems (GIS) program that would interface with the county drain systems. A one-time contract with the locals would be negotiated to implement the project.

One-time funding of $1.5 million is requested for the Tree Fruit Commission, $750,000 for the Fair Food Network for expansion of the Double Up Food Bucks Program, and a small amount for two ongoing programs in Flint with the Genesee County Health Department to conduct local health inspections for food service establishments.

In response to inquiry from Commissioner Montri, Ms. Tyszkiewicz advised expanding to electronic processing was accomplished in Flint as part of a pilot program and the FY 2018 funding request would help expand that electronic capacity across the state. It will also be identified as a match for federal funding they are hoping to obtain. They are also leveraging private revenue for the project.

This is the initial stage of the FY 2018 budget process, and it will next be considered by the Legislature. An additional Revenue Estimating Conference will be held in May that will provide the basis for target decisions.

LEGISLATIVE UPDATE: Matt Blakely, Director of Policy Development and Legislative Affairs

Mr. Blakely advised he distributed to the Commissioners this morning an updated Legislative Status Report and will review some of the highlights.
House Bill 4186 actually corrects a definition change in the Pet Shop Act passed last fall and this will maintain the original legislative intent. The bill passed the House and should move to the Senate next week.

Senate Bills 108 and 109 are the introduction of the Urban Agriculture legislation. The department is working with Senators Hune and Warren on these bills.

Dogs on restaurant patios legislation is again being considered with Senate Bill 122 introduced by Senator O’Brien. Representative Hornberger has introduced similar legislation in House Bill 4187. Differences are being examined, as well as understanding what they are attempting to accomplish.

The Director gave a presentation last week to the House Policy Committee to provide an overview of the department. She also gave a presentation in both the House and Senate Appropriations Subcommittees. The Senate Policy Committee has yet to meet.

Ms. Ayers will forward an electronic version of the report to the Commissioners, which contains hyperlinks to each piece of legislation. Additionally, Commissioners could access the legislative website at www.legislature.mi.gov for a more complete picture of where bills are moving within the process and any changes that have been made. As always, he is available if the Commissioners have any questions or comments on any of the bills.

In response to inquiry from Commissioners Kennedy and Montri, Mr. Blakely advised the department has worked with Senator Hune on the language in Senate Bill 108 and further review is needed to determine if there are any changes from previous versions. Senator Warren has had an interest in this issue and the department worked directly with her on the drafting of her bill. He is working to gain a more complete picture of how these two bills interact. The timeline is not yet known; however, he is attempting to gain a perspective of Senator Hune’s priorities.

PUBLIC COMMENT
No public comment on non-agenda items was requested.

ADJOURN

MOTION: COMMISSIONER KENNEDY MOVED TO ADJOURN THE MEETING. COMMISSIONER HANSON SECONDED. MOTION CARRIED.

There being no further business, the meeting adjourned at 11:45 a.m.

Attachments:
A) Agenda
B) Agriculture and Rural Development Commission Meeting Minutes January 25, 2017
C) Director Jamie Clover Adams – Issues of Interest Report
D) A Saginaw Bay Watershed Model Presentation
E) Managing Water Resources in Michigan by Watershed Presentation
F) Farmer-Led Watershed Conservation
G) Source Tracking and Water Quality in Michigan
H) MDARD FY 2018 Governor’s Budget Recommendation
I) Legislative Status – February 2017