



Michigan Water Use Program



Abigail Eaton
Environmental Stewardship Division

A Brief History of WUR in Michigan

- 1985 Great Lakes Charter
 - Called for common base of data – water use reporting
 - 1995 Michigan began collecting data, full compliance, incorporating agriculture in 2004
- 2001 Great Lakes Charter Annex (Annex 2001)
 - Commitment to create a program for the management and regulation of new or increased large withdrawals to ensure they will not result in significant impacts to the waters of the Great Lakes Basin
- 2008 Great Lakes Compact
 - Legally binding, implements Charter and Annex goals
 - Includes a ban on new diversions of water outside the Basin

A Brief History of WUR in Michigan – cont'd

All Water Users having a capacity to withdraw water quantities averaging 100,000 gallons per day (70 gallons/ minute) must report on an annual basis to:

- Agricultural user – to MDEQ or MDARD. No fee if reporting to MDARD
<https://milogin.michigan.gov/>.
- All other industries – to EGLE with an associated fee of \$200. <http://www.egle.state.mi.us/wur/>.



Evolution of WUR in MI

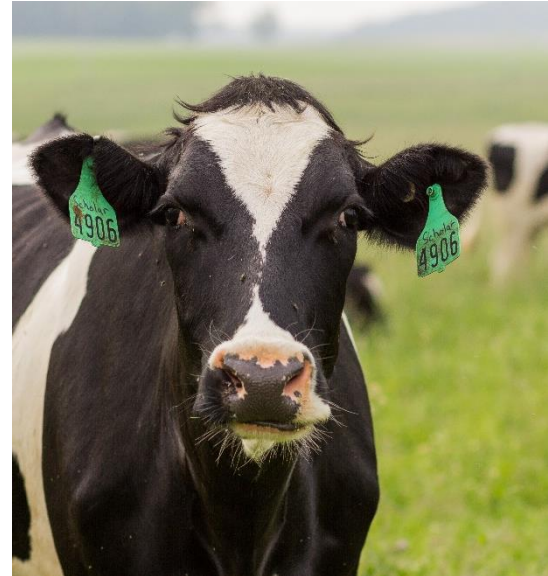
Michigan's solution for the G.L. Compact is to ensure no significant impacts to waters of Great Lakes Basin:

- 2009 - Environmental impact standard of preserving current stream and river ecology (WWAT, SSR, and ARI)
- Must be met for all new or increased large quantity withdrawals
- New proposed wells/ pumps, OR EXISTING PUMPS THAT HAVE NEVER REPORTED, must now consult a WWAT (www.egle.state.mi.us/wwat) to register their pump prior to installation and/or subsequent reporting.



Basic Timeline - Reporting versus Registration

- Ag LQW Water Use Reporting has been required since 2004
- Pumps reported prior to 2009 are considered de facto “registered”
- New/Increased large quantity withdrawals installed after 2009 must use the WWAT to register prior to installation/ use.
- Pumps that existed prior to 2009 but were never reported must now also register through the WWAT.



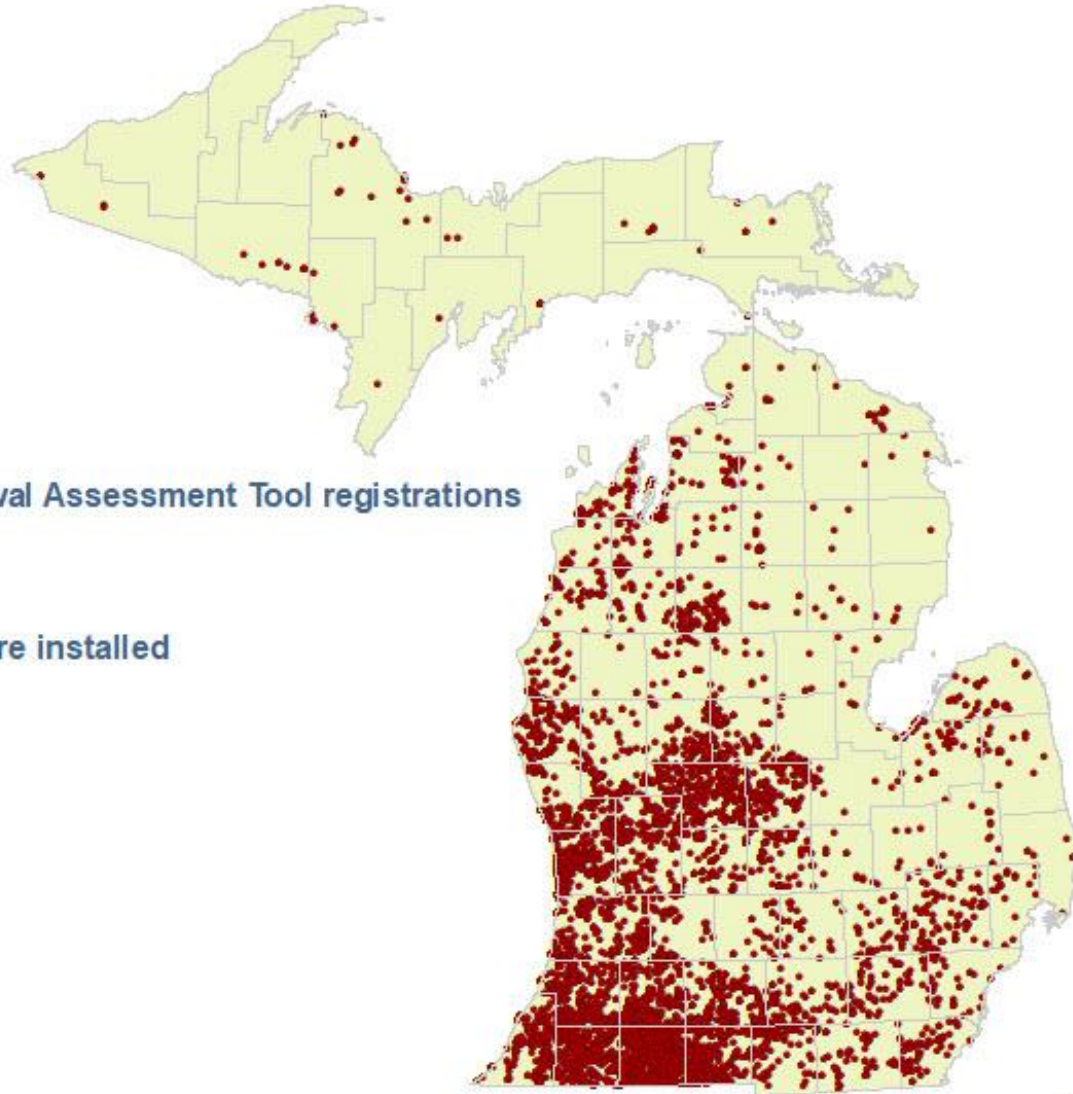
Agriculture WUR Program Snippet from 2018

Statewide

- 7,593 pumps
- 77% Groundwater
- 23% Surface Water
- 512,838 Irrigated Acres
- 113 billion gallons (175 bg in 2012)
- 347,923 acre feet



Water Withdrawal Registrations



6,215 Water Withdrawal Assessment Tool registrations

7/9/2009 - 6/22/2021

Not all registrations are installed

Metamorphosis of Agricultural WUR

- 2004-2012: Paper submissions.
 - Variable individual data from year to year.
 - Inconsistencies for transcription to the database.
- 2012-2017: First iteration of on-line reporting.
 - Ability to transfer pumps with change of ownership/leasing not included.
- 2018-2020: Second iteration.
 - Rebuild fixed transfer issue
 - Not user-friendly
 - Access issues through MILogin has disenfranchised users.
 - 250 fewer submissions during this period
- 2021-2022: System Overhaul.
 - Will likely include both on-line and paper reporting options

MILogin for Citizens



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MILogin for Citizens

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Home Page of Abigail Eaton

⌘ Your password will expire in **267** days

Access your applications by clicking on the application links below



Michigan Department of Agriculture & Rural Development (MDARD)

Water Usage Reporting (WUR)



Farm

Select a Farm

Add New Farm

*Name

*Address

*City

*State

*Zip

Save

Remove Farm

Reset Farm

Pumps

Pump

Select a Pump

Add New Pump

*Name

*County

*Township

*Capacity

 GPM

*Source Code

WWAT ID

- Installed before July 2009
- Existing/Transferred Pump

*Bought/Leased From



Reporting

Active but not used this year

Water Volume for All Uses in 2018 for pump 'coffman 2'

Gallons Acre-Inches

January <input type="text" value="0 gal"/>	February <input type="text" value="0 gal"/>	March <input type="text" value="0 gal"/>	April <input type="text" value="0 gal"/>	May <input type="text" value="1000000 gal"/>	June <input type="text" value="2250000 gal"/>
July <input type="text" value="4000000 gal"/>	August <input type="text" value="4500000 gal"/>	September <input type="text" value="1000000 gal"/>	October <input type="text" value="15000 gal"/>	November <input type="text" value="0 gal"/>	December <input type="text" value="0 gal"/>

Water Use (At least ONE water use must be reported for this pump if it was active)

*Use	Acreage	
Beans, Green	<input type="text" value="10"/>	<input type="button" value="🗑"/>
*Use	Acreage	
Peppers	<input type="text" value="15"/>	<input type="button" value="🗑"/>
*Use	Acreage	
Vegetables, Other	<input type="text" value="30"/>	<input type="button" value="🗑"/>
*Use	Acreage	
Crop, Washing	<input type="text" value="0"/>	<input type="button" value="🗑"/>

Add New Use

Clear Save Reset Reporting

Reporting

Reporting

Active but not used this year

Water Volume for All Uses in 2018 for pump 'coffman 1'

Gallons Acre-Inches

January

Acre Inch

February

Acre Inch

March

Acre Inch

April

Acre Inch

May

Acre Inch

June

Acre Inch

July

Acre Inch

August

Acre Inch

September

Acre Inch

October

Acre Inch

November

Acre Inch

December

Acre Inch

Water Use (At least ONE water use must be reported for this pump if it was active)

*Use

Corn, Seed

Acreage

30



Add New Use

Conservation Practices

Conservation Practices

System Management

- Determine all water applications accurately
- Monitor pumping plant efficiency
- Evaluate the irrigation system uniformity
- Maintain the irrigation system in good working condition
- Operate sprinkler systems to minimize drift and off-target application
- Ensure sprinkler nozzle/drip applicator flow rates are matched to the infiltration rate of the soil

Record Keeping

- For each crop irrigated, keep records on the crop type and location
- Keep records on the source of the water used
- Record date and amount of each irrigation water application
- Keep records on all system inspections and repairs that influence uniformity and leaks
- Regularly calibrate fertigation and chemigation equipment, if used, and maintain records
- Keep records of the results each time the sprinkler system uniformity is evaluated

Irrigation Scheduling

- Know the available soil water for each unit scheduled
- Know the depth of rooting for each crop irrigated
- Use container capacity in scheduling irrigation for container grown nursery or greenhouse crops
- Know the allowable soil/substrate moisture depletion at each stage of crop growth
- Measure, estimate, or use published evapotranspiration data to determine crop water use
- Measure rainfall in each field irrigated and adjust irrigation schedule/amount accordingly

Application Practices

- Choose irrigation application amounts that will avoid surface runoff under sprinkler irrigation
- In the case of container irrigation, runoff is managed through recycling or proper disposal systems
- Assure that sprinkler application rates are below the soil/substrate infiltration rate
- When irrigation is used, split nitrogen fertilizer applications
- Incorporate appropriate backflow-prevention safety devices if a chemigation/fertigation system is used
- Avoid applying more water than needed to replace the soil/substrate moisture deficit

No Practices Utilized

- No water conservation practices were utilized for this reporting year

Save

Reset Conservation Practices

Reporting Year

Select Year ▼

View Past Report

Save

Preview Report

Submit



MICHIGAN DEPARTMENT OF
ENVIRONMENT, GREAT LAKES, AND ENERGY

Water Withdrawal Assessment Process

Jim Milne

Water Use Assessment Unit Supervisor

June 23, 2021

Outline

- Water Use Program Purpose
- Great Lakes Compact
- Part 327
- Authorized Withdrawals
- Total & Consumptive Water Use
- SSR Timeliness
- What Works Well
- Water Use Advisory Council
- Questions



Water Use Program Purpose

- Register large quantity withdrawals
- Collect annual water use data
- Determinations on potential impacts to water resources as a result of proposed withdrawals
- Processing water withdrawal permits

Great Lakes Compact

- Compact among the 8 Great Lakes Basin states
- Parallel agreement with Ontario & Quebec
- Prohibits diversions outside the Great Lakes Basin
- Prevent adverse resource impacts
- Each member state & province must regulate its internal water resources
- Surface water and groundwater are interconnected parts of a single hydrologic cycle
- Part 327 is Michigan's statute to administer the Compact

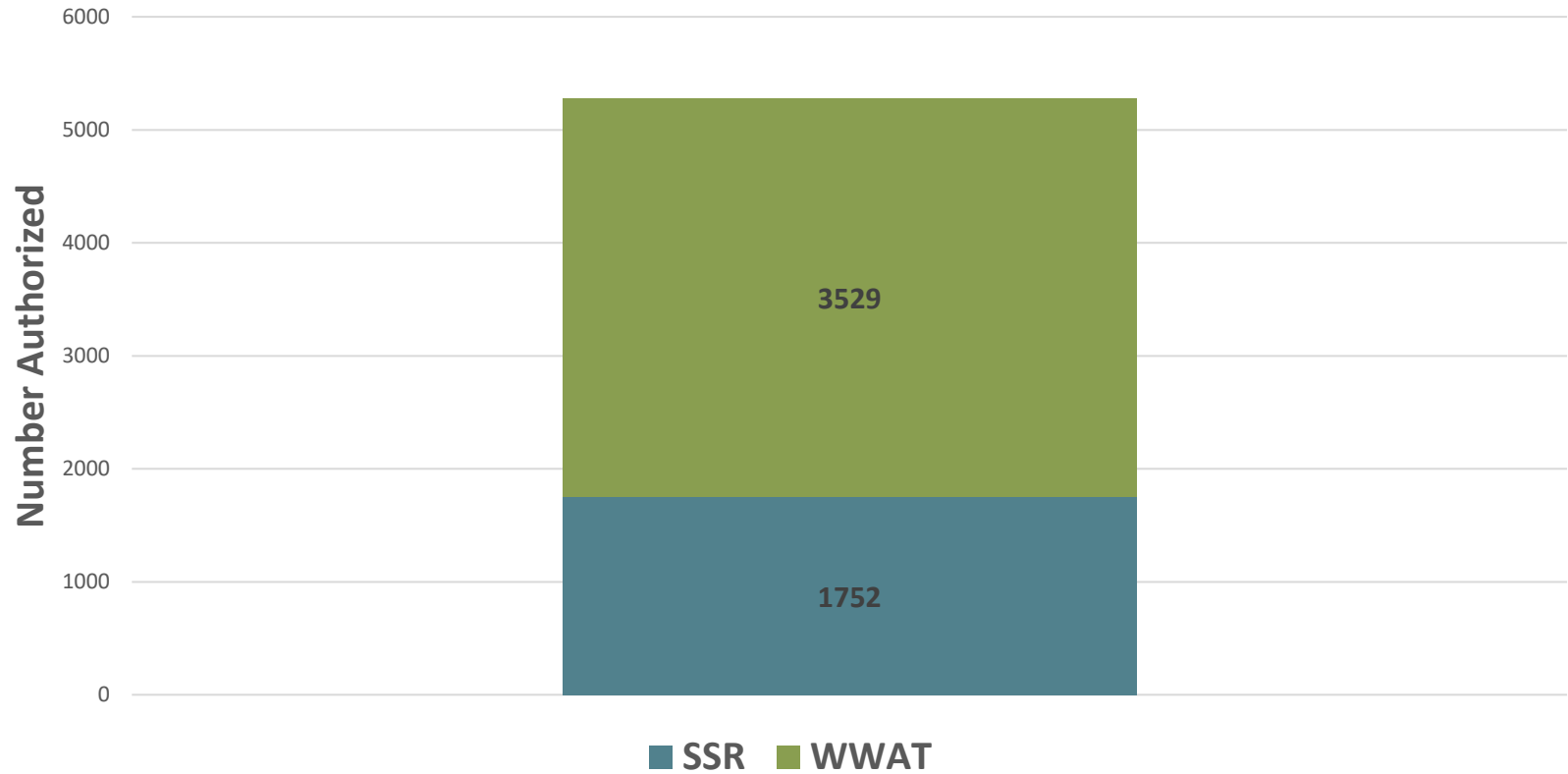
Part 327, Great Lakes Preservation

- Baseline capacity reported < 4/1/2009
- New or increased withdrawals > 100,000 gallons per day
- 70 gallons per minute rated pump capacity
- New or increased withdrawals register using Water Withdrawal Assessment Tool (WWAT)
- Site-specific reviews (SSR)
- Alternative analysis
- New or increased withdrawals > 2 MGD require permit
- Prohibits diversions
- Prohibits adverse resource impacts

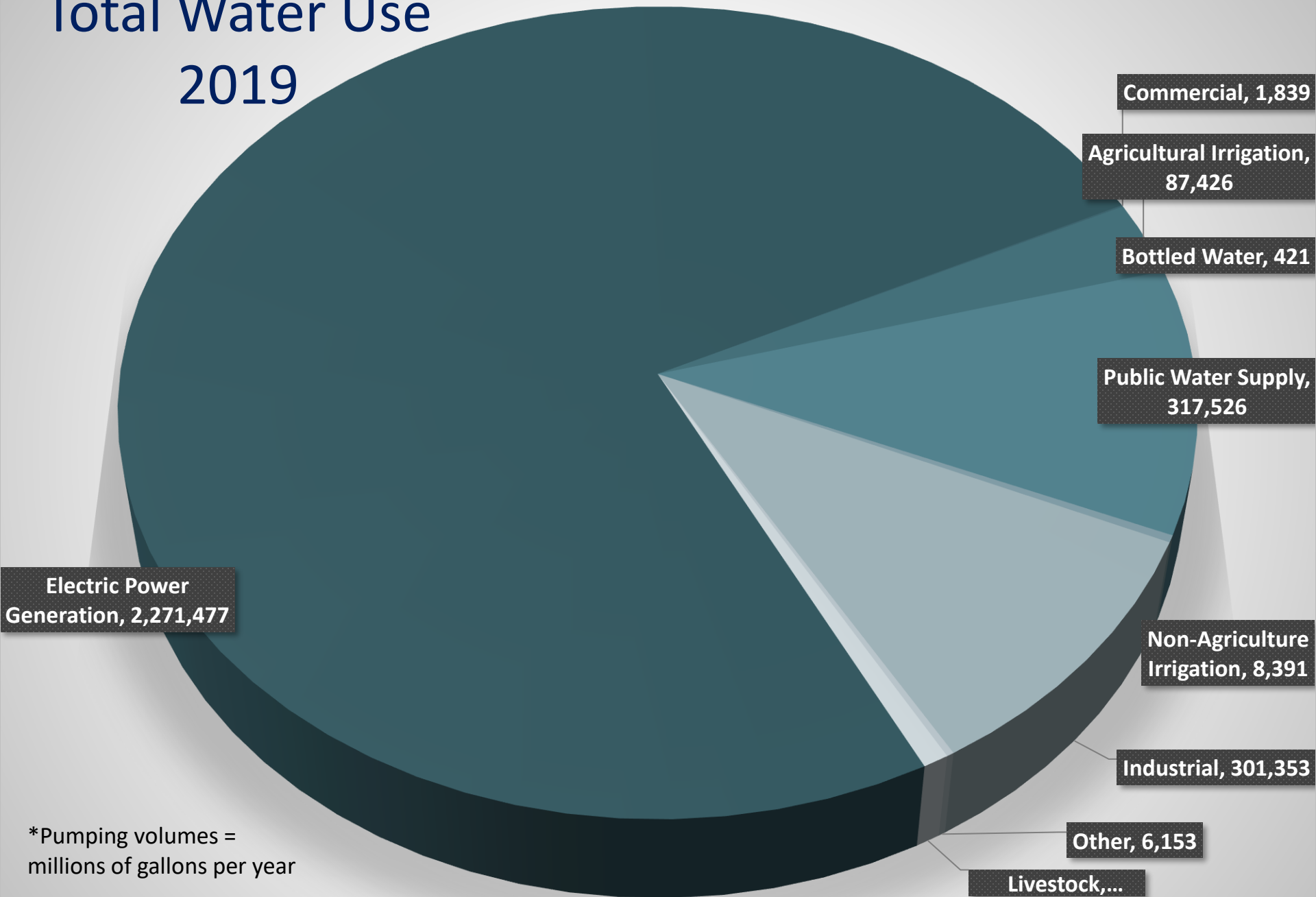


LQWs Authorized

LQWs Authorized: WWAT & SSR

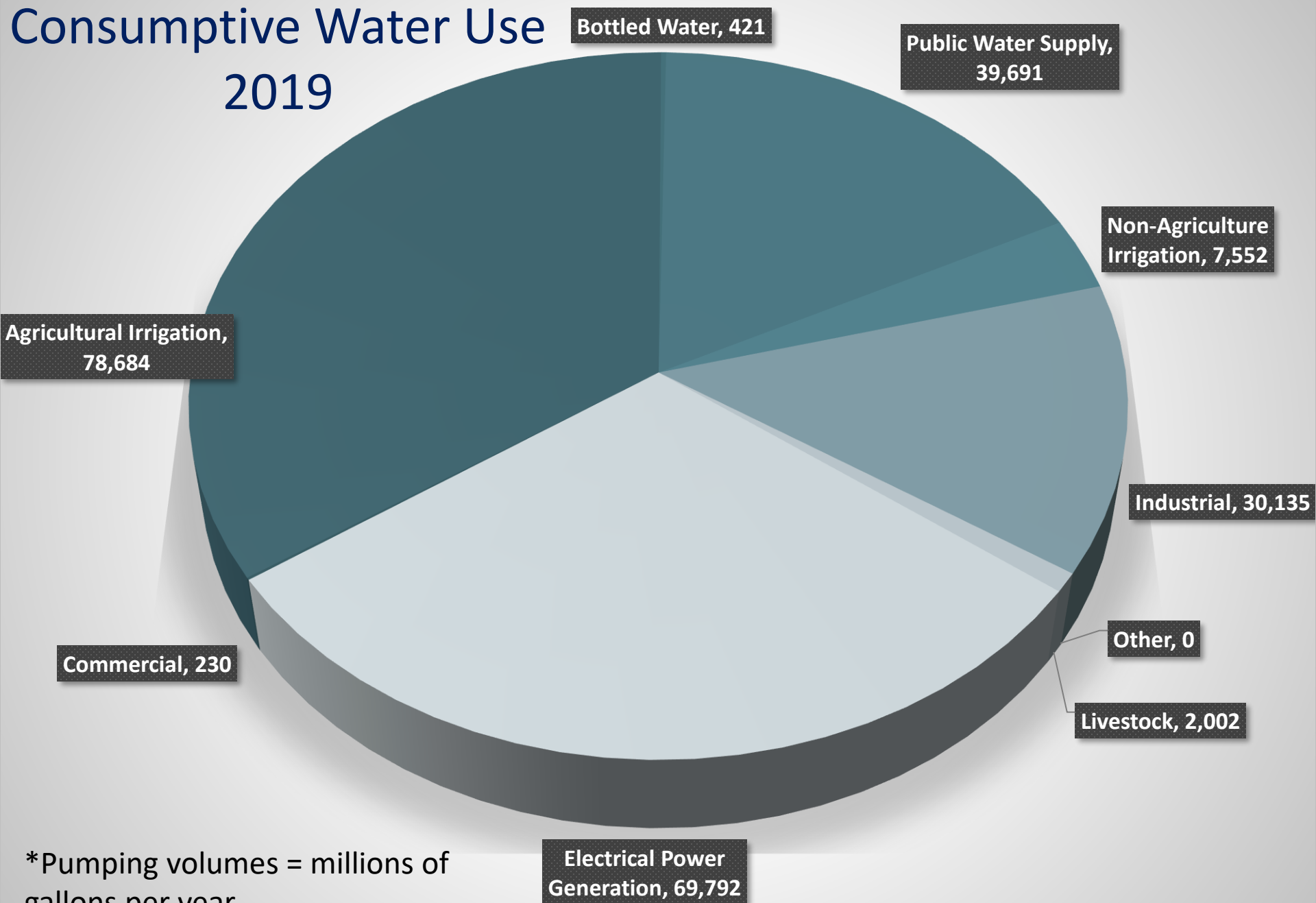


Total Water Use 2019



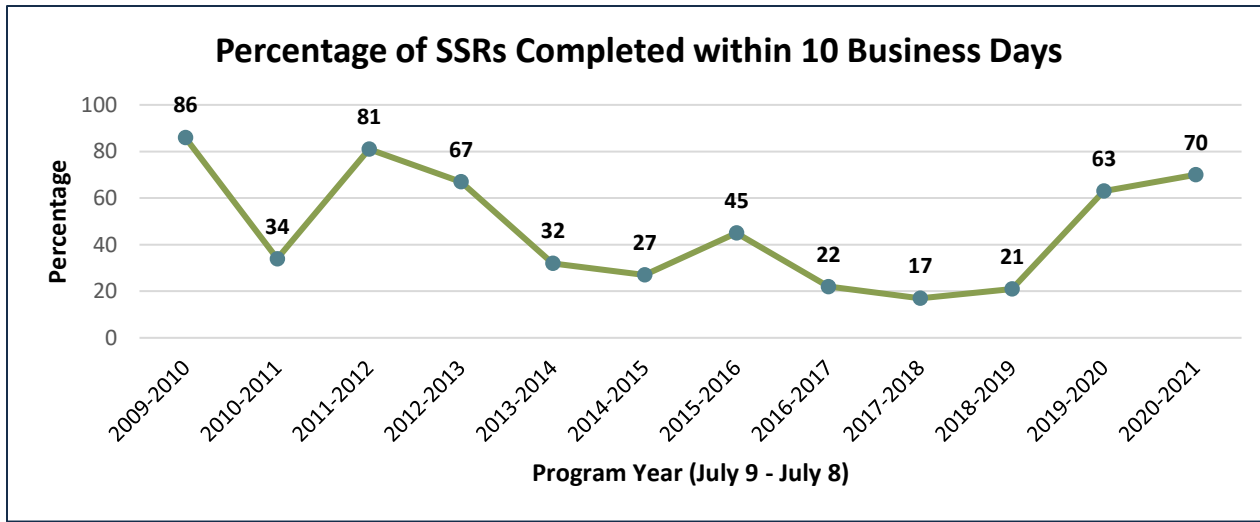
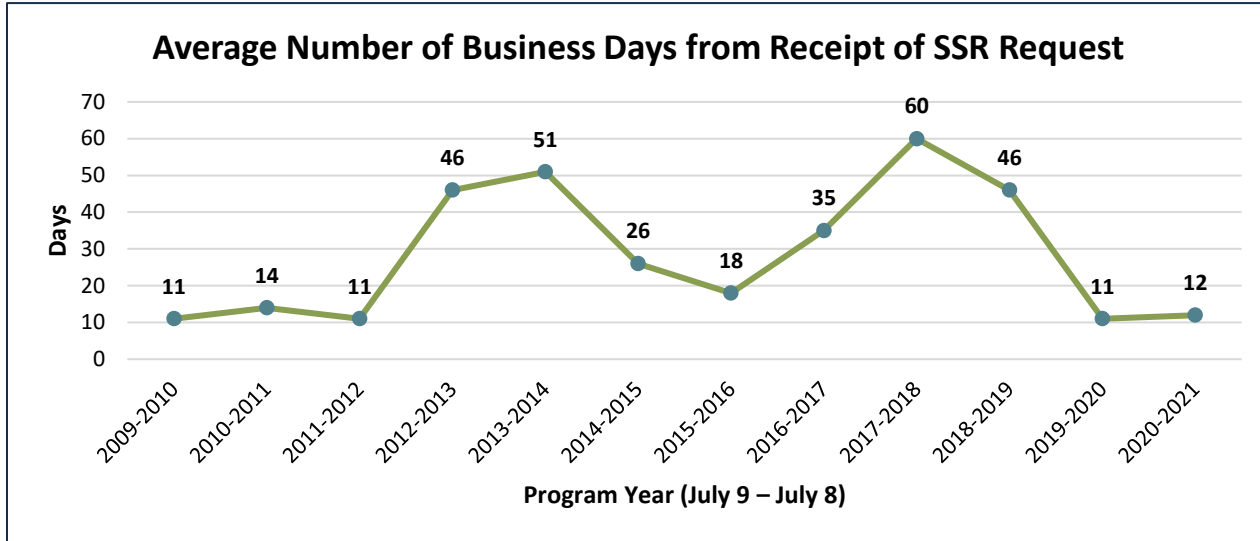
*Pumping volumes =
millions of gallons per year

Consumptive Water Use 2019



*Pumping volumes = millions of gallons per year

SSR Timeliness



What Works Well

- WWAT Screening Tool
- Improving SSR Timeliness
- 10 FTEs—Program Fully Staffed
- Collaboration w/ State, Federal, Universities
- Great Lakes Compact
- Water Use Advisory Council
- Partnerships for Education & Outreach

Water Use Advisory Council

- External Stakeholder Group
- Advises Quality of Life Agencies on Water Use Program
- Previous Versions Convened by DEQ Director
- Part 328 codified WUAC in 2018
- Advises legislature & state agencies
- Comply with the Open Meetings Act for transparency
- Biennial reports to legislature
- First biennial report presented in December 2020

Water Use Advisory Council Report

Recommendations in areas including:

- Water Conservation
- Improve Current Operations & Data Collection
- New Operations to Improve Data Collection & Modeling
- Additional Activities to Improve Data Collection & Modeling
- New & Ongoing Activities Not Requiring Additional Funding

MICHIGAN WATER USE
ADVISORY COUNCIL
2020 REPORT

DECEMBER 2020



Questions?



Abigail Eaton

Environmental Stewardship Division

Michigan Department of Agriculture and
Rural Development

Jim Milne

Water Resources Division

Department of Environment, Great Lakes,
and Energy