

**Oakland CDC MS4
NPDES Permit No. MI0060089
FY 2022 and 2023
Measurables
(October 1, 2021 - September 30, 2023)**

Public Participation Program (PPP)

Stormwater Management Plan (SWMP) Homepage	<p>The Oakland County Stormwater Management Plan (SWMP) is available on the WRC's SWMP website at: https://oakgov.com/government/water-resources-commissioner/stormwater/stormwater-management-program-swmp</p> <p>As of FY 2023, no comments have been received on the County's SWMP.</p> <p>There were 1,070 hits to the SWMP website in FY 2022 and 581 website hits in FY 2023.</p>
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Public Education Plan

Bulletin Boards	<p>Throughout FY 2022/2023, the WRC had a variety of information related to storm drain awareness on display in its main lobby. Information on the "Seven Simple Steps to Clean Water", and copies of the "Waterfront Wisdom" Booklet, "Kids Clean Water Calendar" and "Oakland County 24-Hour Pollution Hotline" brochure are available year-round. The Alliance of Rouge Communities developed a variety of seasonal posters on protecting water quality with tips to consider for spring, summer, winter and fall. That poster was framed and hung in the WRC lobby beginning in FY 2017 and is rotated out seasonally.</p>
Commercial, Industrial and Institutional Entities Stormwater Education	<p>The WRC added information on its website on pollution prevention best practices information for commercial, industrial and institutional properties in FY 2022. Best management practices to prevent nonpoint source pollution from machine shops, food service companies, composting facilities, concrete washout areas, marinas and general boating, commercial car washes, landscaping and lawn care, auto care facilities, school properties, homeowner associations and general businesses is accessible on WRC's website at: https://www.oakgov.com/government/water-resources-commissioner/resources/education/pollution-prevention-for-commercial-industrial-and-institutional-properties.</p> <p>In FY 2022, there were 89 website hits and 94 website hits in FY 2023.</p>
Dirt Doctors Program	<p>-Approximately 2,749 students and adults and 61 teachers in 283+ different presentations at 12 different events were reached in FY 2022. The Dirt Doctors attended events in Ann Arbor, Bloomfield Hills, Detroit, Farmington, Macomb, Pontiac, Rochester Hills, and Royal Oak.</p> <p>-Approximately 3,300 students, adults and teachers in 660+ different presentations at 14 different events were reached in FY 2023. The Dirt Doctors attended events in Ann Arbor, Bloomfield Hills, Detroit, Macomb, Pontiac, Rochester Hills, Royal Oak, Walled Lake and West Bloomfield Twp.</p> <p>-A pre-recorded Dirt Doctors program was put together in September 2020 and as of September 30, 2023, it has been viewed 221 times. The pre-recorded program is available online at: https://www.youtube.com/watch?list=PLxN0wQGF96CL-c9anor-74HawzUbgXk61&v=aOOQjrSD8vg&feature=youtu.be</p> <p>-There were no pre-/post-surveys for the program disseminated in FY 2022 or 2023.</p> <p>All of WRC's Environmental Education program descriptions are available on its website at: https://oakgov.com/government/water-resources-commissioner/resources/education/educational-school-programs. In FY 2022, the site received 246 visits and in FY 2023 it received 188 visits.</p>
Drain Detectives Program	<p>-There were no Drain Detectives programs requested in FY 2022. There were eight (8) presentations of the Drain Detectives in FY 2023 at the Detroit River Water Festival on Belle Isle in Detroit reaching approximately 208 4th and 5th grade students and 8 teachers.</p> <p>All of WRC's Environmental Education program descriptions are available on its website at: https://oakgov.com/government/water-resources-commissioner/resources/education/educational-school-programs. In FY 2022, the site received 246 visits and in FY 2023 it received 188 visits.</p>

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E-newsletter Articles	<p>The WRC's E-Newsletter reaches nearly 2,650 individuals via e-mail and includes the following groups:</p> <ul style="list-style-type: none"> -State Representatives -State Senators -SWAGs -County Commissioners -City Council members including Mayors (that we have emails for) -Township & Village Trustees/Council (that we have emails for) -Township Supervisors -Township Clerks -Township & City Treasurers -WRC Staff -Media contacts (small list) -Folks that have signed up for various updates on our WRC web site subpages (a lot of overlapping emails and a number of CVT DPW folks) <p>-In FY 2022/2023, two (2) "In the Flow" Employee Newsletters were distributed to approximately 318 WRC staff and available upon request. The 2022 and 2023 Kids' Clean Water Calendar contest was highlighted in the Winter 2021/Spring 2022 and 2022/Spring 2023 Editions.</p> <p>-In FY 2022/2023, WRC distributed three (3) E-newsletters. Digital copies of the E-newsletters are available upon request.</p>
Enviroscape Watershed Model Program	<p>WRC:</p> <ul style="list-style-type: none"> '-Approximately 34 students, teachers and Girl Scout leaders in two (2) different presentations at two (2) different events were reached in FY 2022. In addition, the Rouge River Water Festival was held virtually for 47 classrooms and 1,062 students and the virtual Watershed Model Demonstration link was shared with teachers. -WRC staff presented the Enviroscape watershed model at events in Oxford and Novi. -There were no pre- or post-evaluations administered in FY 2022. <p>In FY 2023, the program reached more than 1,064 students, teachers and parents in more than 118 presentations at four different events in Bloomfield Hills, Rochester Hills and Walled Lake. There were no pre- or post-evaluations administered in FY 2023.</p> <p>In order to reach people virtually, a 32 minute pre-recorded Enviroscape Watershed Model demonstration was created in September 2020 and is available online at: https://www.youtube.com/watch?list=PLxN0wQGF96CL-c9anor-74HawzUbgXk61&v=iplgsx1Zvc&feature=youtu.be. As of September 30, 2023, the video has been viewed 448 times.</p> <p>All of WRC's Environmental Education program descriptions are available on its website at: https://oakgov.com/government/water-resources-commissioner/resources/education/educational-school-programs. In FY 2022, the site received 246 visits and in FY 2023 it received 188 visits.</p>
Electronics Recycling Event	<p>There were three (3) free document shredding and electronics recycling events in Oakland County in FY 2022 and 2023: April 20, 2022 in Waterford, Aug. 15, 2022 in Southfield and Oct. 5, 2022 in Madison Heights. Details can be found on Oakland County's blog at: https://oaklandcountyblog.com/2022/04/18/free-document-shredding-and-electronics-recycling-for-oakland-county-residents/#more-50994</p>

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Green Stormwater Infrastructure (GSI) Education

The WRC hosts a website on GSI: <https://oakgov.com/government/water-resources-commissioner/stormwater/green-infrastructure>
-There were **201** website hits in FY2022 and **333** in FY2023 to the GSI website.

'In FY 2022, the 1st annual Master Rain Gardener Certification Program was held virtually from Mar, 3, 2022 - April 7, 2022. The course is taught virtually, with in person rain garden tours, with many project partners including: Washtenaw County Water Resources, Huron River Watershed Council, Friends of the Rouge, River Raisin Watershed Council, Clinton River Watershed Council, Oakland County Water Resources, Friends of the Detroit River, and the Clinton-Oakland Metroparks. There were a total of 82 participants in the 2022 virtual class from the following watersheds: Rouge: 29; Huron: 18; Clinton: 10; Raisin: 2; Detroit: 6; Other: 17. Nineteen (19) of the participants resided in Oakland County.

In FY2023, the 2nd annual Master Rain Gardener Certification Program was held virtually from Feb. 23 - March 23, 2023. The course is taught virtually, with in person rain garden tours, with many project partners including: Washtenaw County Water Resources, Huron River Watershed Council, Friends of the Rouge, River Raisin Watershed Council, Saline Be Green, City of Ann Arbor, Clinton River Watershed Council, Oakland County Water Resources, Friends of the Detroit River, Alliance of Downriver Watersheds, and the Clinton-Oakland Metroparks. There were a total of 70 participants in the 2023 virtual class from the following watersheds: Rouge: 16; Huron: 24; Clinton: 9; Raisin: 3; Detroit: 9; Other: 9. Thirteen (13) of the participants resided in Oakland County.

More information about the program can be found online at: www.MasterRainGardener.org.

A mapping application developed by Washtenaw County is available to view projects submitted by those that have installed rain barrels, rain gardens, native plant gardens and more at: <https://gisappsecure.ewashtenaw.org/public/rainscaping/?page=Home>
As of FY 2023, a total of 426,800 gallons of stormwater are managed annually in Oakland County via 101 green infrastructure practices (rain gardens and rain barrels) that have been installed and mapped through the application.

In FY 2023, MSU-Extension authored an article about GSI and Building Sustainable and Resilient Communities in the July 2023 edition of the Oakland Lakefront Lifestyles magazine. The article is provided in **Appendix 1**. It highlighted the connection of nonpoint source pollution sources and best practices for the homeowner, and waterfront property owners, to reduce pollution associated with stormwater runoff.

Oakland County hosts a website with a host of education resources on native plants and their benefits at: <https://www.oakgov.com/community/oakland-county-parks/get-involved/native-plant-information>. In FY 2022, there were **241** website hits.

Household Hazardous Waste Information

In FY 2022, the Oakland County Planning & Local Business Development Dept. sponsored four (4) household hazardous waste disposal days: April 30, June 4, July 23 and September 24, 2022. The April 30 and September 24 collection events were held at the Oakland County Service Center in Pontiac, June 4 at Oxford Middle School in Oxford and July 23 at Kensington Church in Orion Township. A total of 641,797 pounds of household hazardous waste was collected during the four collection events.

In FY 2023, the Oakland County Planning & Local Business Development Dept. sponsored four (4) household hazardous waste disposal days: April 29, June 3, July 22 and September 16, 2023. The April 29th event was held at Pine Knob Music Theatre in Independence Twp; the June 3rd event was held at Oxford Middle School in Oxford, the July 22nd event was held at Kensington Church in Orion Township and the September 16th event was held at the Oakland County Service Center in Pontiac. A total of 507,324 pounds of household hazardous waste was collected during the four collection events.

Since the program began in 2003, residents of almost 69,000 households have disposed of more than 9 million pounds of hazardous materials which have been recycled or disposed of properly.

Information on household hazardous waste disposal in Oakland County is available online at: www.nohaz.com.

There were **35,755** website hits in FY 2022 and **29,327** website hits in FY 2023 to the County's Household Hazardous Waste Recycling Information.

There are two solid waste authorities in the southern portion of the county that handle the waste for several member communities. One of these authorities holds several household hazardous waste collection events for residents, while the other offers year-round service for residents of its member communities.

A few communities offer their own collection events each year.

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<p>Inland Lake Education Program</p>	<p>MSU-Extension: Several educational programs were held on understanding lake ecology and the importance of natural shorelines on inland lakes. Programs were held for lake residents, natural resource professionals, lake managers, elected and appointed government officials, and educators. The Introduction to Lakes Online course ran two times, once between January- March 2022 with 61 out of 524 participants from Oakland County and January- March 2023 with 31 of 317 participants from Oakland County. Topics included lake ecology, watersheds, shorelines, water law, aquatic plants, and citizen involvement. There were also three live chat sessions during each course. See Appendix 2 impact report, "Online Program increases Stewardship of Inland Lakes."</p> <p>Lake ecosystem content was also included in the virtual Michigan Conservation Stewards Programs held in Fall 2021 in which 42 individuals were enrolled in the Oakland cohort. See MCSP section below for details.</p> <p>A Michigan Natural Shoreline Partnership training (days of in-class training and one summer field installation day) for contractors was held at Camp Petosega in Alanson, Michigan on 10/19/2022 through 10/21/2022 to train shoreline contractors how to design and install natural shorelines on inland lakes. Another training was held on March 6-7, 2023 at Michigan State University with field demonstration taking place on June 6 in Paw Paw, MI on Paw Paw Lake in which 26 participants were trained.</p> <p>During FY2022-3, the following number of lakes in Oakland County were enrolled in the Cooperative Lakes Monitoring program each year: 2021 (21); 2022 (22); 2023 (25) . Full information about the Cooperative Lakes Monitoring Program can be found here: https://micorps.net/lake-monitoring/.</p> <p>In 2023, the Clean Boats, Clean Waters Program, funded through the Great Lakes Initiative and is a partnership between MSU Extension and the Michigan Department of Great Lakes and Energy, awarded up to \$3,000 to organizations communicating aquatic invasive species prevention information through outreach materials and in-person educational events to boaters. In 2023, the Lakeville Property Owners Association received funding to support installing a CD3 roadside boat cleaning station at the Lakeville Lake DNR Boat launch, hosting educational events, and sharing information and resources with property owners.</p> <p>MSU-Extension hosts a website dedicated to learning all about Michigan inland lakes at: https://www.canr.msu.edu/michiganlakes/online-learning</p>
<p>Interpretive Signage</p>	<p>OCPRC: In FY 2022, OCPR Maintained Aquatic Invasive Species (AIS) Interpretive Signs at Addison Oaks, Groveland Oaks, Highland Oaks, Independence Oaks, Orion Oaks and Rose Oaks - all parks with fishing access. Interpretive signage detailing a CMI-funded Waterford Oaks Stormwater Improvements Project and associated BMPs installed at the park were also maintained. Brochures regarding state boating law changes related to AIS continued to be distributed and permanent stand holders were installed at Addison Oaks and Independence Oaks with AIS information. Additionally, a stormwater-specific brochure was created to support ongoing efforts at Springfield Oaks to update stormwater infrastructure, that brochure was distributed to the public via the Oakland County Fair staff.</p>
<p>Invasive Species Management and</p>	<p>OCPRC: OCPR maintains a sizable invasive species management program within the Natural Resources Department, responsible for strategic management of invasive species throughout the park system's 6,800 acres.</p> <p>OCPR holds blanket contracts with aquatic spray and biocontrol contractors for the purposes of combating identified locations of aquatic invasive species inhibiting recreational use or ecological health of OCPR's inland lakes. Blanket contracts for upland invasive species control are also held.</p> <p>As part of OCPRC's invasive species management program, OCPRC requires contractors involved in natural resource vegetation management to perform equipment-cleaning good housekeeping practices to limit the introduction and spread of upland and aquatic invasives in park natural areas.</p> <p>In FY 2022, approximately 1,800 acres of invasive species were treated. In FY 2023, approximately 1,408 acres of invasive species were treated.</p> <p>The Oakland County CISMA is a partnership of county and local governments, non-profit organizations and universities with a focus on managing the spread of numerous invasive species. Information on the Oakland County Cooperative Invasive Species Management Area (CISMA) is available online at: https://www.michiganinvasives.org/occisma/, https://oaklandinvasivespecies.org/, and at https://www.sixriversrlc.org/oakland-county-cisma.</p> <p>OCFM: FY 2022 - continued mowing of European Buckthorn seedlings and phragmites. FY 2023 - continued mowing of European Buckthorn seedlings and phragmites.</p>

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Education and Outreach	<p>WRC: In FY 2022 and 2023, the WRC treated the following drains and basins for <i>Phragmites australis</i> and/or Canada Thistle: Caddell Drain and associated North and South Basins - Farmington Hills - 5.58 acres Minnow Pond Detention Pond - Farmington Hills - 2.76 acres Tribute Drain Basins - Wixom - 1.9 acres Bloomfield Pines Drain Basin 7 - West Bloomfield - .04 acres West Bloomfield Pines Condo Drain Basin - West Bloomfield - .03 acres Maple Creek Drain Basin A - West Bloomfield - .12 acres Hidden Creek Drain Basin - West Bloomfield - .09 acres 522 S. Opdyke Rd Basin - Pontiac - .21 acres Bishop Drain Basin - Rochester Hills - 1.52 acres Twin Lakes Drain Basin 5 - Oakland Twp - .13 acres Wyndate Basin 2 - Oakland Twp - .26 acres Barnard Drain Basins - Troy - .26 acres Sturgis Drain - Troy - .51 acres Mainland Drain - Pontiac - .79 acres Ferry Drain - Troy - .46 acres</p> <p>OCPLBD: In FY 2023, administered the Oakland County Spongy Moth Suppression Program in partnership with the Oakland County Board of Commissioners task force and MSU Extension.</p>
Kids' Clean Water Calendar Contest	<p>FY 2022: -A total of 586 children across Oakland County participated in the 2022 Kids' Clean Water Calendar Contest. -A total of 5,500 calendars were distributed across Oakland County. -Drawings were submitted from classes representing 27 schools (31 classes). There were also 26 separate entries from individual residents. An online gallery of the 2022 contest winners is available at: https://www.oakgov.com/government/water-resources-commissioner/resources/education/kids-clean-water-calendar-contest/2022-contest-gallery</p> <p>An article featuring the grand prize winner, Aditya Yogesh, Troy 4th grader, and details on the 2022 calendar contest was published in the Oakland Press: https://www.theoaklandpress.com/2022/01/23/troy-student-wins-kids-clean-water-calendar-contest/ Another article featuring the grand prize winner, Aditya Yogesh, Troy 4th grader, and details on the 2022 calendar contest was published in the Oakland County Legal News: https://www.legalnews.com/oakland/1507444 Another article featuring the grand prize winner, Aditya Yogesh, Troy 4th grader, and details on the 2022 calendar contest was published in the Royal Oak Tribune: https://www.dailytribune.com/2022/01/23/troy-student-wins-kids-clean-water-calendar-contest/ Aditya Yogesh, the 2022 Kids Clean Water Calendar Contest winner, was featured in Commissioner Nash's Water By the Quarter online show, along with WRC's Environmental Planner, Jacy Garrison, at: https://www.youtube.com/watch?v=hlygEIQINCA</p> <p>-In FY 2022, there were a total of 1,689 hits to the Calendar Contest website.</p> <p>FY 2023: -A total of 718 4th and 5th graders across Oakland County participated in the 2023 Kids' Clean Water Calendar Contest. -A total of 5,500 calendars were distributed across Oakland County. -Drawings were submitted from students representing 42 schools (41 classes) and there were also 39 separate entries from individual residents. -An online gallery of the 2023 contest winners is available at: https://www.oakgov.com/government/water-resources-commissioner/resources/education/2023-contest-gallery -In FY 2023, there were a total of 1,508 hits to the Calendar Contest website.</p> <p>2023 Calendar Press: -An article and video, featuring two-time grand prize winner, Aditya Yogesh, was published by Fox2 Detroit online at: https://www.fox2detroit.com/news/oakland-county-students-highlight-importance-of-clean-water-and-air-through-art</p>

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Lakefront Lifestyles Magazine Advertisements and Articles	<p>The Lakefront Lifestyles magazine gets mailed to 15,600 lakefront homeowners on any of 226 inland lakes in west and central Oakland County. The magazine is also reported to make 40,000 monthly ad impressions on the Lakefront website at: www.oaklandlakefront.com.</p> <p>WRC coordinated and funded the publication of the following educational advertisements in the Oakland Lakefront magazine during FY 2022/2023: April 2022/2023 - Pet Care (pet waste management) May 2022/2023 - Storm Drain Awareness (Oakland County's 24-Hour Pollution Hotline is also advertised within this ad) June 2022/2023 - Earth-friendly Landscaping (promotion of the use of native plants) July 2022 - Car Care August 2022** - Household Hazardous Waste (proper disposal and chemical alternatives) September 2022** - Septic Maintenance **NOTE: Due to a family matter, the publisher was unable to publish the August and September editions of the Lakefront Lifestyles magazine in FY 2023; therefore, only 4/6 ads were published and invoiced for FY2023.</p> <p>-A total of \$5,070.00 was spent on ads in FY 2022 (six ads at \$845 ea.) -A total of \$3,580.00 was spent on ads in FY 2023 (four ads at \$895 ea.)</p> <p>In FY 2022/2023, a total of 18 articles and ads related to water and natural resource management were published in the Lakefront Lifestyles magazine. A summary of all the ads and articles published are provided in Appendix 3.</p> <p>During FY 2022-2023, MSU Extension staff (Bindu Bhakta, Erick Elgin, Jo Latimore, Paige Filice, Beth Clawson, Lois Wolfson and Ruth Kline-Robach) published regular articles highlighting upcoming MSU Extension programs, resources and water quality protection issues relevant to residents on Oakland County lakes. Topics have included using native plants along the shoreline, maintaining septic systems, drinking water, and lake processes in the winter. Each month we highlight a relevant MSU Extension resource or upcoming program, such as the Michigan Inland Lakes Convention or Introduction to Lakes Online. Articles can be found online at: https://www.canr.msu.edu/natural_resources/index. Articles are sometimes reused for MSUE news for further distribution to continue reaching riparian landowners in Oakland County. During FY 2022-2023, MSUE Extension produced regular articles for publication in the printed format and online access for the Oakland Lakefront Lifestyles magazine. Article topics include inland lake invasive species prevention, wellhead protection, the Michigan Cooperative Lakes Monitoring Program, attracting wildlife to lake shorelines, critters in lakes, smart shoreland gardening practices, septic systems around lakes, fish behavior, oakland county lake geology, outdoor water features, swimmer's itch, groundwater, benefits of trees, microplastics, stormwater management, lake ecology, and spring lawcare tips. In 2021, 10 articles were produced. In 2022, 10 articles were produced. In 2023, 6 articles were published and further articles were discontinued due to the magazine being discontinued in Summer 2023 due to financial reasons.</p>
Lake Improvement Board Assistance	<p>-The WRC continues to serve as one of the members on designated Lake Improvement Boards. Within Oakland County, there are currently 46 Lake Improvement Boards that have been established to address relevant lake improvement issues, including the oversight of aquatic weed control programs, nuisance control and other riparian homeowner educational activities.</p> <p>WRC Lake Improvement Board meetings and related information are posted on the WRC Web site at: https://www.oakgov.com/government/water-resources-commissioner/resources/public-meetings/lake-improvement-board-meetings</p> <p>There were 469 website hits in FY 2022 and 1,131 website hits in FY 2023 to WRC's lake improvement boards website.</p>
Michigan Green Schools Program	<p>For the 2021-2022 school year, 91 Oakland County schools earned the Michigan Green School designation by participating in a minimum of 10 out of 20 environmental and/or energy saving activities. 22 of the schools received the special designation of Emerald Schools by successfully participating in 15-19 activities and 46 schools participated in 20 or more activities to earn the special designation of Evergreen status. 19 of the 28 public school districts had schools represented. In addition, 8 of the schools were recognized for participation for all 15 years of the program.</p> <p>For the 2022-2023 school year, 86 schools were designated a Michigan Green School. There were 13 schools that also received the special designation of Emerald status by successfully earning an additional 15 points for extra activities and 51 schools earned the Evergreen status, by receiving an extra 20 points. 15 of the 28 public school districts were represented in the program this year.</p> <p>Information on the program for Oakland County is available on Oakland Schools' Web site at: https://www.oakland.k12.mi.us/student-programs/environmental#:~:text=The%20Michigan%20Green%20Schools%20Program%20encourages%20public%20and%20private%20schools,designated%20a%20Michigan%20Green%20School</p>

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Natural Resources Education Program	<p>OCPRC: **See also activities described under 'workshops/seminars' and 'presentations/displays'</p> <p>OCPR continues to display and distribute OCPR 'Stop Aquatic Hitchhikers' Brochures and educational items which provide ID and control information for the top AIS found at OCPR parks and species of emerging concern including Eurasian watermilfoil, purple loosestrife, curly leaf pondweed, European Frogbit and starry stonewort. These brochures are kept and distributed via contact stations and boathouses at parks that have public boat access. OCPR also operated two mobile boat wash stations across the County from late May to late September that provided educational information about aquatic invasive species including prevention, identification and decontamination practices.</p>
Oakland County Environmental Stewardship and Water Resource Websites	<p>WRC, OCPLBD, OCPRC and MSU-Extension Oakland County maintain environmental stewardship and/or water resource information on their Web sites at: OCPLBD: https://www.oakgov.com/community/community-development/environmental-stewardship (a total of 1,306 website hits in FY 2022 and 2023) WRC: www.oakgov.com/riparian (a total of 1,545 website hits in FY 2022 and 2023) WRC 24-Hour Pollution Hotline: https://oakgov.com/government/water-resources-commissioner/stormwater/24-hour-pollution-hotline (a total of 1,209 website hits in FY 2022 and 2023) OCPRC: https://oakgov.com/community/oakland-county-parks/get-involved/natural-resources-management (a total of 1,738 website hits in FY 2022 and 2023) MSU-Extension: https://www.canr.msu.edu/natural_resources/ (a total of 241 website hits in FY 2022; no data available for FY 2023)</p> <p>In FY 2018, Oakland County Information Technology developed a Seven Simple Steps to Clean Water Story Map and that is available at: https://oakgov.maps.arcgis.com/apps/Cascade/index.html?appid=1676f95c659d408e94bf73096db93387; a link to the Story Map is on WRC's "Seven Simple Steps to Clean Water" website at: https://oakgov.com/government/water-resources-commissioner/resources/education/seven-simple-steps-to-clean-water. The page also promotes the 24-Hour Pollution Hotline and viewers can explore land use changes from 1940 vs. 2017 imagery within Oakland County.</p> <p>There were 280 website hits in FY 2022 and 184 website hits in FY 2023 to the WRC's Seven Simple Steps to Clean Water website. The Storymap received 129 website hits in FY 2022 and 100 hits in FY 2023. To date, the Storymap has received 1,000 views.</p>
Oakland County Trail Network (OakRoutes) Mapping	<p>-The OakRoutes map is available electronically at: https://www.oakgov.com/home/showpublisheddocument/44/638023898641100000. The Oakland County 24-Hr Pollution Hotline information is on this updated map.</p> <p>-The OakRoutes map and additional Regional Trail information is highlighted on an updated website available at: https://oakgov.com/community/oakland-county-parks/parks-trails/trails.</p> <p>There were 6,395 website hits in FY 2022 and 2,996 website hits in FY 2023 to OCPRC's parks and trails website.</p> <p>-In FY 2016, Oakland County IT created an interactive Trails Map that can be found at: https://oakgov.maps.arcgis.com/apps/Profile/index.html?appid=c75cbb32f63c41d4aedb51fae76f7c22. In FY 2022 and 2023, Countywide location-specific GIS updates were made to the Trail Path and Recreational Land feature classes as needed.</p> <p>In FY 2018, SEMCOG completed 360-degree Mapping of several land and water trails in Oakland County. The Southeast Michigan Trail Explorer site is available at: https://www.semco.org/trailexplorer.</p>
OCSC Facilitation and Participation	<p>WRC maintained correspondence with the OCSC via email related to permit compliance activities and information sharing.</p> <p>The County was issued its new MS4 permit from EGLE, effective January 1, 2021 and expiring on October 1, 2023. It has been extended beyond FY 2023 until the next permit is issued by EGLE which is anticipated in FY 2024.</p>
	<p>OCHD: OCHD offers a septic system installer education class that instructs on the Oakland County Sanitary Code and policies related to onsite wastewater treatment systems. The class is open to contractors wishing to complete installations in Oakland County as well as private homeowners wishing to install their own septic system. There were 11 classes totaling 70 attendees in FY 2022 and 11 classes with 54 attendees in FY2023. Renewal licenses were issued to sewage disposal system installers in FY 2022 and 241 installers in FY 2023.</p> <p>WRC: -An ad on Septic System Maintenance was published in the September 2022 issue of the Oakland Lakefront Lifestyles Magazine that reaches 15,600 lakefront property owners on 226 different inland lakes annually in Oakland County. There are also 40,000 monthly ad impressions on the Lakefront website at: www.oaklandlakefront.com.</p>

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Action/Activity	
Onsite Sewage Disposal (Septic System) Maintenance Education	<p>MSUE: Topics covered in this programming included introduction to septic systems, proper maintenance, what to do if a system fails including discussion of alternative systems along waterways, implications of onsite wastewater on Michigan's water quality, and water conservation tips to help extend the life of onsite systems. One stand-alone septic education program, Wastewater Managment along lakes: Impacts, Alternative on-lot/off-lot systems, and example septic to sewer projects in Michigan (Speakers: Larry and Mike Stephens, Michigan Onsite Recycling Association; and Joel Kwiatkowski, Bay County Heath Department. Moderator: Bindu Bhakta) was delivered to 50 participants and offered as part of the Michigan Inland Lakes Convention on September 16, 2022 (session recording can be found at: https://mediaspace.msu.edu/media/MILC+Session+21+Septic+Systems+and+Sewers/1_0u16pqci).</p> <p>In addition, septic information was provided via MSU Extension news articles and the Septic Education web site (https://www.canr.msu.edu/septic_system_education/). Septic content was included in the following FY 2022-2023 programs: Introduction to Lakes Online Courses, Extension Master Gardener Volunteer Training, and Foundations of Gardening. Several resident inquiries were also fielded on various aspects of septic system management throughout the year.</p> <p>In addition, MSUE helped plan and contribute educational sessions to the 2022 Michigan Onsite Wastewater Conference held on January 11-12, 2022 at MSU Kellogg Center and attended by 210 participants. The 2023 Conference was held on January 9-10 at MSU Kellogg Center in East Lansing and was attended by 308 participants. Conference sessions included the Michigan Saves septic loan replacement program, homeowner educational resources, and Vacation Rental Properties and Septic Systems. Finally, septic concepts were also taught to youth and adults as part of groundwater model presentations given throughout the year.</p>
Operation Medicine Cabinet	<p>There are currently 36 drop-off sites throughout Oakland County where unused pharmaceuticals can be properly disposed of, including the following: Oakland County Sheriff's offices (13) in Addison Twp, Brandon Twp, Commerce Twp, Highland Twp, Independence Twp, Lyon Twp, Oakland Twp, Orion Twp, Oxford Twp, Pontiac, Rochester Hills and Springfield Twp; additionally, partner law enforcement agencies Auburn Hills PD, Beverly Hills Village Dept. of Public Safety, Birmingham PD, Bloomfield Hills Dept. of Public Safety, Bloomfield Twp. PD, Clawson PD, Farmington Hills PD, Ferndale PD, Franklin PD, Hazel Park PD, Holly PD, Huntington Woods Dept. of Public Safety, Keego Harbor PD, Madison Heights PD, Oak Park PD, Orchard Lake PD, Oxford Village PD, Rochester PD, Royal Oak PD, South Lyon PD, Troy PD, West Bloomfield PD, White Lake PD and Wixom, who all serve as OMC drop-off sites.</p> <p>New in FY 2017, a GIS-based online application is available for the public to see drop-off sites throughout the county and is available at: https://oakgov.maps.arcgis.com/apps/webappviewer/index.html?id=db4052d9ca5c4e1798a7dfd2a54e3c25.</p> <p>There were 1,613 website hits in FY 2022 and 1,232 in FY 2023 to the Operation Medicine Cabinet website at: https://www.oakgov.com/government/sheriff/community-services/domestic-safety/-fsiteid-1#!/.</p>
	<p>WRC: -WRC provided displays for four (4) events in FY 2022 that highlighted the public education programs and water resource-related programs offered by Oakland County. The events were held in Novi, Pontiac, Royal Oak, and Southfield. -New in FY 2010, the WRC instituted a Speaker's Bureau where interested people can ask for a WRC representative to come and talk to their civic group about one of many aspects of the work we do at WRC (with a focus on our wastewater and stormwater management programs). In FY 2022 and 2023, Commissioner Nash participated in 57 speaking engagements, reaching more than 3,200 people (and likely many more that weren't trackable due to public broadcasting venues) and sharing info on the WRC's role in protecting water resources and the environment. See Appendix 4 for a complete listing. In FY 2022, WRC staff responded to a series of questions regarding pollution and littering in Oakland County, and how WRC tackles the topic of pollution prevention in Oakland County. The questions were for a school Podcast project for a 5th grade project at a school in Rochester. In FY 2023, WRC staff responded to a series of questions regarding beach closures - what causes it and can they be prevented. The questions were for a school project in their government class. -In FY 2023, WRC staff presented two talks on flooding and related topics on stormwater management and environmental stewardship: 10/5/2022 - 75 3rd grade students at Leonard Elementary in Troy (provided a copy of the Waterfront Wisdom booklet to all students; also donated a copy of "Let's Build a Rain Garden" by local author, Sally Wenczel) 11/3/2022 - 130 6th grade students at West Hills Middle School in Bloomfield Hills (provided a copy of the Waterfront Wisdom booklet to all students) 12/6/2022 - WRC staff presented on the topic of the Michigan Water Asset Management Council at the MWEA's 2022 Watershed & Stormwater Seminar in Lake Odessa, MI 3/22/2023 - In honor of World Water Day, the WRC provided content on watersheds, stormwater pollution prevention and actions we can all take to help curb stormwater runoff pollution in the Oakland County Blog that is seen by all Oakland County employees. The blog is viewable online at: https://oaklandcountyblog.com/2023/03/22/world-water-day/. The County's 24-Hour Pollution Hotline was also highlighted. 5/17/2023 - WRC staff presented at the 33rd annual "Leadership Oakland" event for their Environment track on the topic of "Water Resources in Oakland County" to approximately 40 attendees. Topics covered included stormwater management, stormwater pollution prevention, watersheds and water quality in Oakland County. 6/13/2023 - Two WRC staff presented at the Trail, Water and Land Alliance meeting regarding the Norton Street Innovation: Augusta Drain Stormwater Improvement Poject in Pontiac at their June meeting</p> <p>OCPRC: 6/2 - 6/3/23 - Native Plant Event - 107 attendees 6/15/23 - Boat Launch outreach - Clean, Drain, Dry and AIS - 2 attendees 8/17/23 - Boat Launch outreach - Clean, Drain, Dry and AIS - 1 attendee 9/16/23 - Metro Boat Show - ~ 20-30 attendees 11/11/23 - Royal Oak Garden Club Presentation - aquatic invasive species - 20 attendees</p>

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Action/Activity	
Presentations and Displays	<p>OCPLBD: FY 2022: - 10/15/2021, 2/18/2022, 6/17/2022: Oakland County Planning & Local Business Development hosted the Trail, Water & Land Alliance (TWLA) meetings with the following topics: Metropark Express-a Pilot Partnership between HCMA and SMART; Protecting Michigan’s lakes and streams from aquatic invasive species with the RIPPLE program; Micro- and Nanoplastic Pollution: From Sources to Solutions; An Overview of the Moutrie Pollinator Garden and New Trail Signage; City of Rochester Hills Greenspace Program; Southfield City Centre Trail; Clinton River Area Mountain Bike Association Bike Patrol</p> <p>FY 2023: <ul style="list-style-type: none"> • 2/23/2023, 9/27/2023 – Hosted Planner’s Gathering workshops with the following topics: Oakland County Hazard Mitigation Plan Update, Oakland County Hazard Mitigation Plan – A Draft Review. • 10/13/2022, 2/14/2023, 6/13/2023 - Hosted the Trail, Water & Land Alliance (TWLA) meetings with the following topics: MI Air Line Trail Phase 2 Update, Tour of the MI Air Line Trail, Spotted Lanternfly – One of Oakland County’s Newest Invasive Species; GREEN Initiative – Growing Our Resilience, Equity & Economy with Nature; Climate Adaptation in Metro Detroit’s Urban Ecosystems: An Overview of Resources from the Northern Institute of Applied Climate Science; Norton Street Innovation: Augusta Drain Stormwater Improvement Project. • Presented at the Michigan Conservation Stewards Program - Oakland County Cohort. </p> <p>OCHD: FY 2022: - OCHD presented at the Great Lakes Beach Association Conference in Fall 2022 to discuss qPCR standard for E. coli in inland lakes. - OCHD presented at the Clinton River Water Festival in May 2022. - OCHD gave a presentation on Legionella investigations in Long Term Care facilities at the LARA Joint Provider Surveyor Training Conference. - Participated with MPART in presentations about PFAS sites for investigations of private wells. These presentations at open meetings for municipal officials and residents were held in Lake Orion on 2-23-2022 and Milford on 4-27-2022.</p> <p>FY 2023: - OCHD presented "Well and Septic 101:" for residents in Franklin, 3-2-2023. - OCHD presented at the Clinton River Water Festival in May 2023.</p> <p>MSUE: Educational material on a variety of topics (soil testing, inland lake management, fertilizer management, stormwater management) were provided at the following events: Quiet Adventure Symposium (3/4/23 to 500 participants); Oakland County Fair (7/13/22 to 250 families; 7/14/23 to 250 families); MSU Science Festival (4/9/22 to 500 participants and 4/1/2023 to 250 participants); Detroit Zoo Greenfest (50 families on 8/7/23).</p>
Publicize Environmental-Related Events	<p>- A total of 10 events were publicized on the bulletin board in the WRC lobby in FY 2022 and 2023. A complete listing of these events is available upon request. Many events were also shared via social media during FY 2022/2023 between WRC, OC Parks, OC CISMA and partner organizations.</p>
	<p>OCPRC: <i>Project List - Projects that improved and/or increased public access to freshwater resources and/or related public education tools on freshwater ecology and storm water quality:</i></p> <ul style="list-style-type: none"> • Davisburg Dam Removal - on-going through FY 2022 and 2023 • Crooked Lake dock improvements - on-going through FY 2022 and 2023 • Groveland Oaks dock install - on-going in FY 2023 <p>Pontiac Oaks dock install - completed in FY 2023 Springfield Oaks culvert daylighting - on-going in FY 2023</p>

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Action/Activity	
Recreational Use/Access	<p>OCPLBD: FY 2022:</p> <ul style="list-style-type: none"> - Participated in Healthy Pontiac, We Can Coalition Meetings - Assisted the MI Air Line Trail and Huron Valley Trail with construction oversight of Phase 2 trail development that includes 2.4 miles of new shared use path that extends from Old Plank Road to Wixom Road. Majority of construction was completed by October 2022. - Participated on the DNR's Nonmotorized Advisory Workgroup - Participated in the construction oversight for the Pontiac - Clinton River Trail Maintenance Improvements project with the Friends of the Clinton River Trail. Majority of construction was completed by October 2022. - Began the public engagement process for the Galloway Lake Park Transformation Design project in Pontiac. - Assisted the City of Pontiac with public engagement sessions, preliminary design, graphics and grant application for the Pike Street Crosstown Connector-Clinton River Trail project that will include bicycle and pedestrian improvements along some 2.5 miles of roadway and 1.5 miles of former railroad, linking the Clinton River Trail and improving connections to the downtown, parks, and neighborhoods. Construction is anticipated in FY2026 if funding is available. - Assisted the Polly Ann Trailway Management Council with grant writing assistance to resurface and modernize 16.9 miles of trail in northeast Oakland County. Construction is anticipated in 2025 if funding is available. <p>FY 2023:</p> <ul style="list-style-type: none"> • Participated in Healthy Pontiac, We Can Coalition Meetings. • Participated on the DNR's Nonmotorized Advisory Workgroup (2022 - term expired 1/1/2023). • Assisted the City of Pontiac with request for proposals, public engagement sessions, preliminary design and graphics for the Galloway Lake Park Revitalization project that will include a new fishing pier, court sports, site furniture, playgrounds, splash pad, trailhead for the adjacent proposed rail-trail, walking paths, shade shelters, restrooms, invasive species removal, demolish former community center, and parking lot improvements. The city is seeking grant funding to implement the project. • Assisted the Polly Ann Trailway Management Council with grant writing assistance to resurface and modernize 16.9 miles of trail in northeast Oakland County. Construction is anticipated in 2025 if funding is available. • Assisted the Village of Leonard with grants to complete the preliminary design and construction documents for the Leonard Nature Park. • Participated in the Huron Clinton Metroparks trail visioning sessions to link the Metroparks in the region with walking/biking paths. • Attended Trail Council Meetings for the Huron Valley Trail, MI Air Line Trail, Polly Ann Trail, Clinton River Trail. • Provided support letters for several Michigan Natural Resources Trust Fund grant applications.
Recreational Vehicle Waste Dumpsites	<p>The WRMD website has a link to RV dumpsites in MI and is available at: https://www.oakgov.com/community/community-development/waste-recycling/waste-recycling-resources (under the "Statewide" dropdown, then click on "Recreational Vehicle Dump Stations in Michigan").</p> <p>A searchable list of RV dump sites in Michigan is also available online at: https://www.sanidumps.com/.</p> <p>There were 2,460 website hits in FY 2022 and 4,591 website hits in FY 2023 to the County's Waste and Recycling Resources website.</p>
Regional Public Education Efforts	<p>The WRC Environmental Team staff regularly attend meetings of the Southeast Michigan Partners for Clean Water. Material developed through the Ours to Protect campaign is used in ongoing public education efforts. A Web site for the public education campaign has been developed and is located at: www.semco.org. The Web site includes actions the public can take to protect our water resources. The WRC has a web site with information on the Seven Simple Steps to Clean Water at: https://www.oakgov.com/government/water-resources-commissioner/resources/education/seven-simple-steps-to-clean-water. SEMCOG's web site is available at: https://www.semco.org/what-you-can-do/to-protect-our-waterways. Oakland County is an active member of SEMCOG and provides ongoing financial support to continue these regional educational programs.</p> <p>SEMCOG is a crucial partner to the County in implementing the Phase II stormwater permit. A complete listing of all of SEMCOG's supporting programs can be found in Appendix 5, "Partners for Clean Water Annual Report, 2023".</p> <p>In a partnership between SEMCOG, the Great Lakes Water Authority and the Cranbrook Institute of Science, a regional public education campaign was unveiled in FY 2019 called "One Water". The goal of the campaign is to bring greater awareness of the connection between our drinking water, wastewater and stormwater systems and how it is all "One Water" and a resource that must be cared for with a shared responsibility. The tools of that campaign include: educational videos, Public Service Announcements on television and radio, billboard advertisements, tip cards, a blog series (one article on each topic of stormwater, wastewater and drinking water), an online resource center and giveaways including FOG disposal bags, reusable water bottles and pet waste baggies. The resource materials are available online at: https://www.semco.org/mionewater. A report on the reach of the 2023 MiOneWater campaign is available online at: https://www.semco.org/desktopmodules/SEMCOG.Publications/GetFile.ashx?filename=One_Water_Implementation_Report_2023_FINAL.pdf.</p> <p>Commissioner Nash was featured in a OneWater video highlighting programs and best practices in Oakland County and is available online at: https://www.youtube.com/watch?v=W0JHQ1XSNml. As of September 30, 2023, the video has received 397 views.</p>
Regional Stormwater Summit	<p>For FY 2022, the 8th Annual Stormwater Summit was held virtually on October 29, 2021 via Zoom. Speakers included representatives from WRC, SEMCOG, OHM Advisors, Drummon Carpenter, the City of Royal Oak, EGLE and the City of Grand Rapids. The agenda is available upon request.</p> <p>For FY 2023, the 9th Annual Stormwater Summit was held on October 21, 2022 with approximately 170 attendees. Event details are available online at: https://www.mi-stormwatersummit.com/.</p>

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Action/Activity	
Riparian Information Distribution	<p>-To date, more than 17,000 Waterfront Wisdom booklets have been distributed. An excel spreadsheet that details the distribution list is available upon request</p> <p>-There were 713 website hits during FY 2022 and 832 website hits in FY 2023 to WRC's website on riparian education.</p>
River Day Events	<p>WRC: In FY 2022, the Art Fish Fun festival was held on June 11, 2022 with approximately 250 attendees and a variety of vendors and environmental activities.</p> <p>In FY 2023, the 2023 Art Fish Fun Festival returned to pre-Covid numbers, bringing in an estimated 400 attendees. In addition to the attendees, there were 70 people facilitating activities representing 37 different companies, non-profits, and community organizations. These organizations represent local groups that have a particular interest in environmental education, serving the greater Pontiac community, and providing opportunities for residents to connect with the arts, nature, and the humanities at large. The day kicked off with a one-hour long park cleanup. 18 people participated and helped to remove 18 bags of garbage from the park. There was a total of 10 event sponsors, including both monetary and in-kind, which helped to keep this event free to the public. A BBQ lunch and ice cream was also provided for 300 guests.</p> <p>The festival was hosted in collaboration with WRC, Pure Oakland Water, Clinton River Watershed Council, The Art Experience in Pontiac and the City of Pontiac.</p> <p>OCPRC: OCPR did not participate in any River Day events in FY 2022 or 2023.</p> <p>CRWC: In FY2022, the CRWC publicized and promoted 15 recreation and stewardship events on River Day, Saturday June 11th within the watershed, as well as 3 in the region. Approximately 535 people attended these events, and 100 T-shirts were distributed to the public. CRWC hosted a native plant sale in partnership with Plants for Ecology, with 611 plants sold through pre-orders only. Other River Day events included rain garden maintenance, park clean ups, fishing derbies, and family fun days.</p> <p>In FY2023, the CRWC publicized and promoted 20 recreation and stewardship events on River Day, Saturday, June 10th within the watershed, as well as 4 in the region. There were approximately 643 attendees watershed-wide, and 425 T-shirts were distributed to the public. Once again, CRWC hosted a native plant sale in partnership with Plants for Ecology. In addition, CRWC hosted a non-native watercress pull with volunteers to remove a thick mat of watercress growing in Avon Creek. Other events included paddle clean ups, beautification events, fishing derbies, and family fun events.</p>
School Program - Clinton River Water Festival at Oakland University	<p>In FY 2022, the 16th annual festival was held on May 20, 2022 at Oakland University in Rochester Hills. A total of 36 classes from 16 schools attended – a total of nearly 800 students and 153 teachers and chaperones were educated about the importance of water in their daily lives in the Clinton River watershed. A total of 37 different stations were visited by the classes represented by a variety of public and private water resource professional organizations.</p> <ul style="list-style-type: none"> - WRC Dirt Doctors presented to 5 classes, approximately 106 students - Oakland County Parks presented "Wild About Watersheds" to 5 classes, approx. 123 students - Oakland County Health Dept. presented "Groundwater Modeling" to 5 classes, approx. 94 students - MSU-Extension Oakland County presented "All of Our Water is Connected and Ours to Protect" to 5 classes, approx. 123 students <p>In FY 2023, the 17th annual festival was held on May 19, 2023 at Oakland University. A total of 40 classes from 16 schools attended – reaching a total of just over 900 students and 169 teachers and chaperones. A total of 40 different stations were visited by the classes represented by a variety of public and private water resource professional organizations.</p> <p>Planning partners for the annual Clinton River Water Festival include the WRC, City of Auburn Hills, Clinton River Watershed Council, Cranbrook Institute of Science, and Oakland University's department of Pre-College Programs with sponsorship funding provided by Pure Oakland Water and WM.</p> <ul style="list-style-type: none"> - WRC Dirt Doctors presented to 5 classes, approximately 106 students - WRC presented the Enviroscope Watershed Model to 5 classes, approx. 115 students - Oakland County Sheriff's Office presented "Water Safety" to 5 classes, approx. 123 students - Oakland County Parks presented "Michigan Watershed Mammals" to 5 classes, approx. 123 students - Oakland County Health Dept. presented "Beach Water Contamination and Monitoring the Clinton River Watershed Area" to 5 classes, approx. 94 students - MSU-Extension Oakland County presented "Water's Journey: Out of the Tap and Down the Drain" to 5 classes, approx. 123 students

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School Program - Detroit River Water Festival on Belle Isle in Detroit	<p>In FY 2022, the festival was held on September 27, 2022. A total of 5 classes from 4 schools participated. The festival was open to 5th and 6th graders in the Detroit Public Schools. A total of 238 students and 16 teachers and chaperones attended. There were 10 organizations that presented, 18 volunteers and 2 Friends of the Detroit River staff to make the 2022 festival a success.</p> <p>Photos and video of the 2022 Festival are available online at: https://drive.google.com/drive/folders/15fQ8SbsILNGgFKvSvPAPOMe49HITkHkg.</p> <p>The WRC Dirt Doctors presented to 4 classes, approximately 110 students and 4 teachers.</p>
	<p>In FY 2023, the festival was held on Sept. 27 and 28, 2023. A total of 800 4th and 5th grade students from Detroit were engaged in outdoor, interactive presentations! The festival also reached 55 teachers and chaperones. A total of 9 schools representing 30 classes were able to participate. Fifteen (15) different organizations presented at the festival. Forty-six (46) volunteers and 4 staffers from the Friends of the Detroit River were also integral to the success of the 2023 festival. There were three (3) different media sources that covered the festival! Photos and videos from this year's festival are available online at: https://drive.google.com/drive/folders/1nbAPjWGeQCfAyg1P1t67yp9vVh-ooAbT.</p> <p>The WRC Dirt Doctors presented to 8 classes, approximately 223 students and 8 teachers.</p> <p>The WRC also presented the Drain Detectives program to 8 classes, approximately 208 students and 8 teachers.</p>
School Program - Lake Erie Water Festival at IHM Motherhouse in Monroe	<p>The event did not take place in FY 2022.</p>
	<p>Unfortunately the 2023 event was the same day as the Lake St. Clair Water Festival in Macomb so the WRC's Dirt Doctors were unable to attend.</p>
School Program - Lake St. Clair Water Festival at Macomb Community College	<p>In FY 2022, the 15th annual festival was held on May 17, 2022.</p> <p>The WRC Dirt Doctors presented to 6 classes, approximately 180 students and 6 teachers.</p>
	<p>In FY 2023, the 16th annual festival was held on May 15, 2023.</p> <p>The WRC Dirt Doctors presented to 6 classes, approximately 180 students and 6 teachers.</p>
School Program - Raisin River Water Festival	<p>The event did not take place in FY 2022 or FY 2023.</p>
School Program - Rouge River Water Festival at Cranbrook Institute of Science	<p>In FY 2022, the festival was held both virtually and in person. The virtual session was held on October 12-15, 2021. A total of 1,062 students and 4 teachers participated. WRC, OCPRC and MSU-Extension Oakland County provided virtual programming to virtual attendees. MSU-Extension provided a video of their groundwater model (located here: https://mediaspace.msu.edu/id/1_9vwwq3qh8). WRC provided a link to its virtual Dirt Doctors and EnviroScape Watershed Model programs.</p> <p>In FY 2022, the festival was held in person from Sept. 13-16, 2022 at Cranbrook Institute of Science. Approximately 1,142 students from 40 classes and 17 different schools in 10 different communities attended (Beverly Hills, Bingham Farms, Birmingham, Bloomfield Hills, Bloomfield Twp, Commerce, Farmington Hills, Southfield, Troy and Walled Lake). Twenty-eight (28) organizations presented during this year's Water Festival.</p> <p>The following WRC staff presented at the 2022 Festival: Dirt Doctors: Two staff members presented Dirt Doctors to 15 classes, approximately 335 students Three staff members from OCPRC presented "Macroinvertebrate Mayhem" to 4 classes, approximately 98 students One staff member from MSU-Extension presented "All Our Water is Connected & Ours to Protect" to 7 classes, approximately 167 students Two WRC staff members attended and worked the registration area all four days of the festival.</p>

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School Program - Rouge River Water Festival at Cranbrook Institute of Science	<p>In FY 2023, the festival was held from Sept. 19-22, 2023 at the Cranbrook Institute of Science. Approximately 1,135 students from 49 classes and 20 different schools in 10 communities attended (Bingham Farms, Birmingham, Bloomfield Hills, Bloomfield Twp, Commerce, Farmington Hills, Novi, Plymouth, Troy and Walled Lake). Twenty-eight (28) organizations presented during this year's Water Festival.</p> <p>The following WRC staff presented at the 2022 Festival: Dirt Doctors: 8 staff members presented Dirt Doctors to 15 classes, approximately 284 students and 30 teachers/chaperones</p> <p>Three staff members from OCPRC presented "Macroinvertebrate Mayhem" to 8 classes, approximately 183 students and 8 teachers/chaperones</p> <p>One staff member from MSU-Extension presented "All Our Water is Connected & Ours to Protect" to 8 classes, approximately 173 students and 8 teachers/chaperones</p> <p>Two WRC staff members attended and worked the registration area all four days of the festival.</p>
Solid Waste Plan (Materials Management Plan)	<p>In late 2022, the Michigan legislature passed a package of bills to update Michigan's solid waste management laws. The old Solid Waste Management Plans will become Materials Management Plans with an emphasis on using materials to the fullest and best use before discarding them. The Director of the MI Department of Environment, Great Lakes & Energy (EGLE) officially called for these Plans to be initiated on January 8, 2024. The first few tasks of this process are administrative in nature and the Oakland County Planning & Local Business Development staff are working with the Board of Commissioners staff to start these tasks. This process is expected to take 3-4 years. Oakland County continues to participate in EGLE and SEMCOG workgroups to learn as much about this process as possible. Oakland County will submit an RFP for a consultant to assist in writing this plan later in 2024.</p> <p>The county's current Solid Waste Plan is available at: https://www.oakgov.com/community/community-development/waste-recycling/solid-waste-plan.</p> <p>There were 404 website hits in FY 2022 and 396 website hits in FY 2023 to the County's Solid Waste Plan website.</p>
Storm Drain Markers/Stenciling Program	<p>There were no additional storm drain markers installed on the County Campus in FY 2022/2023.</p> <p>There were no storm drain marker inquiries made by residents in Oakland County in FY 2022-2023.</p> <p>-WRC Storm Drain Manhole Cover specifications were updated in FY 2010 and now require that all new storm drain manhole covers are stamped with the message "Stormwater Only - Dump No Waste! Drains to Waterway!" with a custom logo showing a heron, frog and fish.</p>
Watershed Group/CVT Support	<p>WRC staff regularly attend SEMCOG's Southeast Michigan Partners for Clean Water meetings.</p> <p>WRC staff sent numerous emails to watershed group/stormwater contacts to help publicize upcoming events related to water-resource management. In FY 2022/2023, a total of 20 emails were sent to watershed/stormwater contacts promoting various educational/stormwater-related events/opportunities.</p> <p>Oakland County provides a summary to communities to supplement their stormwater reporting. A digital copy of the summary provided for FY 2022/FY 2023 is available at: https://www.oakgov.com/government/water-resources-commissioner/stormwater/phase-ii-stormwater-reports</p> <p>There were 1,071 website hits in FY 2022 and 581 in FY 2023 to the WRC's Phase II Stormwater website.</p>
Technical Support	<p>-WRC staff responded to 11 different requests for information throughout FY 2022/2023. An excel spreadsheet that summarizes all of the information requests is available upon request.</p> <p>Oakland County provides a summary to communities to supplement their stormwater reporting. A link to access the summary provided for FY 2022/2023 is: https://www.oakgov.com/government/water-resources-commissioner/stormwater/phase-ii-stormwater-reports</p>

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Action/Activity	
Wastewater Treatment Plant/RTB Tours	<p>Throughout FY 2022/2023, the WRC hosted the following tours of its wastewater treatment plants:</p> <p>Clinton River Water Resource Recovery Facility in Pontiac: - FY 2022, approx. 21 visitors from the Van Hoosen Middle School Stream Leaders Team - 4/18/2023 - approx. 25 students from Rochester High School</p> <p>Walled Lake-Novu WWTP facility: FY 2022/2023: 181 visitors from Oakland Community College during 9 separate tours</p> <p>Commerce WWTP facility: FY 2022/2023: 10 visitors from 5 separate tours</p> <p>The WRC also has some videos explaining the processes that takes place at a wastewater treatment plant on its "Water Education Playlist" available here: https://www.oakgov.com/government/water-resources-commissioner/resources/video-library</p>
Watershed Council Support	<p>In FY 2022/2023, the WRC contributed the following in annual membership dues:</p> <p>- Clinton River Watershed Council: \$10,250.00 + \$10,250.00 = \$20,500.00 - Huron River Watershed Council: \$8,930.13 + \$8,903.85 = \$17,833.98</p>
Watershed Signage	<p>To date, the WRC has helped coordinate the purchase and installation of more than 650 watershed signs throughout the Flint, Clinton, Rouge and Huron River Watersheds in Oakland County, including:</p> <ul style="list-style-type: none"> • 215 signs throughout the Huron, Clinton and Flint Watersheds in 2007-2008 • 206 Clinton River Watershed signs in 2005 • 230 Rouge River Watershed signs in 2001-2003 <p>In FY 2023, the Alliance of Rouge Communities staff completed a watershed signage inventory in the Rouge River watershed to see where signs may need to be replaced or added in the watershed. A total of 140 new or replacement watershed signs were installed and mapped throughout the Rouge River Watershed. The map is available in Appendix 6.</p>

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WRC:

- 10/5/2021 - One WRC staffer attended the "Pathway to Green and Complete Streets" Steps, Success Stories and Lessons Learned" webinar hosted by EPA
- 10/27/2021 - One WRC staffer attended the "Effects of Total Nitrogen and Total Phosphorus on Chlorophyll a Concentrations in Flowing Waters" webinar hosted by EPA
- 10/27/2021 - Several WRC staffers attended the "IDEP Alert Observer Training" virtually hosted by SEMCOG
- 10/29/2021 - Several WRC staffers attended the "2021 Regional Stormwater Summit" virtually - hosted with WRC, POW, LTU and GLWA
- 11/2/2021 - One WRC staffer attended the "Navigating Federal Funding for Green Infrastructure and Nature-based Solutions" webinar hosted by EPA
- 11/18/2021 - One WRC staffer attended the "Q4 Stormwater Management Forum" hosted by the Clinton River Watershed Council
- 11/18/2021 - One WRC staffer attended the "2021 National Municipal Stormwater Alliance Public Meeting" webinar hosted by NMSA
- 1/6/2022 - One WRC staffer attended the "Showcasing Leading Practices in Climate Adaptation - Green Stormwater Infrastructure" webinar hosted by NOAA Climate Program Office
- 1/25/2022 - One WRC staffer attended the "Advancing Inland Lake Stewardship through Shoreline Best Management Practices" webinar hosted by EGLE
- 2/4/2022 - One WRC staffer attended the "From Rain to Root: Slowing shoreline erosion with stormwater management techniques" webinar hosted by Watersheds Canada
- 3/2/2022 - One WRC staffer attended the "Electric Vehicle Planning Resources for Communities" webinar hosted by SEMCOG
- 3/8/2022 - One WRC staffer attended the "2022 Great Lakes Conference - The Great Lakes: Connecting Science and Management" webinar hosted by EGLE
- 3/9/2022 - One WRC staffer attended the "Maintaining & Restoring Native Plant Gardens with Vern Stephens" webinar hosted by the Washtenaw Conservation District
- 4/19/2022 - One WRC staffer attended the "Flowering Bee Lawns" webinar hosted by MSU-Extension
- 4/22/2022 - One WRC staffer attended the "Sustainability for Local Governments Webinar Series" webinar hosted by SEMCOG. Oakland County's Sustainability Office, Erin Quetell, was also a featured speaker.
- 4/27/2022 - One WRC staffer attended the "Shovel-Ready and Beyond! A Green Infrastructure Case Study in the Three Bays Watershed" webinar hosted by EPA
- 4/28/2022 - One WRC staffer attended the "Going Green for Good: Long-term Considerations for Operations and Maintenance of Green Infrastructure" webinar hosted by EPA
- 6/6/2022 - One WRC staffer attended the "Water - We Are the Champions" webinar hosted by SEMCOG. WRC's Commissioner Nash was a featured speaker for the webinar along with the WRC's 2022 Kids Clean Water Calendar Contest winner, Aditya Yogesh!
- 6/21/2022 - One WRC staffer attended the "Michigan's Water Withdrawal Assessment and Permitting Process" webinar hosted by EGLE
- 6/22/2022 - Several WRC staffers attended the "New Oakland County Post-Construction Stormwater Standards" webinar hosted by Oakland County Planning for their 2022 Virtual Planners Gathering
- 7/27/2022 - One WRC staffer attended the "Regional Reflections on Green Infrastructure and Nature-based Solutions: Great Lakes" webinar hosted by AAAS
- 9/22/2022 - One WRC staffer attended the "Runoff as a Resource" How it Can Bring Watershed Benefits" webinar hosted by Storm Water Solutions
- 9/28/2022 - One WRC staffer attended the "Weather and Climate Science for Stormwater Management" webinar hosted by Hydro International
- 9/29/2022 - One WRC staffer attended the "Bring Back the Pollinators: Providing Nesting Habitat for Bees" webinar hosted by the Xerces Society

- 10/27/2022 - One WRC staffer attended the "Growing a Green Infrastructure Workforce" webinar hosted by EPA
- 11/11/2022 - One WRC staffer attended the "Pollinator Habitat 101: An Introduction and Refresher" webinar hosted by The Ohio State University
- 11/17/2022 - One WRC staffer attended the "Novel Solutions and Tech for Flooding in Michigan" webinar hosted by U of M's Civil & Environmental Engineering Dept.
- 11/18/2022 - One WRC staffer attended the "Stormwater P3's - A Partnership for Resilience" webinar hosted by Invisible Structures
- 12/15/2022 - One WRC staffer attended the "Invasive Species - Where to Start?" webinar hosted by the Center for Watershed Protection
- 12/15/2022 - One WRC staffer attended the "Blue and Green Infrastructure for Climate Resiliency: A New Orleans Case Study" hosted by Storm Water Solutions
- 1/11/2023 - One WRC staffer attended the "Learn about the National Watershed Research Network Initiative" hosted by the Center for Watershed Protection
- 1/17/2023 - One WRC staffer attended the "PaveDrain Permeable Articulating Concrete Block" webinar hosted by Interface H2O
- 2/4/2022 - One WRC staffer attended the "From Rain to Root: Slowing shoreline erosion with stormwater management techniques" webinar hosted by Watersheds Canada
- 1/25/2023 - One WRC staffer attended the "Trust Building" webinar hosted by the Green Infrastructure Leadership Exchange
- 5/10/2023 - One WRC staffer attended the "Managing Urban Ecosystems webinar sponsored by The Stewardship Network
- 6/5/2023 - One WRC staffer attended the "Water: Connected for Life" webinar hosted by SEMCOG
- 5/25/2023 - One WRC staffer attended the "Emerging Workforce Needs in the Stormwater Industry" webinar hosted by the Center for Watershed Protection
- 6/27/2023 - One WRC staffer attended the "Healthy Soil, Healthy Planet: Exploring Regenerative Agriculture" webinar hosted by MSU-Extension Agriculture and Agribusiness Institute
- 7/11/2023 - One WRC staffer attended the "Healthy Forests in the Face of Climate Change" webinar hosted by MSU Extension
- 7/13/2023 - One WRC staffer attended the "Swallow-wort Biological Control Efforts in Michigan" webinar hosted by EGLE
- 7/13/2023 - One WRC staffer attended the "Harmful Algal Blooms in Michigan's Recreational Waters" webinar hosted by EGLE
- 7/25/2023 - One WRC staffer attended the "Landscaping over Septic Systems" webinar hosted by MSU Extension
- 9/12/2023 - One WRC staffer attended the "Planning and Planting a Native Plant Pollinator Garden" webinar hosted by MSU Extension

Workshops/Seminars/
Webinars

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OCP staff provided and/or partnered with other organizations to provide the following outreach and education programs that promoted best practices for protecting water quality and/or freshwater resources during FY 2022:

- 5/22/2022: OCP Nature Education staff hosted a program about turtles at Red Oaks Nature Center for 4 participants.
- 5/28/2022: OCP Nature Education staff hosted a workshop on the water cycle for 8 participants.
- 5/29/2022: OCP Nature Education Staff provided a nature table on native plant species as part of The Bloom Project native plant sale event for 20 people.
- 6/11/2022 – OCP Nature Education staff provided a nature table with activity on wetlands as part of the Art, Fish, and Fun festival in Pontiac serving around 300 participants.
- 6/12/2022 – OCP Nature Education staff led Get Hooked on Fishing Program for 12 participants.
- 7/20/2022 – OCP Nature Ed staff led a Nature Presentation on Wetlands for Novi Parks and Rec Summer Camp serving 46 participants.
- 8/9/2022 – OCP Nature Ed staff led a Nature Presentation on Wetlands for Clarenceville Summer Camp serving 48 participants.
- 8/12/2022 – OCP Nature Education Staff hosted a Puddle Jumpers Preschool Program event with a Wetlands theme for 30 participants.
- 9/14 & 16/ 2022: OCP Nature education Staff hosted a Macroinvertebrate learning activity station at the Rouge River Water Festival for 180 youth.
- 9/15/2022 – CRWC staff held Adopt a Stream workshop within the Wint Nature Center for around 20 participants.
- 9/21/2022 – OCP Nature Education staff hosted a Field Trip with American House on native plantings and environmental impacts for 15 participants.

OCP staff provided and/or partnered with other organizations to provide the following outreach and education programs that promoted best practices for protecting water quality and/or freshwater resources during FY 2023:

- 1/13/2023 – Puddle Jumpers: Turtles – 30 participants
- 2/5/2023 – Habitats Badge Field Trip – 25 participants
- 3/25/2023 – Vernal Ponds Program – 14 participants
- 3/29/2023 – Spring into Science at Cranbrook - 375 participants
- 3/30/2023 – Spring into Science at Cranbrook - 231 participants
- 5/16/2023 – Human Impacts on Wetland Wildlife – 112 participants
- 5/10/2023 – Clinton River Watershed Festival – 78 participants
- 5/20/2023 – Michigan Shell-ebrities Turtle Program – 18 participants
- 7/7/2023 – Trout, Trout, Trout! – 12 participants
- 7/25/2023 – Fishing Night - 25 participants
- 8/4/2023 – Turtle Splash – 9 participants
- 8/10/2023 – Aquatic Insects - 4 participants
- 8/16/2023 – Aquatic Insects - 8 participants
- 9/20/2023 – Rouge River Water Festival – Macro Mayhem - 120 participants
- 9/22/2023 – Rouge River Water Festival – Macro Mayhem - 155 participants

Illicit Discharge Elimination Plan

OCFM participated in MDOT's Adopt-a-Highway program beginning in FY 2012. They adopted Telegraph Rd between Dixie Highway and Elizabeth Lake Roads.

In FY 2022, one (1) clean-up event took place:

- April 23, 2022 with 39 bags of trash, 2 tires, one fender and other car parts collected and 13 volunteers (a total of approximately 2.5 cubic yards of trash in FY 2022 collected).

In FY 2023, two (2) clean-up events took place:

- October 1, 2022 with 27 bags of trash and 8 volunteers.
- April 22, 2023 with 42 bags of trash, miscellaneous car parts and broken furniture and 18 volunteers (a total of approximately 4.14 cubic yards of trash in FY 2023 collected).

The **WRC** adopted a one-mile stretch of Pontiac Lake Road from Telegraph to Scott Lake Road in FY 2011. In FY 2023, one (1) clean-up event took place:

- September 14, 2023 with 17 bags of trash and 7 volunteers (a total of approximately 1.02 cubic yards of trash in FY 2023 collected).

Adopt-A-Road/Adopt-a-Highway Clean-up Program

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<p>Beach Monitoring Program</p>	<p>In FY2022, a total of 100 beaches on 67 different lakes were sampled for <i>E. coli</i>. The primary sampling program lasted 10 weeks and began the week of June 6, 2022. A total of 1,010 sampling events were conducted between June 6 and August 11, 2022 (Several beaches were sampled past August 11 due to persistent elevated results and resulted in additional sampling events.) A list of beaches sampled is available upon request.</p> <p>At the beginning of each bathing beach season, OCHD sends notifications to the individual cities, villages or townships in which the beach is located as notification that sampling will occur. These same letters are also mailed to the contact person on record for the individual bathing beaches.</p> <p>There were 18 beaches closed during the 2022 season. Some beaches were closed multiple times, and length of closure varied from 1 day to over one month.</p> <p>Beach sampling information is available online at: https://www.oakgov.com/community/health/public-health-services/environmental-health/beaches and the EGLE BeachGuard website at https://www.egle.state.mi.us/beach/. The BeachGuard website also contains historical information.</p> <p>The Health Department also allows residents to bring in their own samples for testing and the results will be provided for a nominal fee.</p> <p>There were 3,043 website hits in FY 2022 to the OCHD's Beach Monitoring Program website.</p>
<p>Beach Monitoring Program</p>	<p>In FY 2023, a total of 100 beaches on 78 different lakes were sampled for <i>E. coli</i>. The primary sampling program lasted 10 weeks and began the week of June 5, 2023. A total of 1,394 sampling events were conducted between June 5 and August 9, 2023. (Several beaches were sampled past August 9 due to persistent elevated results and resulted in additional sampling events.) A list of beaches sampled is available online at: https://www.oakgov.com/health/services/environmental-health/PublishingImages/Pages/beaches/2021%20Beach%20List.pdf.</p> <p>At the beginning of each bathing beach season, OCHD sends notifications to the individual cities, villages or townships in which the beach is located as notification that sampling will occur. These same letters are also mailed to the contact person on record for the individual bathing beaches.</p> <p>There were 26 beaches closed during the 2023 season. Some beaches were closed multiple times, and length of closure varied from 1 day to over one month.</p> <p>Current beach sampling information is available on OCHD's website at https://www.oakgov.com/community/health/public-health-services/environmental-health/beaches and the EGLE BeachGuard website at https://www.egle.state.mi.us/beach/. The BeachGuard website also contains historical information.</p> <p>The Health Department also allows residents to bring in their own samples for testing and the results will be provided for a nominal fee.</p> <p>There were 6,981 website hits in FY 2023 to the OCHD's Beach Monitoring Program website.</p>
<p>Complaint Tracking, Investigation and Notification and Reporting</p>	<p>WRC: The WRC received 53 complaints throughout 26 communities during FY 2022/2023. Complaint investigations resulted in the identification of 31 illicit discharge sources, 30 of which have been eliminated by FY 2023. See Appendix 7 for the WRC Pollution Hotline Complaint Summary Tables for FY 2022 and 2023.</p> <p>OCHD: The OCHD acted on 53 septic-related customer complaints in FY 2022 and 86 septic-related complaints in FY 2023, as reported to EGLE.</p> <p>The Oakland County 24-Hour Pollution Hotline was promoted in the following ways in FY 2022/23:</p> <ul style="list-style-type: none"> -Published on WRC's "Services" page at: https://www.oakgov.com/government/water-resources-commissioner/stormwater/24-hour-pollution-hotline -Published in WRC E-newsletter that gets sent quarterly to elected officials throughout Oakland County communities -Published in WRC's Waterfront Wisdom publication -Published in WRC's annual Kids' Clean Water Calendar -Published in the Fishing Opportunities in Oakland County Poster -Hotline brochures are distributed throughout the year to CVTs at SWAG meetings and at special events -Information about the hotline are shared during presentations at water festivals (Rouge River, Lake St. Clair and Clinton River water festivals) and public education presentations

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Combined Sewer Overflow (CSO) Retention Treatment Basin (RTB) Operation	<p>The WRC operates and maintains the Acacia Park, Birmingham, Bloomfield Village, and George W. Kuhn Retention Treatment Basins (RTBs).</p> <p>For FY 2022, approximately 916.43 million gallons (MG) of treated combined sewage was discharged from the four RTBs during 15 Permitted Treated Discharges (PTDs). During this period, all but one (99%) of the PTDs were in compliance with permit limitations and 1m747.57 MG of combined sewage was retained and dewatered from these four facilities.</p> <p>For FY 2023, approximately 1,199.60 MG of treated combined sewage was discharged from the four RTBs during 17 Permitted Treated Discharges (PTDs). During this period, all but three (82%) of the PTDs were in compliance with permit limitations and 1,935.64 MG of combined sewage was retained and dewatered from these four facilities.</p> <p>The WRC has prepared a Public Notification Plan (PNP), dated Aug. 3, 2018, for CSOs in the Red Run Drain and Rouge River in accordance with their NPDES permits and 40 CFR Part 122.38(c). The PNP describes how WRC insures that the public receives adequate notification of CSO occurrences and impacts from its combined sewer system. The plan is available online at: https://oakgov.com/government/water-resources-commissioner/wastewater/retention-treatment-basins</p> <p>WRC remains committed to continued water resource protection and preservation.</p> <p>There were a total of 110 website hits in FY2022 and 212 website hits in FY2023 to WRC's RTB website.</p>
IDEP Investigations	<p>WRC: During FY 2022, WRC performed 5,140 inspections on structures located along 109 county drains in 29 communities in all five watersheds in Oakland County. A total of eight (8) drains were identified with suspect discharges. All 8 drains were investigated and one (1) illicit discharge was discovered. The source of this discharge was found to be an illicit sanitary lead connection to the Owens Relief Drain in Southfield (Rouge River watershed) and correction is pending. This drain will continue to be investigated for additional non-point sources. The other suspect drains will also continue to be investigated into FY 2023.</p> <p>During FY 2023, WRC performed 5,173 inspections on structures located along 116 county drains in 27 communities in all five watersheds in Oakland County. A total of 19 drains were identified with suspect discharges. All 19 drains were investigated and two (2) illicit discharges were discovered. The source of the first discharge was found to be an illicit sanitary lead connection to the Austin Drain in Southfield (Rouge River watershed) that was corrected in FY 2023. The other misconnected residential sanitary lead to the Owens Relief Drain in Southfield still has not been corrected because the homeowner sold the house in 2023 and it is currently sitting vacant. Upon future purchase, the City of Southfield will ensure the illicit connection is fixed before a Certificate of Occupancy is issued. The other suspect drains will also continue to be investigated into FY 2024.</p> <p>See Appendix 8 for the Dry Weather Screening and IDEP Investigations Summary Tables for FY 2022 and 2023. See also, Appendix 9, "2022 and 2023 ECT (Wayne & Oakland County) IDEP Services Report, as well as Appendix 10, "2023 Oakland County IDEP Summary Report".</p> <p>OCPRC and OCFM: There were no IDEP incidents or investigations in FY 2022 or 2023.</p>
IDEP Training	<p>FY 2022:</p> <ul style="list-style-type: none"> October 2021 - Virtual training on IDEP Alert Observer, IDEP Investigator-level and general Stormwater Pollution Prevention and Good Housekeeping was held in partnership with SEMCOG and ECT, Inc. The following County staff attended the general IDEP awareness training session: WRC - 4 staff members, OC Planning - 1 staff member. The following County staff attended the IDEP Investigator-level training: OCPRC - 11 staff members; WRC - 4 staff members and OC Planning - 1 staff member. <p>FY2023:</p> <ul style="list-style-type: none"> October/November 2022 - Training on IDEP Alert Observer, IDEP Investigator-level and general Stormwater Pollution Prevention and Good Housekeeping was held in partnership with SEMCOG and ECT, Inc. The following County staff attended the general IDEP awareness training session: WRC - 2 staff members, OC Parks - 17 staff members, OCFM - 2 staff members. The following County staff attended the IDEP Investigator-level training: OCPRC - 3 staff members.

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Illicit Connection and Discharge Elimination	<p>WRC: In FY 2022, 12 illicit discharges were discovered by WRC during complaint investigations, outfall/discharge point surveys, stormwater structure inspections and follow-up investigations. Of these, a total of 11 illicit discharges were corrected with the identified sources being eliminated. Eighteen (18) Pollution Hotline complaints investigated resulted in 100% identification and elimination of a pollutant source.</p> <p>In FY 2023, 22 illicit discharges were discovered by WRC during complaint investigations, outfall/discharge point surveys, stormwater structure inspections and follow-up investigations. Of these, a total of 21 illicit discharges were corrected with the identified sources being eliminated. The remaining illicit discharge source has been identified and was referred to EGLE for enforcement (horse farm animal waste runoff issue). Thirty-five (35) Pollution Hotline complaints investigated resulted in 100% identification and elimination of a pollutant source. Surveys and dry weather screening identified two (2) illicit discharges and both were eliminated. See Appendix 8 for the dry weather screening and IDEP investigations summary tables for FY 2022 and 2023.</p> <p>IDEP work was also completed by ECT staff for WRC and is summarized in Appendix 9, "2022 and 2023 ECT (Wayne & Oakland County) IDEP Services Report". WRC also prepared a summary of its IDEP work for stakeholders use in Appendix 10, "2023 Oakland County IDEP Summary Report".</p> <p>The efficiency of the number of complaints received and those resulting in the identification and removal of a surface water pollution source shows that the WRC 24-Hour Pollution Hotline program continues to be a valuable tool for staff, citizens and municipalities.</p> <p>Dry weather screening of County Drains continues to be shown as a useful tool for evaluating the presence of upstream sources of illicit discharges. Although only three (3) sources of pollution were found, this procedure continues to be effective in identifying discharges that would not be found otherwise. Dry weather screening procedures for IDEP were detailed in WRC Work Instructions in FY 2020 and are being conducted on all storm water structures during routine storm drain maintenance inspections of open and enclosed county drains. This process will continue to be used and evaluated in FY 2024.</p> <hr/> <p>In summary, during FY 2022/2023, 34 illicit discharges were discovered by WRC during complaint investigations, outfall/discharge point surveys, stormwater structure inspections and follow-up investigations. Of these, a total of 33 illicit discharges were corrected with the identified sources being eliminated. The remaining illicit discharge source has been identified and was referred to EGLE for follow-up enforcement (horse farm runoff).</p> <p>The following pollutants were removed through the County's IDEP in FY 2022 and FY 2023 (see Appendix 11, WRC Pollutant Removal Summary Tables for FY 2022 and 2023, for details):</p> <ul style="list-style-type: none"> • 9,234,113 gallons of sewage • 3,620 gallons of fuel, oil and grease • 116,480 pounds of sediment • 255 gallons of hydraulic fluid • 50 pounds of pet waste • 50 gallons of chromium • 20 gallons of algaecide
MS4 Discharge Point/Outfall Database	<p>To date, all outfalls and discharge points for County Departments have been mapped and include: Water Resources Commissioner – 421 MS4 outfalls and 69 discharge points Facilities Maintenance & Operations – 66 MS4 discharge points (there are no MS4 outfalls for FMO) Parks and Recreation Commission – 2 MS4 outfalls and 77 discharge points</p>
Oakland Brownfield Initiative	<p>As of FY 2022, there were over 525 projects in the program and 415 projects with environmental assessment work started. As of FY 2023, there are over 535 projects in the program and 425 projects with environmental assessment work started..</p> <p>To date, there's a total of \$2,275,000,000+ on proposed investment.</p> <p>Information on Brownfield's in Oakland County is available at: https://oakgov.com/community/community-development/additional-resources/development-tools-resources.</p> <p>In FY 2023, there were 330 website hits to the Brownfields website.</p>

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Oakland County Facilities with OSDS	<p>OCPRC maintains six (6) OSDS' as outlined in their respective Operations & Maintenance Manual.</p> <p>WRC operates and maintains several community septic systems and county park disposal systems:</p> <ul style="list-style-type: none"> - Woodbridge Lake Estates in Walled Lake - Belle Ann Falls Estates in Ortonville - Lower Pettibone Lake Community Septic in Highland Township - Addison Oaks Park Lagoon System (maintained by WRC) - Groveland Oaks Park (maintained by WRC) - Springfield Oaks Park (maintained by WRC) <p>These systems are visited at least monthly.</p> <p>In FY 2022, the Island Club Condominiums community septic system that was maintained by WRC in Commerce Township was eliminated because they hooked up to the local sanitary sewer system.</p>
Oakland County Onsite Sewage Disposal System (OSDS) Program	<p>OCHD Environmental Health Services (EHS) is responsible for inspection and regulation of septage pumping/hauling trucks. Septage haulers are those businesses that are engaged in servicing, handling and disposing of waste from portable toilets, septic tanks, seepage pits, cesspools and sewage lift stations. Licensed septage haulers require a yearly inspection from the local health department. For FY 2022, EHS conducted 69 septage vehicle inspections of both new haulers and existing vehicles and 2 septage receiving station inspections and 78 vehicle inspections and 3 septage receiving inspections in FY 2023. The unit investigates septage hauler complaints and conducts compliance meetings as necessary.</p> <p>EHS facilitates land development, including the subdividing of land for subdivisions and site condominiums. Properly planned land use enhances community improvement and ensures groundwater protection during the land development process.</p> <p>EHS assists local municipalities in assessing a property's ability to support proposed activities as related to onsite sewage disposal and groundwater protection.</p> <p>OCHD issued 668 on-site sewage disposal system permits for FY 2022 and 616 permits in FY 2023 as reported to EGLE. OCHD completed 461 failure evaluations in FY 2022 and 441 failure evaluations in FY2023.</p> <p>The OCHD has a website dedicated to information about its OSDS Program at: https://www.oakgov.com/community/health/public-health-services/environmental-health/onsite-sewage-disposal-system-septic</p> <p>There were a total of 5,763 website hits in FY2022 and 6,040 in FY2023 to the OCHD's Septic System website.</p>
Spill/Non-Stormwater Release Response	<p>WRC: The WRC has the following procedures in place to deal with pollution incidences:</p> <ul style="list-style-type: none"> -Surface Water Pollution Response Procedure (P-043): The purpose of this Procedure is to describe how the WRC identifies and responds to Oakland County surface water pollution incidents reported through their 24-hour Pollution Hotline (248-858-0931) and other sources. This document was last updated in FY 2015 and is currently under revision; it is available upon request. -Notification and Reporting of SSOs and CSOs (P-036): The purpose of this Procedure is to describe how the WRC handles the notification and reporting of sanitary sewer overflows (SSOs), and combined sewer overflows (CSOs) in accordance with Public Act No. 286 of the Public Acts of 2000. This document is available upon request.

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Update Prioritization and Scheduling of Dry Weather Screening Activities at Known Discharge Point Locations, Road Drainage and Storm Drainage Systems	<p>WRC will continue to follow-up on suspicious discharges identified during FY 2022 and/or 2023 surveys. Follow-up sampling and investigations are scheduled to continue through various IDEP programs in FY 2024.</p> <p>WRC: WRC has surveyed and inventoried all MS4 outfalls and discharge points on County Drains. WRC has submitted an Alternative IDEP which includes a schedule for continued dry weather screening of County Drain structures, including outfalls and discharge points, as part of its 4-year inspections. The Alternative IDEP has identified prioritized drains for follow-up investigation and sampling based on dry weather screening results, complaints and any known pollution issues. WRC will continue dry weather screening, inspections and investigation on drains scheduled for FY 2024. See Appendix 12 for the current list of prioritized drains.</p> <p>See Appendix 13 for the WRC's FY 2023 Water Quality Sampling Results Report detailing County drains that have been investigated as of the end of FY 2023 and details moving forward on drains requiring further/ongoing investigation.</p> <p>OCPRC: OCPR observes the 5-year permit cycle requirement for MS4 dry-weather screening for all OCPR-operated discharge points (77 locations over 11 parks) and OCPR MS4 outfalls (2 locations at one park) and was completed in summer 2019. The next round of dry weather screening will take place in FY 2024. OCPR will continue to partner with WRC and other permitted County Departments to standardize practices and achieve NPDES Phase II Permit requirements.</p> <p>OCFM will continue to dry weather screen outfalls located on their properties once per the 5-year permit cycle and follow-up on investigation and elimination of any illicit discharges found. WRC will continue to provide support for these activities under the Oakland County Stormwater Committee (OCSC).</p>
Verify New Connections - Prevent Illicit Connections	<p>WRC currently employs eight (8) full-time trained inspectors to inspect drain and sewer projects throughout Oakland County. The inspector is responsible for inspecting connections and other related items to insure that work is constructed in accordance with the plans and specifications. The inspector is also present to insure that the integrity of the existing system is maintained and that proper compliance with state and local regulations is observed.</p> <p>In FY 2022, WRC inspected a combined 499 house lead and sewer connections and 61 drain permits throughout Oakland County and provided full time inspection on 26 new construction projects.</p> <p>In FY 2023, WRC inspected a combined 560 house lead and sewer connections and 90 drain permits throughout Oakland County and provided full time inspection on 33 new construction projects.</p>
Wastewater Treatment Plant Operation	<p>For FY 2022, approximately 8.7 billion gallons of treated wastewater was discharged from the WWTP's.</p> <p>For the 12th year in a row, the Walled Lake-Novu WWTP was awarded the highest honor available from the National Association of Clean Water Agencies (NACWA) – the prestigious Platinum Award. The platinum award goes to a facility with perfect compliance with NPDES permits over a consecutive five-year period. The Walled Lake-Novu WWTP has now gone 16 straight years without a non-compliance. At the same time, for the 13th year in a row, the Commerce Township WWTP was awarded the Platinum Award, meaning that the Commerce WWTP has now gone 17 years in a row without a non-compliance. NACWA's Peak Performance Awards Program recognizes facilities for excellence in wastewater treatment as measured by their compliance with their National Pollutant Discharge Elimination System (NPDES) permit requirements.</p> <p>For FY 2023, approximately 7.6 billion gallons of treated wastewater was discharged from the WWTP's.</p> <p>For the 13th year in a row, the Walled Lake-Novu WWTP was awarded the highest honor available from the National Association of Clean Water Agencies (NACWA) – the prestigious Platinum Award. The platinum award goes to a facility with perfect compliance with NPDES permits over a consecutive five-year period. The Walled Lake-Novu WWTP has now gone 17 straight years without a non-compliance. At the same time, for the 14th year in a row, the Commerce Township WWTP was awarded the Platinum Award, meaning that the Commerce WWTP has now gone 18 years in a row without a non-compliance. NACWA's Peak Performance Awards Program recognizes facilities for excellence in wastewater treatment as measured by their compliance with their National Pollutant Discharge Elimination System (NPDES) permit requirements.</p>

Construction Stormwater Runoff Control

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Soil Erosion and Sedimentation Control Program	<p>WRC: The WRC Soil Erosion Unit currently has four (4) inspectors and is responsible for implementing the SESC program in 21 cities, 9 villages and 18 townships (48 CVT's).</p> <p>The WRC soil erosion unit issued 689 single-family residential soil erosion permits, 168 commercial soil erosion permits and 340 permit exemptions in FY 2022.</p> <p>The WRC soil erosion unit issued 587 single-family residential soil erosion permits, 164 commercial soil erosion permits and 261 permit exemptions in FY 2023.</p> <p>The WRC Soil Erosion Unit has a fee structure that uses a permit class system to identify the severity of earth disruption and assign appropriate inspection priorities. WRC maintains a soil erosion database to retrieve daily inspections as well as provide information utilized in monthly quality assurance monitoring. The soil erosion unit is fully staffed and the inspection scheduling system is in place. The WRC Soil Erosion program is an exceptional program that results in the significant water quality benefits throughout Oakland County.</p> <p>Soil erosion complaints are documented in the county's Collaborative Asset Management System (CAMS) and details are available upon request.</p>
Post-Construction Stormwater Runoff Controls for Development and Redevelopment	
Community Master Plan Review	<p>In FY 2022, Oakland County Planning & Local Business Development reviewed nine (9) master plans and two (2) master plan amendments. The master plans were from Groveland Township, the Village of Wolverine Lake, the City of Rochester, the Village of Ortonville, the City of Huntington Woods, Brandon Township, Orion Township, the City of Ferndale, and the City of Sylvan Lake. The master plan amendments were from the Village of Lake Orion and the City of Northville.</p> <p>In FY 2023, Oakland County Planning & Local Business Development reviewed two (2) master plans and two (2) master plan amendments. The master plans were from the City of Southfield and the City of Birmingham. The master plan amendments were from the City of Novi and the Village of Ortonville.</p>
Dams	<p>Under the provisions of Part 307 of Act No. 59 of 1995, Inland Lake Levels, the Water Resources Commissioner is delegated the responsibility of participating in legal proceedings to establish and maintain normal lake levels for lakes in Oakland County.</p> <p>At present there are 54 lakes within the County that have an established normal level. The Water Resources Commissioner is the delegated authority to maintain the normal levels of these lakes. The lakes are located in four river basins, distributed as follows: 34 in the Clinton, 13 in the Huron, 2 in the Rouge, 3 in the Shiawassee and 2 in the Flint.</p> <p>A staff Engineer heads the Lake Level Program, which involves the operation and maintenance of 36 lake level control structures and 8 lake level augmentation pumps. In some cases, the level of more than one lake is controlled from a single structure. There are three (3) lake level control technicians assigned to monitor the lake levels and perform the day to day operation of the structures.</p> <p>The regulation of a lake level provides for flood control, enhanced recreational use and protection of property values. The Water Resources Commissioner's Office is available to help facilitate the process of establishing a normal lake level with literature and technical expertise.</p> <p>WRC has emergency action plans for eight (8) of the dams as required by the State's Dam Safety Act. These plans are available upon request.</p> <p>Information on lake levels is available on the WRC Web site at: https://oakgov.com/government/water-resources-commissioner/stormwater/lakes-watersheds/lake-level-information.</p> <p>In FY 2020, WRC conducted an extensive study of publicly and privately owned dams within Oakland County per the request of the Board of Commissioners. That report is available on the WRC's website at: https://www.oakgov.com/home/showpublisheddocument/7762/638054990610270000</p>
Drainage District Mapping	<p>As of FY 2023, WRC has 457 assessment districts mapped and approved for use. Of these, 29 are Lake Level Assessment Districts, 428 are Drain Assessment Districts.</p>

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Stormwater Standards	<p>WRC: WRC employs three engineers, two senior engineering systems coordinators and two engineering technicians to review construction plans for any involvement with County Drains or their respective easements, mobile home parks, platted subdivisions and/or drain district enlargements as required by the Michigan Drain Code.</p> <p>WRC has a written procedure (P-012) to describe the method for the drainage review of construction plans and issuing of drain involvement permits in accordance with the Public Acts of 1956, the Michigan Drain Code, as amended, and WRC's Stormwater Engineering Design Standards.</p> <p>In FY 2022, WRC reviewed and approved 8 stormwater BMPs and all are privately maintained. In FY 2023, WRC reviewed and approved 9 stormwater BMPs and all are privately maintained. For a complete list of the variety of BMPs approved and maintained, see Appendix 14 WRC Drain Permit Stormwater BMP Tracking Summary Tables.</p> <p>-WRC Storm Drain Manhole Cover specifications were updated in FY 2010 and require that all new storm drain manhole covers are stamped with the message "stormwater Only - Dump No Waste! Drains to Waterway!" with a custom logo showing a heron, frog and fish.</p> <p>WRC's updated Stormwater Engineering Design Standards are available on the WRC website at: https://www.oakgov.com/government/water-resources-commissioner/stormwater/stormwater-engineering-design-standards There were a total of 2,261 website hits in FY2022 and 2,192 in FY2023 to the WRC's Stormwater Standards website.</p> <p>-Beginning in FY 2017, WRC tracks new developments and redevelopments that install infiltration BMPs. A spreadsheet is used to track the types of BMPs installed, as well as the responsible party for long-term operation and maintenance. Copies of the long-term O&M agreements are also kept on file and are available upon request.</p> <p>Beginning in FY 2023, WRC began working collaboratively to track post-construction BMPs through a regional post-construction tracker that is hosted by SEMCOG. Reports are generated and sent by SEMCOG to all participating communities, including WRC, for individual compliance submittal. The FY 2022 and 2023 reports for Oakland County are provided in Appendix 15.</p>
USGS Stream Flow Gauges	<p>-One (1) continuous-record gage station was financed by WRC in FY 2022 and FY 2023. This station is located at the Clinton River in Auburn Hills, Gage #0416000. -FY 2022 expenditures on gage operation totaled \$12,386 (USGS covered \$3,614 of the total \$16,000 cost) -FY 2023 expenditures on gage operation totaled \$12,386 (USGS covered \$3,614 of the total \$16,000 cost)</p> <p>-The data can be accessed from the USGS Web site at: https://waterdata.usgs.gov/monitoring-location/04161000/#parameterCode=00065&period=P7D&showMedian=false</p>
WRC Projects Under Development, Under Construction and Recently Completed	<p>A summary report of WRC's drain, sanitary sewer, drinking water systems, and retention treatment basin projects under design, under construction and completed is available online at: FY 2022: https://www.oakgov.com/home/showpublisheddocument/18814/638306478150400000 The FY 2023 report will be available on the WRC's website in the near future under the "WRC Annual Drain Projects Report" section available at: https://www.oakgov.com/government/water-resources-commissioner/resources/reports/wrc-reports</p>

**Pollution Prevention and Good Housekeeping for Municipal Operations
Employee/Contractor Training**

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Action/Activity

WRC:

FY 2022:

- 12 new WRC employees viewed the "Stormwater Management in Oakland County" training course via WorkDay and received a score of 80% or better on the post-training evaluation.
- October 2021 - Virtual training on IDEP Alert Observer, IDEP Investigator-level and general Stormwater Pollution Prevention and Good Housekeeping was held in partnership with SEMCOG and ECT, Inc. The following County staff attended the general IDEP awareness training session: **WRC** - 4 staff members, **OC Planning** - 1 staff member. The following County staff attended the IDEP Investigator-level training: **OCPRC** - 11 staff members; **WRC** - 4 staff members and **OC Planning** - 1 staff member. The following County staff attended the Pollution Prevention Good Housekeeping Training: **WRC** - 4 staff members, **OC Planning** - 1 staff member.

FY2023:

- 14 new WRC employees viewed the "Stormwater Management in Oakland County" training course via WorkDay and received a score of 80% or better on the post-training evaluation.
- October/November 2022 - Training on IDEP Alert Observer, IDEP Investigator-level and general Stormwater Pollution Prevention and Good Housekeeping was held in partnership with SEMCOG and ECT, Inc. The following County staff attended the general IDEP awareness training session: **WRC** - 2 staff members, **OC Parks** - 17 staff members, **OCFM** - 2 staff members. The following County staff attended the IDEP Investigator-level training: **OCPRC** - 3 staff members. The following County staff attended the Pollution Prevention Good Housekeeping Training: **OC Parks** - 1 staff member.
- 12/8/2022 - 16 **WRC** staff members at the Clinton River Water Resource Recovery Facility in Pontiac received training on general stormwater pollution prevention awareness, the County-s 24-Hour Pollution Hotline, and more specific details on their facility's SWPPP, PIPP and SPCC plans.
- 1/3/2023 - 9 **WRC** staff members at the Clinton River Water Resource Recovery Facility in Pontiac received training on general stormwater pollution prevention awareness, the County-s 24-Hour Pollution Hotline, and more specific details on their facility's SWPPP, PIPP and SPCC plans

OCPRC:

- Safety Training Packets containing Stormwater Pollution Prevention Good Housekeeping, and Spill Response and Safety Measure Protocols were provided to all park supervisors in May 2022 along with a packet including the following: Overview of the Oakland County Phase II Permit; Overview of potential maintenance facility environmental emergencies and facility response plans; List of vendors for spill response kits; Overview of the MI Turfgrass Environmental Stewardship Program; OCPR Surface Water Pollution Response Cards.
- In 2022 OCPR continued implementing 2 standardized forms for documenting inventory and assessment of storm water assets and pollution prevention activities at all park facilities - "OCPR Annual Facility Storm Water Pollution Prevention Inspection Report" and "Annual Storm Water Structure Inspection Sheet". These forms are completed annually by qualified staff at each park facility containing potential pollutants. Additionally, staff are completing their monthly inspections.

OCPRC:

In FY2022/23 OCPR continued to distribute an internal Best Practices Resource Guide for Parks and Facilities on Water Resource Permitting. Copies were re-distributed to parks supervisors, district chiefs, and project managers in winter 2022.

Contractors:

As part of the Oakland County Purchasing Procurement and contracting process, all contractors engaging in construction and related activities must be compliant with all EGLE and WRC stormwater regulations, and satisfy all associated permitting requirements. OCPR-hired project inspectors and general contract managers are Certified Stormwater Operators.

- At this time OCPR has 1 Certified Industrial Stormwater Operators on staff.
- 13 staff maintained MDARD Pesticide Applicator Certification at OCPR in FY22, by position: 3 Grounds Maintenance Supervisors, 1 Maintenance Supervisor, 2 Groundskeeper 1s, 2 Groundskeeper IIs, 4 Park Crew Chiefs, 3 Park Maintenance Aides
- 1 Chief of Park Operations holds the UST A Certification and 3 staff hold UST B Certifications for the Park where they work.
- OCPR staff remain compliant with required licenses for job tasks including but not limited to: pesticide application, underground storage tanks, CDL, etc. Three OCPR staff attended the Oct 18, 2022 SEMCOG University online webinar for IDEP Investigative Trainer.

Staff attended the following trainings in FY2022:

- Natural Areas Association Virtual Conference October 19, 2021 – 3 staff
- Land Conservation Conference October 7 – 9, 2021 – 1 staff
- Michigan Wetlands Association Winter Woody Plant ID November 4, 2021 – 2 staff
- Michigan Turfgrass Foundation Annual Conference Jan 4 - 6, 2022 in Lansing - 8 staff
- MSU Extension Intro to Lakes Certifications – 2 staff
- Natural Areas Association Stewardship in Action Virtual Field Workshop Jan 25, 2022 – 2 staff
- ArborCon Feb 15 – 16, 2022 – 1 staff
- Golf Course Superintendents Association of America Virtual Conference Feb 23 – 24, 2023 – 2 staff
- Parks Annual Conference March 6 – 9, 2023 – 10 staff
- Michigan Green Industry Association Not Your Average Walk in the Park Workshop June 30, 2022 – 1 staff
- MSU Turf School Aug 10, 2022 – 2 staff
- ISA Oakwilt Instructor Certification Sept 28 – 29, 2022 – 1 staff

Employee/Contractor Training Related to Stormwater Management Activities

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As of FY 2023, OCPR has three (3) Certified Industrial Stormwater Operators on staff.
 • 18 staff maintained MDARD Pesticide Applicator Certification at OCPR in FY23, by position: 3 Grounds Maintenance Supervisors, 2 Groundskeeper 1s, 5 Groundskeepers, 5 Park Crew Chiefs, 3 Park Maintenance Aides
 • OCPR staff remain compliant with required licenses for job tasks including, but not limited to: pesticide application, underground storage tanks, CDL, etc.
 • Ten (10) OCPR staff attended the 2023 SEMCOG IDEP Module 1 Alert Observer training, nine (9) staff attended Module 2 and eight (8) attended Module 3 (Pollution Prevention Good Housekeeping Training)

Staff attended the following trainings in FY2023:

- ISA Training – Instructor: 1 staff
- MWA Winter Woody Plants ID: 2 staff
- MSU Turf School: 1 staff
- Michigan Turfgrass Foundation Conference: 11 staff
- GLTE: 2 staff
- Stewardship Network Conference: 1 staff
- GCSAA: 1 staff
- Mparks Conference: 15 staff
- MI Healthy Climate Conference: 4 staff
- MWA Intro to Mosses: 2 staff
- MSU Tree Work 101: 1 staff
- NACPRO SPDF: 5 staff
- MWA Wetland Plant ID: 3 staff
- MWA Freshwater Mussels: 3 staff
- MSU Turfgrass Field day: 2 staff
- MGIA: Arborist Rigging Techniques: 2 staff
- EGLE Construction Stormwater Certification: 1 staff
- NRPA: 8 staff
- Michigan Regional Stormwater Summit: 2 staff
- NAA Conference: 2 staff
- 2023 Great Lakes PFAS Summit: 1 staff

OCFM:

In FY 2022, 12 OCFM staff viewed the Municipal Stormwater Pollution Prevention DVD on 8/2/2022.

As of FY 2023, OCFM has three (3) grounds maintenance staffers that are a Certified Industrial Stormwater Operator. All OCFM employees also viewed the Municipal Stormwater Pollution Prevention DVD.

As of FY 2023, the following County staff are Certified Industrial Stormwater Operators and/or Certified Construction Site Stormwater Operators - lists of certified staff are available upon request:

Industrial:

WRC - 9
 OCPRC - 4
 OCFM - 3

Construction:

WRC - 36
 OCPRC - 1

In FY 2013, Pollution Prevention language was added to the Notes section on the soil erosion and sedimentation control details sheet and is available electronically at: <https://www.oakgov.com/home/showpublisheddocument/5342/638051393429500000> to address the contractor training requirements

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Maintenance Activities for Stormwater Structural Controls

Action/Activity	
Bar Screen Cleanout	WRC staff cleaned 2,691 bar screens in FY 2022 and 2,607 in FY 2023. Maintenance records are tracked in CAMS (see DC-215, "Daily Bar Screens Work Report")
Catch Basin Cleaning	<p>WRC: In FY 2022, 387 cubic yards of storm debris was properly disposed of and 410 cubic yards of storm debris was properly disposed of in FY 2023. There were no catch basins cleaned during this timeframe. In FY 2024, it's anticipated that a contractor will be procured to address the backlog of catch basins in need of cleaning for WRC-maintained systems.</p> <p>The WRC Sewer Maintenance Unit properly disposed of approximately 1,172 cubic yards of debris/waste (450.5 yards from sanitary sewer systems and 721.5 yards from storm systems) in FY 2022. A total of 774 yards of debris/waste were properly disposed of in FY 2023 (603 yards from sanitary sewer systems and 171 yards from storm systems).</p> <p>OCFM: In FY 2022 - roughly 100 catch basins were cleaned out and 12 catch basins rebuilt. Between catch basin cleaning and street sweeping, approx. 326 cubic yards of debris was removed and disposed of properly. In FY 2023 - roughly 100 catch basins were cleaned out and 8 catch basins were rebuilt. Two new catch basins were installed as part of the road reconstruction on the Main County campus by the North Oakland Health Center. Between catch basin cleaning, street sweeping and the salt brine maker, approximately 352 cubic yards of debris was removed and disposed of properly. About 10% of rock salt is composed of "undissolvables" which is removed during the brine making process. Also, FMO's street sweeper was involved in an accident in August 2023 and was not returned to service until the end of FY 2023.</p> <p>OCPRC: In FY2017, Park Supervisors began conducting annual stormwater asset inspections at their facilities using a standardized inspection form. Standardized annual inspections provide the framework for the development of system-wide maintenance standards for stormwater asset maintenance, as well as, future maintenance budget forecasting. Currently, facility catch basins are cleaned on an as-needed basis that varies by location and operation. OCPR contracts with WRC and alternative Vector service contractors to perform catch-basin cleaning when needed. Maintenance will be completed in FY 2024.</p>
Pump Station Maintenance	<p>WRC operates and maintains stormwater pumping stations that help prevent flooding during rain events. The stations are inspected on a regularly scheduled interval to verify local/remote alarms are functional and that pump station equipment is working properly. Wet wells and bar screens in the storm and sanitary pump stations are cleaned twice per year. In addition, bar screens in stormwater pumping stations are cleaned after every significant rain event.</p> <p>WRC has a written work instruction outlining the method for sewer/drain cleaning and maintenance (SW-1503) and is available upon request.</p> <p>Reports are available through WRC Operations and Maintenance upon request (see Form DC-139, "Pump Station Checklist", Form DC-193, "Daily Maintenance Work Report", Form DC-222, "Sanitary Wet Well Maintenance Form", and Form DC-179, "Sanitary Wet Well Weekly Maintenance Form").</p>
Sanitary Sewer Maintenance and Inspections	<p>WRC: FY 2022: WRC staff performed 419 manhole inspections and 163 manhole repairs, CCTV'd 318,143 linear feet of sewer, and cleaned 297,031 linear feet of WRC-owned or -operated sanitary sewer systems. In addition, there were 478 complaints and 60 plugged sewers logged. FY 2023: WRC staff performed 2,028 manhole inspections and 191 manhole repairs, CCTV'd 578,010 linear feet of sewer, and cleaned 470,355 linear feet of WRC-owned or -operated sanitary sewer systems. In addition, there were 433 complaints and 54 plugged sewers logged.</p> <p>WRC Sewer Maintenance Unit properly disposed of approximately 450.5 yards of sanitary and 721.5 yards of storm debris/waste in FY 2022 and 603 yards of sanitary and 171 yards of storm debris/waste in FY 2023.</p>
Stormwater Detention/Retention Basin Maintenance and Inspections	<p>WRC: In FY 2022 and 2023, there were no stormwater detention basins inspected or cleaned.</p> <p>Inspections are documented on Form DC-450, "WRC stormwater Detention Basin Field Report" and are available upon request.</p>

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Storm Drain Maintenance and Inspections	<p>WRC: WRC performs necessary maintenance on County Drains as budget and schedule allow. Maintenance Mechanic 1's and above are certified stormwater operators and have completed soil erosion training. WRC complies with proper procedures to protect the drain from erosion, reduce the amount of solids entering the drain, stabilize stream banks and protect aquatic habitat.</p> <p>In FY 2022, WRC inspected 4,924 structures, 96 drains and performed 1,601 structure repairs. In FY 2023, WRC inspected 6,510 structures, 93 drains and performed 911 structure repairs.</p>
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Pollution Prevention and Good Housekeeping for Municipal Operations

Controls Used for Reducing or Eliminating Discharges of Water and Pollutants from Streets and Maintenance Garages

Fleet Maintenance and Storage Yards	<p>WRC: The following WRC facilities have existing SWPPPs, PIPPs and/or SPCCs and have met all eligible requirements to date:</p> <ul style="list-style-type: none"> ● 8 Mile Road Pump Station - SPCC updated August 2022 ● Walnut No. 1 Pump Station - SPCC updated August 2022 ● Elizabeth Lake Pump Station - SPCC updated July 2020 ● Northeast Sewage Pump Station - SPCC and PIPP updated January 2020 ● 522 S. Opdyke - Water Maintenance North; SWPPP updated October 2023 ● Pontiac Water Booster Station - SPCC updated July 2020 ● The Pontiac WWTPs - Auburn and E. Blvd Sites updated SWPPPs in May 2023 ● The Pontiac WWTPs - Auburn and E. Blvd Sites updated PIPPs in May 2023 ● The Pontiac WWTP - Auburn Site updated SPCC May 2023 ● Pump Maintenance Building - PIPP updated July 2023 ● All four (4) Retention Treatment Basins and the Pump Maintenance and Systems Control Complex have a PIPP - updated September 2022 ● The Commerce Waste Water Treatment Plant SWPPP was updated September 2021; the PIPP was last updated in July 2023; the SPCC was updated April 2023 ● The Walled Lake-Novis (WLN) Waste Water Treatment Plant SWPPP was updated September 2021; the PIPP was last updated in July 2023 <p>All of these plans are available upon request.</p> <ul style="list-style-type: none"> ● Spill cabinet inventory inspections were conducted at all WRC facilities with a SWPPP/PIPP/SPCC's in April 2023 <p>OCFM: FY 2022 and 2023 - Continuing with good housekeeping practices and monthly, quarterly and yearly inspections of shop and chemicals in line with OCFM's Integrated Contingency Plan (ICP) which is a combination of a Spill Prevention, Control & Countermeasure Plan, Pollution Incident Prevention Plan, Storm Water Pollution Prevention Plan, RCRA Contingency Plan and OSHA Emergency Response Plan</p> <p>OCPRC:</p> <ul style="list-style-type: none"> ● OCPRC continues (since 2010) to maintain a contract for system-wide purchase and use of 'green' cleaning products - this is part of the OCPRC Green Initiatives Program ● All park facilities now utilize "green" cleaning products that are low in volatile organic compounds, reducing the amount of toxins in the air and reduce water contamination in the environment ● Biofuels and biolubricants are used in heavy equipment, mowers, and utility vehicles in the park fleet when and where the benefits of such products outweigh those of using conventional fuels, oils, and lubricants. ● All park maintenance yards are required to do an annual pollution prevention inspection and refresh their on-site and vehicular spill kits and spill response plans. Inspection reports since FY 2017 available upon request. <p>Several OCPRC facilities are pursuing certification or recertified under the MTESP program (see below under MTESP activity) which addresses many of the requirements in a SWPPP/PIPP/SPCC plan.</p> <ul style="list-style-type: none"> ● Currently the following parks achieved lifetime recertification with the MTESP program: Springfield Oaks, Lyon Oaks, White Lake Oaks, Red Oaks, Groveland Oaks. Addison Oaks is anticipated to achieve certification by the end of 2023.
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Action/Activity	
Road Salt Application	<p>OCFM: OCFM continues to maintain its covered salt storage structure that holds up to 1,000 tons of salt and its self-contained Salt Brine Maker stored in the Grounds shop which produces salt brine for its use.</p> <p>FY 2022 - Salt Brine used exclusively on sidewalks. A product called Headwaters Hot, a sugar-based additive, was added to the salt brine to bring its effective temperature to minus 5 degrees Farenheit. Three 1,000 gallon spray units are in, but too late to use in 2022.</p> <p>FY 2023 - 100% Salt brine and Headwaters Hot used on sidewalks, parking areas and roads. This cut salt use by 80%. A fourth 1,000 gallon spray unit and another Salt Brine Maker were added this year.</p>
Street Sweeping Programs	<p>OCFM: OCFM-Grounds Division cleans all county-owned streets and parking lots (approximately 40 acres of parking lot and 3 miles of roadway) throughout the year. A Tymco Regenerative Air Street Sweeper was purchased in 2020.</p> <p>In FY 2022- between catch basin cleaning and street sweeping, approx. 115 cubic yards of debris was removed and disposed of properly. In FY 2023 - between catch basin cleaning and street seweeping,approx 5 cubic yards of debris was removed and disposed of properly.</p>
	<p>WRC: In FY 2022, no batteries were recycled. In FY 2023, 280 pounds of batteries were recycled. In FY 2022 and 2023, WRC prevented a total of 64 pounds of recyclables from entering Michigan landfills.</p> <p>OCPRC: -Parks employees recycle paper, plastic, metals, batteries, lights and ink cartridges in special collection containers -The entire parks system now uses 100% recycled paper</p>

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Waste Reduction Program	<p>OCFM: FY 2022- Ten "Big Belly" solar powered compacting trash containers have been approved for purchase. Still awaiting delivery. There was 555,761 pounds of paper recycled. FY 2023 - Ten "Big Belly" solar powered compacting trash containers were installed and currently in use. There was 630,566 pounds of paper recycled. Oakland County's Sustainability Officer, Erin Quetell, is looking into a Single Stream Recycling Program.</p> <p>In FY 2022: 555,761 pounds of paper were recycled. This equates to the following environmental benefits:</p> <ul style="list-style-type: none"> ● 4,723 trees saved ● 1,000 cubic yards of waste kept out of landfills ● 1,945,164 gallons of water saved ● 667 barrels of oil saved ● 1,105,964 kwh of electricity saved <p>In FY 2023: 630,566 pounds of paper were recycled. This equates to the following environmental benefits:</p> <ul style="list-style-type: none"> ● 5,360 trees saved ● 1,135 cubic yards of waste kept out of landfills ● 2,206,981 gallons of water saved ● 756 barrels of oil saved ● 1,254,826 kwh of electricity saved
Pollution Prevention and Good Housekeeping for Municipal Operations	
Managing Vegetated Property	
Fertilizer Use	<p>OCFM uses a 50% slow-release granular fertilizer on County property. A soil test is also conducted every three years to determine the soil conditions. OCFM is also using organic fertilizer in four areas as a pilot. Beginning in 2013, Phosphorus has been eliminated from our granular fertilizer program. FY 2022- Two rounds of slow release fertilizer applied to turf. 15 additional acres of turf was converted to a "no mow" area. No fertilizer in this area. FY 2023 - Two rounds of slow release fertilizer applied to turf. "No Mow" areas are mowed once in the spring.</p> <p>OCPRC adheres to the phosphorus fertilizer regulations with the exception of golf course properties demonstrating exemption through soil test results. OCPR conducts soil testing through MSUE laboratories to inform all planting projects associated with major maintenance and capital improvement projects.</p>
Greenbelt Maintenance	<p>OCFM continues to maintain a buffer zone along ditches. The buffers are not fertilized or mowed. These buffer zones were expanded in 2012/2013, as part of a USEPA grant, administered through SEMCOG, as part of the "Regional Green Streets" initiative.</p> <p>FY 2022- Mowed Phragmites infested areas. Completed one controlled burn on Phragmites. FY 2023 - Continued mowing Phragmites infested areas. Completed one controlled burn on Phragmites.</p> <p>OCPRC - All parks now have designated "no-mow zones" that decrease the amount of gas and energy used in maintaining park property and allows for natural plant progression and reduces runoff into adjacent waterways. OCPR maintains constructed vegetated swales containing native plant materials or ecoturf for parking lot/ facility stormwater management at the following OCPR parks: Waterford Oaks, Red Oaks, Catalpa Oaks, Glen Oaks and Groveland Oaks. New no-mow zones were implemented at Waterford Oaks, Independence Oaks and Addison Oaks in FY 2022.</p>
Irrigation Practices	<p>OCFM: In FY 2012, OCFM completed the installation of moisture sensors for the entire 100 acres of irrigated turf on the campus. These moisture sensors monitor the relative humidity, temperature, and rain amounts, and automatically alter the system to run according to a preset amount of moisture. These sensors have already shown a dramatic cut back on water use. OCFM staff have conservatively projected a return on investment of two to three months on this expenditure.</p> <p>FY 2022 - Continuing to install Hydrowise systems. Hydrowise is a web-based program that monitors the amount of water used by zone and allows remote adjustment of zone times. It also sends a notice to the Irrigation Tech if excess water is being used. FY 2023 - Continuing to install Hydrowise systems.</p>

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Action/Activity	
Mowing Practices	<p>OCFM - Mower blades have been set at a height of four inches to follow the Michigan Turf Grass recommendation. FY2022 - added another 15 acres that is designated "no mow" zone. FY 2023 - Mow "no mow" areas once in the spring.</p> <p>OCPRC - All parks now have designated "no-mow zones" that decrease the amount of gas and energy used in maintaining park property and allows for natural plant progression and reduces runoff into adjacent waterways.</p>
Pesticide Applications	<p>OCFM: All 9 of the OCFM full-time grounds keeping staff are certified pesticide applicators. Staff are retested every three years to maintain certification. OCFM has had certified pesticide applicators on staff since 1976. In addition, OCFM has been practicing integrated pest management (IPM) techniques for close to 30 years for both indoor and outdoor operations. A Drift Management Plan was developed in 2011 and is available upon request.</p> <p>FY 2022 - Continued with tree injections, especially for Spongy moth. Using more pre-emergents in beds and non-vegetated yard areas instead of post emergent spraying. Added Cheetah Herbicide, a.i. Glufosinate, for post emergent bed weed control instead of Round-up (glyphosate).</p> <p>FY 2023 - Purchased a steam weeder. Reduced pesticide applications by 25%.</p> <p>OCPRC: Integrated pest management principles are established at all parks to reduce the use of chemical pesticides. In FY 2022, OCPR NR employed 8 certified pesticide applicators and 15 certified pesticide applicators in FY 2023. Within the OCPRC Natural Resource Management Department, aquatic-safe herbicides and surfactants are used as a BMP. Park Drift Management Plans are reviewed annually and updated as-needed.</p>
Prescribed Burn Program	<p>In 2007, Oakland County Parks initiated a Prescribed Burn Program for Natural Area Restoration.</p> <p>To date, prescribed burns have taken place on more than 2500 acres at Addison, Independence, Rose, Groveland, Orion, Highland, White Lake, Springfield, Waterford, and Lyon Oaks where fire is being used to restore both upland and wetland natural areas and improve habitat quality within the parks. The timing of burns is carefully planned to minimize risk to park wildlife. The burns reduce shrubby invasives, release nutrients into the system, and facilitate microhabitat that favors native forbs, grasses, sedges, and wildflowers.</p> <p>Burns take place under the supervision of Oakland County Parks staff and licensed professionals, in cooperation with local fire departments. In FY 2022, OCPR burned approximately 345 acres. In FY 2023, approximately 596 acres were burned.</p>
Turf Management Training	<p>OCPRC: Oakland County Parks has partnered with the Michigan Turfgrass Environmental Stewardship Program (http://www.mtesp.org) to increase environmental stewardship and water quality management at several Oakland County Park Golf Courses.</p> <p>Components of the Golf Course Program include: -Compliance with environmental laws & regulations. -Reduced herbicide and fertilizer applications. -Environmentally-sensitive course maintenance. -Green Purchasing, Energy Conservation & Waste Reduction. -Wildlife corridors, no-mow zones and prescribed burns.</p> <p>In 2008, Groveland Oaks was the first park in Michigan to be environmentally certified by the Michigan Turfgrass Environmental Stewardship Program. All 5 OCPRC golf courses have been recertified through the program as of FY 2019. Addison Oaks and Waterford Oaks went through initial evaluation for MTESP certification in FY 20013 and FY 20014 respectively, and are currently working toward implementing recommended environmental action items prior to final certification.</p> <p>OCFM continues to implement best practices related to mowing, fertilization, pesticide use and irrigation. FY 2022 - Pesticide Applicators have attended seminars for re-certification credits. FY 2023 - Pesticide Applicators have attended seminars for re-certification credits. Five Certified Applicators have been added to staff.</p>

Total Maximum Daily Load (TMDL) Implementation

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TMDL Plan Implementation	<p>WRC: In FY 2022, the results of wet weather sampling of several county drains within the southeast portion of Oakland County is detailed in Appendix 16, "GWK Phase 3 Report". In FY 2023, an automatic sampler was purchased by WRC and will be utilized for future TMDL monitoring.</p> <p>See also measurables provided in this Biennial Report related to: - Public education related to pet waste, waterflow and onsite sewage disposal system management - IDEP, OSDS permitting, operation and maintenance, CSO RTB and WWTP operations - SESC Programs - Post-Construction Stormwater Standards implementation - Pollution Prevention and Good Housekeeping activities, including: catch basin cleaning, street sweeping, sanitary sewer maintenance, goose management (Roundup programs), no-mow zones, use of low/no-phosphorus fertilizers and implementation of stormwater pollution prevention plans.</p> <p>Partner TMDL Work: A number of agencies and partner groups have completed water quality monitoring work to help inform progress towards meeting TMDL requirements in area watersheds. A summary of all the relevant work includes the following documents: - GLWA Watershed Hub Work Group Annual Monitoring Report, February 2024 (Appendix 17). - ARC 2022 and 2023 TMDL Report (Appendix 18). - EGLE 2022 Integrated Monitoring Report (Appendix 19). - FOTR 2022 and 2023 Monitoring Reports (Fish Studies, Macroinvertebrate and Frog/Toad Surveys) for 2022 and 2023 (see "Friends of the Rouge Monitoring Activities" referenced below)</p>
Extra Activities (Not included in SWMP)	
Adopt-A-Stream Training Workshops	<p>In FY 2022, the CRWC conducted 8 Adopt-A-Stream volunteer trainings and 2 bug ID workshops for the watershed community. A total of 56 people attended these workshops and trainings. Trainings were held mainly in-person with a few trainings held virtually. formats.</p> <p>In FY 2023, the CRWC conducted 9 Adopt-A-Stream volunteer trainings and 2 Bug ID workshops for the watershed community. A total of 43 people attended these workshops and trainings. Trainings were held mainly in-person with a few trainings held virtually.</p>
Adopt-A-Stream Volunteer Water Quality Monitoring Program	<p>In FY 2022, a total of approximately 148 volunteers participated in the CRWC's Spring and Fall Adopt-A-Stream monitoring and monitored a total of 39 stream sites within the watershed.</p> <p>In FY 2023, a total of at least 175 volunteers participated in the CRWC's Spring and Fall Adopt-A-Stream monitoring and monitored a total of 46 stream sites within the watershed.</p>
Alliance of Rouge Communities Activities	<p>A summary of Alliance of Rouge Communities (ARC) activities throughout FY 2022 and FY 2023 that support the efforts of Oakland County's natural resource protection and preservation efforts are provided in Appendix 20, "ARC Executive Director's 2021 and 2022 Annual Report".</p> <p>The ARC also prepared a number of summary documents related to progress on its collaborative PEP, PPP, and IDEP plans as follows: - 2022 ARC Public Awareness Survey (Appendix 21) - 2020-2023 ARC Collaborative PEP Progress Reports (Appendix 22) - 2020-2023 ARC Collaborative PPP Progress Reports (Appendix 23) - 2020-2023 ARC Collaborative IDEP Progress Reports (Appendix 24)</p>
Art-Fish-Fun Festival	<p>In FY 2022, the festival was held on June 11, 2022 with approximately 250 attendees and a variety of vendors and environmental activities.</p> <p>In FY 2023, the 2023 Art Fish Fun Festival returned to pre-Covid numbers, bringing in an estimated 400 attendees. In addition to the attendees, there were 70 people facilitating activities representing 37 different companies, non-profits, and community organizations. These organizations represent local groups that have a particular interest in environmental education, serving the greater Pontiac community, and providing opportunities for residents to connect with the arts, nature, and the humanities at large. The day kicked off with a one-hour long park cleanup. 18 people participated and helped to remove 18 bags of garbage from the park. There was a total of 10 event sponsors, including both monetary and in-kind, which helped to keep this event free to the public. A BBQ lunch and ice cream was also provided for 300 guests.</p> <p>The festival was hosted in collaboration with WRC, Pure Oakland Water, Clinton River Watershed Council, The Art Experience in Pontiac and the City of Pontiac.</p>

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Blue Planet Jobs: Careers in Water Event	WRC, in partnership with the Oakland Schools Career Readiness Program and the Cranbrook Institute of Science: Freshwater Forum, hold an annual event for 10th and 11th grade students to engage with industry experts to learn about the important careers available related to the natural resource of water. Students participate in four (4) 25-minute interactive presentations from water industry professionals in the areas of engineering, environmental science, and education, non-profits, government, facility operations and the trades. In FY 2023, a total of 131 students from five (5) schools attended on October 17, 2022 (from schools in Ferndale, Lapeer, Pontiac and Oakland Schools' Technical Campus' Northwest and Southwest).
Clinton Cleanup	In FY 2022, the CRWC coordinated a total 17 volunteer trash cleanup events within the watershed for Clinton Cleanup. 237 volunteers attended and collected approximately 2,124 pounds of trash. Volunteers included local community members, government partners, and corporate sponsors like KPIT, PTI, and Genisys Credit Union. We continued to partner with local liveries who donate the use of kayaks and canoes to collect debris in-stream. In FY 2023, CRWC coordinated a total of 15 volunteer trash cleanups within the watershed for Clinton Cleanup. 276 volunteers attended and removed over 1,287 pounds of trash and yard waste. Volunteers included community members, government partners, and sponsors such as GM, Genisys Credit Union, and PTI.
Clinton River Watershed Council Collaborative Public Education Plan (PEP)	The CRWC works collaboratively with many municipalities, Macomb and Oakland counties and MSU-Extension within the Clinton River watershed to address the public education goals of the MS4 program. A summary of the FY 2022 and 2023 efforts as part of the Collaborative PEP are available in Appendix 25 and on the CRWC's "Stormwater Communities" website under "Other Resources, MS4 Permittees" at: https://www.crwc.org/programs/education/communities
Clinton River Watershed Explorer Tool	In FY 2022, a tool was developed to explore issues facing the Clinton River Watershed. The tool allows users to explore the watershed, learn about water-related issues, and evaluate different strategies to manage water now and in the future in the watershed. Parameters including E. coli, water volume and water monitoring in the watershed can be explored with the tool. It's available online at: https://iwr.msu.edu/clintonriver/home
CRWC Weekly Clean Program	In FY 2022, the CRWC coordinated a total of 33 weekly cleanups as part of the Weekly Clean volunteer stewardship program. Of the 33 scheduled cleanups, 2 were cancelled due to inclement weather. Volunteers new and old contributed a total of 672 volunteer hours and collected approximately 2,917 pounds of trash from the Clinton River, its tributaries and surrounding park areas. In FY 2023, CRWC coordinated a total of 31 cleanups as part of the Weekly Clean volunteer stewardship program. Of the 31 cleanups, 1 concluded early due to inclement weather. Volunteers new and old combined their efforts of 1,034 volunteer hours and collected approximately 6,500 pounds of trash from the Clinton River, its tributaries and surrounding park areas.
Flow Monitoring Sensors Initiative	Open-storm.org is an open source blueprint for smart water systems founded by Professor Kerkez and the Real-Time Water Systems Lab at the University of Michigan. The project builds upon the same advances found in cell phones and autonomous cars to transform how we manage our water. From wireless sensors to real-time applications, we combine the flow of water with the flow of information to help watershed managers monitor and manage aging water infrastructure, which can be over decades old, sometimes older than a century. Looking ahead, these advances not only help inform maintenance and alerts (e.g. flood warnings), but also promise a future where existing valves and pumps are operated in real-time to instantly "redesign" existing infrastructure to be used much more effectively. Today we are laying the foundation for smart stormwater systems, starting with a massive network of wireless water level sensors. These sensors enable us to more finely track the movement of water throughout Oakland County and beyond. These efforts are just the first step in a new pilot by the Michigan Department of Environment, Great Lakes, and Energy and its partners to deliver the latest innovations in stormwater management throughout the Clinton River Watershed and Huron River Watershed. WRC has coordinated the installation of 17 sensors in relation to its lake level monitoring sites within the Clinton River Watershed. Currently, there are: - 40 sensors in the Clinton River watershed (20 in Oakland County) - 25 sensors in the Huron River watershed (2 in Oakland County) - There are hopes to expand the program into the Rouge River watershed. In FY 2021, most of the sensors installed were updated to a new model.
Friends of the Rouge Monitoring Activities	A summary of FOTR monitoring activities that help support the natural resource protection and preservation efforts in Oakland County include: • 2022 and 2023 Spring Bug Hunt Reports (Appendix 26). • 2022 and 2023 Fall Bug Hunt Reports (Appendix 27). • 2022 and 2023 Winter Stonefly Search Reports (Appendix 28). Bug Hunt Finding Maps for FOTR are available online at: https://therouge.org/bug-hunt-finding-maps/ • 2022 and 2023 Frog and Toad Survey Reports (Appendix 29). The 1998-2023 survey map is available online at: https://www.arcgis.com/home/webmap/viewer.html?webmap=e4b18f04c7ba41d994ada14baefd717d&extent=-83.7804,42.1809,-82.4346,42.6554 . • 2022 and 2023 Rouge River Fish Monitoring Reports (Appendix 30). A summary of all the species of fish found in the Rouge River are available on the FOTR website at: https://therouge.org/species-of-fish-found-in-the-rouge-river/ A map of the sampling locations is available online at: https://www.google.com/maps/d/u/0/viewer?mid=1KceRpGBvwuHoMZV8vN08nzkJfXEOGfC&ll=42.4461277191809%2C-83.37838249999997&z=11

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Goose Management	<p>In an effort to curb nuisance geese populations on County properties to protect water quality from excess nutrients and bacteria, the following properties utilize services as follows:</p> <p>OCPRC: A combination of goose control methods is implemented annually as-needed based on the size of the goose population and associated nuisance levels at the following County Parks: -Addison Oaks -Groveland Oaks -Glen Oaks -Independence Oaks -Lyon Oaks -Orion Oaks -Red Oaks -Springfield Oaks -Waterford Oaks -White Lake Oaks</p> <p>OCFM: As of FY 2023, Facilities employs Gooseworks which utilizes a dog to chase away the geese on Campus property; they are contracted to work in the Spring, two times daily for about 1.5 months and in the Fall, two times daily for about 3 months.</p>
Green Infrastructure Initiatives in Oakland County	<p>In FY 2023, SEMCOG awarded the WRC a \$95,000 grant for a green infrastructure project as the George W. Kuhn (GWK) Retention Treatment Basin in Madison Heights (Clinton River Watershed). The project will convert approximately four (4) acres of turf grass into native grow zones and a large rain garden will be constructed next to the parking lot to collect stormwater runoff from the surrounding area. A blog post was shared to County employees and beyond about the project at: https://oaklandcountyblog.com/2023/07/19/oakland-county-water-resources-receives-funding-for-stormwater-improvement-project/#more-59666.</p> <p>The project will result in numerous environmental benefits and aims to:</p> <ul style="list-style-type: none"> - Improve water quality - Help infiltrate water into the ground using native plants - Reduce pollutants from entering the system - Decrease the carbon footprint of the George W. Kuhn Retention Treatment Basin - Provide public education on the impacts of stormwater - Increase climate resilience
Groundwater Model Program (MSU-Extension)	<p>MSUE: Groundwater model demonstrations were conducted at a variety of MSUE-sponsored and partner-sponsored events. In FY2022 and FY2023, demonstrations were given as part of "Gardening to Protect Water Quality" trainings that were part of the Master Gardener Program (see Master Rain Gardener details below). A 20-minute model demonstration recording was made available as part of the Michigan Water School webinar series (https://www.canr.msu.edu/water-school/video-series). Another video (located here: https://mediaspace.msu.edu/id/1_9vwq3qh8) was created for use at the virtual Rouge River Water Festival in Fall 2021. In 2022, in-person groundwater model demonstrations were also given to 173 students at the Rouge River Water Festival at Cranbrook Institute of Science on 9/15/2022, 71 students at the Blue Planet Jobs: Careers in Water event on 10/17/2022 at Cranbrook Insitute of Science, and 62 students at the Clinton River Water Festival on 5/20/2022 at Oakland University. In 2023, in-person groundwater model demonstrations were given to 135 students at the Clinton River Water Festival at Oakland University on 5/19/2023, and 160 students at the Rouge River Water Festival at Cranbrook Institute of Science on 9/21/2023 and 9/22/2023.</p>
Huron River Watershed Council Programming	<p>A summary of HRWC outreach and monitoring activities for 2022-2023 that help support the natural resource protection and preservation efforts in Oakland County are provided in Appendix 31.</p>
Master Gardener Volunteer Program (MGVP)	<p>In Fall 2021, 40 participants were enrolled in the Oakland County Extension Master Gardener Volunteer Program. Each participant received 40+ hours of instruction including a 2-hour water quality presentation and groundwater model demonstration that is part of the Chapter "Gardening Practices to Protect Water Quality." In 2023, the Extension Master Gardener went through an overhaul, and no programs were held. In 2023, 88 participants went through the MSU Extension Foundations of Gardening online course, which is a comprehensive 10-week online MSU Extension course that explores many aspects of gardening, including Environmental gardening covering gardening practies to help protect water quality.</p>

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Master Rain Gardener Certification Program (Virtual)	<p>In FY 2022, the 1st annual Master Rain Gardener Certification Program was held virtually from Mar, 3, 2022 - April 7, 2022. The course is taught virtually, with in person rain garden tours, with many project partners including: Washtenaw County Water Resources, Huron River Watershed Council, Friends of the Rouge, River Raisin Watershed Council, Clinton River Watershed Council, Oakland County Water Resources, Friends of the Detroit River, and the Clinton-Oakland Metroparks. There were a total of 82 participants in the 2022 virtual class.</p> <p>In FY2023, the 2nd annual Master Rain Gardener Certification Program was held virtually from Feb. 23 - March 23, 2023. The course is taught virtually, with in person rain garden tours, with many project partners including: Washtenaw County Water Resources, Huron River Watershed Council, Friends of the Rouge, River Raisin Watershed Council, Saline Be Green, City of Ann Arbor, Clinton River Watershed Council, Oakland County Water Resources, Friends of the Detroit River, Alliance of Downriver Watersheds, and the Clinton-Oakland Metroparks. There were a total of 71 participants in the 2023 virtual class.</p> <p>More information about the program can be found online at: www.MasterRainGardener.org.</p> <p>A mapping application developed by Washtenaw County is available to view projects submitted by those that have installed rain barrels, rain garden, native plant gardens and more at: https://gisappsecure.ewashtenaw.org/public/rainscaping/?page=Home As of FY 2023, a total of 426,800 gallons of stormwater are managed annually in Oakland County via 101 green infrastructure practices (rain gardens and rain barrels) that have been installed and mapped through the application in Oakland County.</p>
Michigan Cooperative Lakes Monitoring Program (CLMP)	<p>Information about the Cooperative Lakes Monitoring Program can be found online at: https://micorps.net/lake-monitoring/. The 2022 CLMP Annual Report is available online at: https://micorps.net/wp-content/uploads/2023/06/2022_CLMP_annual_summary.pdf. The Spring 2023 Phosphorus sampling results report is available online at: https://micorps.net/wp-content/uploads/2023/08/2023-Spring-Phosphorus.pdf. During FY2022-3, the following number of lakes in Oakland County were enrolled in the Cooperative Lakes Monitoring program each year: 2021 (21); 2022 (22); 2023 (25).</p>
Michigan Conservation Stewards Program (MCSP)	<p>The Michigan Conservation Stewards Program offered 6 "Conservation Conversations" in-person educational events in Spring 2023. One of these events, featuring Lizz Parkinson whose presentation was entitled, "Illuminating the Shoreline: Influence of light pollution on freshwater environments, was held at Cranbrook Institute of Science on 4/11/2023 and attended by 39 participants.</p> <p>Due to the inability to deliver in-person programs due to pandemic restrictions which began in March 2020, the in-person program was converted to a fully virtual format and offered Fall 2021. 137 participants enrolled in this virtual offering, including 42 participants from Oakland County. The virtual offering consisted of 10 sessions over 10 back-to-back weeks of Zoom instruction delivering 2 hours of content each week. Topics included Foundations of Ecology, Aquatic Ecosystems, and Terrestrial Ecosystems. Details regarding the number of volunteer hours and additional advanced training hours completed during 2021, 2022, and 2023 can be found in Appendix 32, "Annual Michigan Conservation Stewards Program Report-at-a-Glance". The following optional field trips were held for the virtual program in partnership with Oakland County Parks, Indian Springs Metropark, Six Rivers Land Conservancy and Oakland Audubon: Prairie Fens and Beavers (12 participants), Birds & Natural Communities (10 participants), Prarie Fen ecosystems at Davis Overview in Springfield Township (10 participants), Forest Pests/Diseases and Tree ID (10 participants), Golden Preserve (10 participants) and Prescribed burns/ecological mowing (10 participants). Volunteer hours and dollar values of their service are also included in Appendix 32.</p> <p>In Fall 2023, the Michigan Conservation Stewards Program was delivered via a hybrid delivery model to 173 participants in seven locations throughout the state, including 26 participants in the Oakland County cohort. Topics covered included the foundations of conservation (ecology, natural communities, society and conservation, and conservation heritage), aquatic ecosystem (lakes, streams and wetlands), and terrestrial ecysystems (grasslands and forestlands). Participants attended 8 in-person sessions and 1-2 in-person Saturday field sessions. Each student also completed a capstone (applied) project with a community partner. Classes began on September 13, 2023 and concluded on November 15, 2023.</p>
Michigan Water School: Essential Resources for Local Officials	<p>MSUE's previously fully in-person "Michigan Water School: Essential Resources for Local Officials" was converted to a 4-session webinar series and delivered in 2020. This program targets local decision makers and appointed and elected officials as well as other municipal officials involved in making water management decisions. The program seeks to present relevant information needed to understand Michigan's water resources and increase awareness of current and future local and state water issues. Finally, the program seeks to deliver to its target audience the fundamentals of water science in order to support sound water management decisions. The core curriculum topics included: Water Quantity; Water Quality; Economics, Finance and Planning; and Water Policy. The webinar series included core content delivered by MSU/E staff, panel discussion with representatives from state and regional experts, and several online resources including the Water Policy Toolkit and a groundwater model demonstration video. All recordings and additional resources were made available during FY2022/2023 at: https://www.canr.msu.edu/water-school/video-series.</p> <p>In 2021, The Michigan Water School Team worked with the MSU National Charette Institute to conduct a formal evaluation process to review the program and develop a strategic plan for the next iteration of the program. These sessions included the following individuals and groups: Michigan Water School Advisory Council, Water School Team, watershed partners and stakeholders and program participants. During FY2022-2023, this program was being transitioned to an online program in partnership with SEMCOG.</p> <p>In addition, in Fall 2021, MSU Extension Educators Bindu Bhakta and Mary Bohling conducted visits with 18 state legislators who represented the 6 watersheds that the Michigan Water School worked with including the Clinton River, Rouge River, Huron River, Detroit River, St. Clair and River Raisin Watersheds.</p>
MSUE News articles and MSUE Oakland County Conservation Connections Monthly Newsletter	<p>In FY2022-2023, educational articles were written on a variety of subjects related to management of water and natural resources, published by MSU Extension (https://www.canr.msu.edu/outreach/). Topics include water quality, attracting wildlife to inland lake shorelines, stormwater solutions, and septic system management. A list of articles is posted at: https://www.canr.msu.edu/people/bindu_bhakta and https://www.canr.msu.edu/natural_resources/index</p> <p>MSUE Oakland County also published a Conservation Connections monthly e-newsletter that was delivered monthly to 2,000 individuals who signed up to receive it. Contents focused on natural resource news articles, resources, training opportunities and volunteer opportunities. 12 additions were published in 2021 January to December and 9 editions in 2022 January to September. Due to changes in services provided by the County, no Conservation Connections were published in 2023 and they were no longer available as archived copies on the Oakland County web site.</p>

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MSU Extension Smart Gardening "Smart Shorelands" Tipsheet series	MSU Extension Educators, Paige Filice, Erick Elgin and Bindu Bhakta worked with MSUE Consumer Horticulture Educator Rebecca Finneran to develop a series of 5 tipsheets on earth-friendly, Smart Gardening practices targeting waterfront property owners who are engaged in lawn and garden activities that can have a negative or positive impact on lakes, streams and wetlands. The "Smart Gardening for Shorelands" tip sheets were released in 2021 and revised in Fall 2023. Smart Gardening Extension Volunteers were also trained on these topics so they could talk to the public about these topics at outreach events held across the state. The tipsheet series can be found at: https://www.canr.msu.edu/home_gardening/tip_sheets/smart-shorelands
Native Plant Initiative	<p>In the summer of 2020, the Oakland County Board of Commissioners launched the Native Plant Initiative. The program is designed to educate residents about the ecological benefits of cultivating native plants. Native plants help prevent the spread of invasive species, which can crowd out other local species, contribute to erosion, promote the use of toxic pesticides and cause other problems for natural habitats.</p> <p>Events hosted in 2022 and spring of 2023 have helped distribute more than 1200 bundles, each containing dozens of native plants, to residents from many cities, villages and townships across Oakland County. Participants signed an environmental stewardship pledge and received kits with native flora along with information on how to plant and care for these beneficial species in their own gardens. More information about the program is available at: https://www.oakgov.com/community/oakland-county-parks/get-involved/native-plant-information.</p> <p>Educational resources created by MSU Extension for these distributions included webinars on "Selection and Care of your native Plant Kits" and "Pollinator Gardens and Our Food Systems."</p>
Native Plant Use	<p>OCPR incorporates MI-genotype native seed and/ or plug material into all restoration projects, as well as in landscaping associated with developed park areas, as much as possible. In FY 2022, 11 native planting projects took place and three (3) took place in FY 2023.</p> <p>The Oakland County Parks Native Landscape Design Initiative received a 2023 Planet Michigan Green Community Landscape Beautification Award from the Michigan Nursery and Landscape Association (MNLA). The honor recognizes communities for their excellence in improving the physical and aesthetic environment of their neighborhoods and in raising the awareness of the positive economic growth and environmental impacts that quality landscaping can bring.</p> <p>The Initiative reimagined traditional landscaping at the Parks administrative buildings located at Waterford Oaks County Park. By focusing on native plants and environmental sustainability, Parks reaped the benefits of cultivating native species. It provided habitat for pollinators, improved water quality and reduced emissions, chemicals, watering and maintenance while still creating aesthetically beautiful landscaping. Parks collaborated with PlantWise, a firm dedicated to creating and restoring native ecosystems, to craft the design, which was installed in 2020.</p>
Norton Street Innovation Project in Pontiac (Green Infrastructure Project)	The Norton Street Innovation Project is a green stormwater infrastructure project located in Pontiac (Clinton River Watershed) that is set to break ground in FY 2024. The project is located on the Augusta Drain property owned by the Augusta Drain Drainage District and maintained by the Water Resources Commissioner's Office. Goals for the project includes the installation of bioretention cells to beautify the space and temporarily capture stormwater runoff before it enters the Augusta Drain, plant native trees and wildflowers to absorb and filter stormwater, reduce pollutants from entering the Clinton River, and create a gathering space for the local community to enjoy. An interactive storymap is available to learn more about the project and discover more about the timeline, goals and history of the space: https://storymaps.arcgis.com/stories/829aafa6473f491e9f15ae638794736e . The project is funded with a \$1.3 million grant from EGLE's Clean Water State Revolving Fund program with 100% loan forgiveness.
Oakland County Green Streets	<p>FY 2022 - OCFM mowed Phragmites and had one controlled burn.</p> <p>FY 2023 - OCFM mowed Phragmites and had one controlled burn. Wildflower areas were mowed once in the spring.</p>
Oakland County Street Tree Enhancement Match Grant Program (OAKSTEM)	<p>In FY 2022, work continued in association with the Oakland County Street Tree Enhancement Match Grant Program (OAKSTEM) - a pilot program by Oakland County Planning & Local Business Development to decrease impervious surface area and increase the tree canopy in communities that make up the George W. Kuhn (GWK) Drainage District. Eleven (11) of the (12) communities who submitted applications to the program completed street tree planting projects. In total, 1,260 trees were planted in public right-of-way within the GWK.</p> <p>In FY 2023, work was completed in association with OAKSTEM. In total, 89 trees were planted in public right-of-way within the GWK during FY2023.</p>
Oakland County Campus Sustainability Plan	<p>The County has prepared a Sustainability Plan that addresses five focus areas: Sustainable Governance, Health & Wellness, Facility and Fleet Decarbonization, High-Performance Buildings, and Open Space, Ecosystems and Connectivity. More information about Oakland county's Sustainability Plan and initiatives are available online at: https://www.oakgov.com/community/sustainability. An interactive storymap of the County's sustainability plan is available at: https://storymaps.arcgis.com/stories/b4a34afb87714feda4ce2bafabad2a47/.</p> <p>OCPLBD: In FY 2022, OCPLBD staff participated in stakeholder meetings and reviewed/commented on the draft Sustainability Plan.</p>
Oakland County Earth Day Fair and Climate March	<p>In FY 2022, Oakland County hosted its first ever Earth Day Fair in Royal Oak's downtown on Saturday, April 23, 2022 from 9:00 a.m. to 1:00 p.m. WRC's Dirt Doctors attended and POW sponsored a rain barrel sale in partnership with MIRainBarrel.com.</p> <p>In FY 2023, Oakland County hosted it's 2nd Earth Day Fair in Royal Oak's downtown on Saturday, April 22, 2023. WRC's Dirt Doctors attended and WRC staff also provided a Native Plant Seedback activity for attendees.</p>

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Oakland County Natural Areas	<p>OCPLBD contracted with Michigan Natural Features Inventory to update and enhance our Countywide Natural Area coverage (last updated in 2004). This effort was completed in FY2018 and produced a countywide baseline document that summarizes existing biological survey work and supporting GIS data sets along with recommendations for future surveys and GIS analysis.</p> <p>In FY 2019, Oakland County reached the goal and was recognized as a Certified Wildlife Habitat by the National Wildlife Federation</p> <p>Oakland County Parks published a wonderful blog post about all the natural resource-related work they've been completing over the course of FY 2023: https://oaklandcountyblog.com/2023/09/19/oakland-county-parks-natural-resources-team-hard-at-work/#more-60124.</p>
Preserve MI Waters: Stormwater Manhole Cover Art Contest	<p>In FY 2022, the WRC coordinated a contest to highlight the importance of awareness that stormwater runoff enters our lakes, streams and rivers without treatment. The initiative was meant to highlight the importance of protecting our waterways from pollution from nonpoint sources. The winner was Troy Athens high school student, Mandy Chu. The contest received a total of 74 entries. Mandy received a \$1,000 scholarship in honor of her achievement from Pure Oakland Water. Details on the initiative were shared in an Oakland County Blog post on April 21, 2022 and is available online at: https://oaklandcountyblog.com/2022/04/21/oakland-county-spreads-awareness-around-stormwater/#more-51100.</p> <p>In FY 2023, CDM staff installed 48 storm drains covers featuring Mandy's artwork in walkable locations throughout Oakland County. A full report on the locations of the installed storm drain covers, along with installed images in the field, are available in Appendix 33.</p>
RainSmart Rebates Program	<p>In FY 2023, the WRC began planning for the implementation of a GSI rebate program for property owners in the GWK Drainage District. The program will provide up to a \$2,000 rebate to property owners that install native trees, rain barrels and/or rain gardens on their properties. The project will be rolled out in FY 2024 with the goal of being available county-wide in the future. Details about the program are available at: www.oakgov.com/rainsmart.</p>
RiverSafe LakeSafe	<p>The RiverSafe LakeSafe program is an education campaign that encourages homeowners to incorporate best management practices for watershed health in and around their home and community.</p> <p>In FY 2022 there were a total of 25 new certifications, leading to a total of 141 RiverSafe LakeSafe certifications since the program's inception in 2016 at the end of FY 2022.</p> <p>In FY 2023 there were a total of 5 new RiverSafe LakeSafe certifications, leading to a total of 146 RiverSafe LakeSafe certifications since the program's inception in 2016.</p>
Seeley Creek Habitat Restoration (Rouge River Watershed)	<p>In FY 2023, this project, located on the Seeley Creek (a County Drain) in the City of Farmington Hills, created habitat in the creek and adjacent floodplain by stabilizing the streambed, eroding banks, and adding stream substrate. Invasive species management was also conducted to increase diversity of native plant species. The project will provide habitat for fish and aquatic species as well as improve habitat for birds, amphibian and terrestrial species. Details about the project are available at: https://www.allianceofrougecommunities.com/seeley.html and https://www.allianceofrougecommunities.com/PDFs/general/Seeley%20ck%20public%20ed%20piece.pdf. Key measurables as part of the project include 5 acres of invasive plant species management and wetland restoration, 30+ stream grade control riffles and 4,000 feet of restored/improved stream habitat.</p> <p>The project was funded by the US EPA Great Lakes National Program Office with an approximate GLRI grant of \$815,000. Project partners included the WRC, EPA, GLRI, and the Alliance of Rouge Communities.</p>
Soil Testing Services	<p>In 2021, a total of 405 home lawn/garden soil tests were processed for Oakland County. In 2022, 568 soil tests were processed for Oakland County (487 home lawn/garden and 79 farm/commercial). In 2023, 494 soil tests were processed for Oakland County (405 home lawn/garden and 89 farm/commercial). The home lawn/garden kits include everything needed to return soil samples to the MSU lab for processing. Kits are available for purchase from thh MSU Extension office in Pontiac. In return, the customer receives their fertilizer recommendation generated automatically by the MSU Home Soil Test web site (https://homesoiltest.msu.edu/). Kits were also sold through Shop MSU (http://shop.msu.edu/product_p/bulletin-e3154.htm). At the end of 2022, the MSU Soil Lab closed and processing was continued on at a private lab.</p>
Stream Leaders Student River Monitoring Program (CRWC)	<p>In FY 2022 CRWC engaged 1,342 students, 50 teachers and mentors, and 16 schools through the Stream Leaders program. Students and mentors collected macroinvertebrates, tested the water chemistry, and observed stream morphology at their stream site to determine water quality.</p> <p>In FY 2023, CRWC engaged 1,339 students, 41 teachers and mentors, and 17 schools, homeschool groups and public events through the Stream Leaders student water quality monitoring program.</p>
Stormwater Education: CRWC Community presentations and workshops	<p>In FY 2022, CRWC hosted a total of 28 stormwater education presentations and reached approximately 446 people within the Clinton River Watershed.</p> <p>In FY 2023, CRWC hosted a total of 34 stormwater education presentations and reached approximately 717 people within the Clinton River Watershed.</p>
Stormwater Management Forums	<p>In FY 2022, CRWC hosted 4 Stormwater Management Forums targeted at municipal staff, elected officials, City Council members, engineers, consultants, planners, and EGLE staff. There were a total of 47 attendees and the locations were Macomb Intermediate School District on 6/16/22, Sterling Heights DPW on 11/17/22, and virtual on 9/15/22 and 3/16/23.</p> <p>In FY 2023, CRWC hosted 4 Stormwater Management Forums targeted at municipal staff, elected officials, City Council members, engineers, consultants, planners, and EGLE staff. There were a total of 83 attendees and the meetings were hosted at the Orion Township Municipal Center on 7/20/23, the Clinton Macomb Public Library North branch on 11/30/23, and virtually on 9/21/23 and 1/16/24.</p>

**Oakland CDC MS4
NPDES Permit No. MI0060089
FY 2022 and 2023
Measurables
(October 1, 2021 - September 30, 2023)**

Action/Activity	
Stormwater Utility Legislation	Since 2014, the WRC has continued to lead a workgroup of stakeholders to develop language for a bill that would help clarify how communities can establish dedicated funding sources for managing their stormwater systems. On November 9, 2023, Senator Rosemary Bayer introduced SB-660'23, a bill to enact new law known as the "Stormwater Management Utility Act". Although similar legislation has been introduced in Lansing many times over the past several years, this refined bill is gaining regional and statewide support with enough momentum to be addressed by the full Legislature in calendar year 2024. The WRC continues to monitor court cases that are trending in manner favorable to support the passage of a stormwater management utility bill. Since FY 2021, the WRC hosted a regional community forum to review material revisions to prior draft bills, educate community leaders, and solicit feedback from a cross-section of professionals to ensure all aspects of creating and maintaining a stormwater management utility are considered and incorporated into the new proposed law.
Tree Plantings on County Campus	In FY 2023, Oakland County's landscaping services dept. received a \$15,000 grant from the Michigan Department of Natural Resources for its 2023 tree planting program. The funds will allow FMO to purchase 30 additional 6'- 8' trees for an existing spring planting project on the campus rights-of-way. The grant funding will increase the number of trees for the planting project to around 200. This season's tree planting is part of the County's bigger goal to plant 2,027 trees by 2027. Expanding the tree canopy is a critical strategy to achieve the County's goals of environmental sustainability, livable neighborhoods, and healthy residents through the sequestration of greenhouse gas emissions, reductions in air pollution, reduction of the urban heat island effect, and mitigation of stormwater issues.
"Water by the Quarter" Online Program	"Water by the Quarter" is an online platform whereby Water Resources Commissioner Jim Nash interviews a variety of environmental resource professionals on various topics. The programs are produced by CMNtv. All episodes can be viewed here: https://www.youtube.com/playlist?list=PL9YdrTm187odc5sh8VQ1GCNhtiy22YM0k . A total of five (5) programs took place and a summary of guests, topics and links to playlists for FY 2022 and 2023 are included in Appendix 34 . There were a total of 451 views for the FY 2022 and 2023 programs.
WaterTowns	FY 2022 was the 10th year of the WaterTowns® (WT) initiative with two new communities joining the program, Pontiac, and Oakland County. FY 2023 was the 11th year of the WaterTowns® (WT) initiative with two new communities joining the program; Warren and Oak Park. The WT program now has a total of 32 communities. Keego Harbor, as well as Center Line, have made use of their mini-grants through the WaterTowns program at this time. Additional work was also done in Ferndale to create a parks best management practices manual, a rain garden replanting and student bioswale project were completed in Clarkston, a wet meadow restoration project was completed in Rochester, and assistance was provided to Eastpointe for a GSI retrofit on 9 Mile Rd.
Wildlife Habitats of Oakland (WHO)	Wildlife Habitats of Oakland (WHO) is a collaborative effort among leading conservation groups, county government and nonprofit agencies in Oakland County. WHO is working in conjunction with the National Wildlife Federation to accomplish the following goals: <ul style="list-style-type: none"> • Create a network of wildlife-friendly habitats in residential yards, businesses, parks, trails and other publicly owned lands • Raise awareness about the importance of pollinators and other indicator species • Recognize the significant role that native plants have in fostering a healthy environment • Certify all of Oakland County as a National Wildlife Federation Community Wildlife Habitat <p>An article was published in the Oakland Press on 10/4/2019 highlighting the WHO program, entitled "County recognized by National Wildlife Federation as wildlife-friendly"</p> <p>More information is available on the WHO website: https://detroitzoo.org/who/</p>
WRC Facebook Posts	The WRC engages with the public via Facebook throughout the year on a variety of natural resource-related topics including green infrastructure, pollution prevention, invasive species, and more. A summary of the reach of the WRC's Facebook social media campaign for FY 2023 is provided in Appendix 35 . WRC marketing staff posted a total of 383 posts in FY 2023 and a total of 94,784 page impressions were made.
U.S. Green Building Council 2022 LEED for Cities Local Government Leadership Program	In FY 2022, Oakland County was among 15 cities and counties participating in the U.S. Green Building Council's 2022 LEED for Cities Local Government Leadership Program. Oakland County has a goal of reaching carbon neutrality by 2050. County government is already reducing energy consumption on its campus including a LEED Gold certified building (the Oakland County International Airport Terminal Building)