

Office of the Auditor General
Performance Audit Report

**Clean Michigan Initiative
Environmental Protection Programs**
Department of Environment, Great Lakes, and Energy

October 2022

The auditor general shall conduct post audits of financial transactions and accounts of the state and of all branches, departments, offices, boards, commissions, agencies, authorities and institutions of the state established by this constitution or by law, and performance post audits thereof.

The auditor general may make investigations pertinent to the conduct of audits.

Article IV, Section 53 of the Michigan Constitution



OAG

Office of the Auditor General

Report Summary

Performance Audit

Clean Michigan Initiative (CMI)

Environmental Protection Programs

Department of Environment, Great Lakes, and Energy (EGLE)

Report Number:

761-0217-22

Released:

October 2022

EGLE administers environmental protection programs funded with CMI bond proceeds. These programs include response activities at facilities, the Waterfront Redevelopment Program, the Remediation of Contaminated Lake and River Sediments Program, the Nonpoint Source Pollution Prevention and Control Program, the Clean Water Fund, and the Pollution Prevention Program. This performance audit was required by Section 324.19615 of the *Michigan Compiled Laws*.

Audit Objective			Conclusion
Objective 1: To assess the effectiveness of EGLE's efforts to ensure the use of CMI funds complies with laws, regulations, and contract requirements.			Effective
Findings Related to This Audit Objective	Material Condition	Reportable Condition	Agency Preliminary Response
None reported.	Not applicable.		

Audit Objective			Conclusion
Objective 2: To compile and report data for programs eligible for CMI funding.			Compiled and reported
Findings Related to This Audit Objective	Material Condition	Reportable Condition	Agency Preliminary Response
None reported.	Not applicable.		
Observations Related to This Audit Objective	Material Condition	Reportable Condition	Agency Preliminary Response
Status of CMI programs and funding (<u>Observation 1</u>).	Not applicable for observations.		

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Doug A. Ringler, CPA, CIA
Auditor General

October 20, 2022

Ms. Liesl Eichler Clark, Director
Department of Environment, Great Lakes, and Energy
Constitution Hall
Lansing, Michigan

Dear Ms. Clark:

This is our performance audit report on the Clean Michigan Initiative Environmental Protection Programs, Department of Environment, Great Lakes, and Energy.

We organize our findings and observations by audit objective.

This report is issued pursuant to Section 324.19615 of the *Michigan Compiled Laws*, which states that the Office of the Auditor General shall conduct a performance audit every two years of programs funded with Clean Michigan Initiative bond proceeds. Upon completion of the performance audit, the Office of the Auditor General shall submit a report on the audit to the audited department and the Legislature.

We appreciate the courtesy and cooperation extended to us during this audit.

Sincerely,

Doug Ringler
Auditor General

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AUDIT OBJECTIVES, CONCLUSIONS, FINDINGS, AND OBSERVATIONS

COMPLIANCE WITH LAWS, REGULATIONS, AND CONTRACT REQUIREMENTS

BACKGROUND

In November 1998, Michigan voters approved \$675 million of Clean Michigan Initiative (CMI) bonds for environmental, natural resources, and health protection programs to clean up and redevelop contaminated sites; protect and improve water quality; prevent pollution; abate lead contamination; reclaim and revitalize community waterfronts; enhance recreational opportunities; and clean up contaminated sediments in lakes, rivers, and streams. The six environmental protection programs administered by the Department of Environment, Great Lakes, and Energy (EGLE) are response activities* at facilities*, the Waterfront Redevelopment Program, the Remediation of Contaminated Lake and River Sediments Program, the Nonpoint Source Pollution Prevention and Control Program, the Clean Water Fund, and the Pollution Prevention Program.

EGLE's environmental protection programs were authorized to use \$570 million (84%) in bonds, and as of September 30, 2020, the State of Michigan had issued all of the bonds. EGLE has expended \$548.8 million in CMI funds since fiscal year 1999. EGLE works closely with the Department of Treasury to review projected CMI expenditures and cash flow.

EGLE prepared the annual State Environmental Cleanup Programs Report (annual report) to provide information to the Legislature regarding State-funded environmental programs through fiscal year 2020. In accordance with Article 4, Part 2, Section 235, Public Act 87 of 2021, EGLE prepares the Active Cleanup Projects Funding Report quarterly. It contains a summary of remediation and redevelopment efforts for sites approved for and using State funds, including but not limited to CMI funds.

AUDIT OBJECTIVE

To assess the effectiveness* of EGLE's efforts to ensure the use of CMI funds complies with laws, regulations, and contract requirements.

CONCLUSION

Effective.

FACTORS IMPACTING CONCLUSION

- EGLE awarded CMI funds in accordance with laws, regulations, and contract requirements for all 24 projects reviewed. Specifically:
 - EGLE reviewed project applications to ensure the entities were eligible to receive CMI funds.

* See glossary at end of report for definition.

- Contractual agreements between EGLE and project applicants met CMI funding requirements.
 - EGLE appropriately monitored active projects to ensure the projects met contractual obligations and expended funds in accordance with CMI standards.
- EGLE fairly presented the detailed expenditures of each CMI-funded project during the audit period in the fiscal year 2020 annual report and the fiscal year 2022 first quarter Active Cleanup Projects Funding Report.
- EGLE accurately reported Brownfield Redevelopment Loan repayments in the fiscal year 2020 annual report.

COMPILE AND REPORT DATA FOR CMI-FUNDED PROGRAMS

AUDIT OBJECTIVE	To compile and report data for programs eligible for CMI funding.
CONCLUSION	Compiled and reported.
FACTORS IMPACTING CONCLUSION	<ul style="list-style-type: none">• Observation* regarding the status of CMI programs and funding (Observation 1).• Exhibit 1 presents a summary of CMI authorizations and expenditures by program.• Exhibit 2 presents the number of completed CMI-funded projects by program.• Exhibit 3 presents examples of sites funded by CMI.• Exhibit 4 presents examples of sites funded by the Renew Michigan Fund (RMF).• Exhibit 5 presents examples of sites funded by CMI and RMF.• Exhibit 6 presents the number of identified underfunded CMI-eligible project sites.• Exhibit 7 presents the number of sites with priority Environmental Cleanup and Redevelopment Program (ECRP) projects by county.

* See glossary at end of report for definition.

OBSERVATION 1

Status of CMI programs and funding.

Although EGLE completed cleanup efforts on many projects, numerous underfunded projects remain, indicating the demand for funding exceeds the amount of CMI resources available.

Since fiscal year 1999, EGLE has used CMI bond proceeds to fund cleanup and monitoring projects for over 20 environmental protection programs. As of September 30, 2021, only 5 of these programs had CMI funding still available. Sections 324.19601 - 324.19616 of the *Michigan Compiled Laws* authorized \$570 million to be spent by EGLE on environmental protection programs. As of September 30, 2021, EGLE was appropriated \$565.4 of the \$570 million of CMI funds and expended \$548.8 million, leaving an unexpended balance of \$21.2 million. Exhibit 1 presents a list of active and inactive CMI-funded programs and cumulative appropriations and expenditures by program. The remaining \$21.2 million of CMI funds are restricted by legislation for the following activities:

	Remaining CMI Funds** (in millions)
Response activities at facilities and leaking underground storage tank corrective action	\$ 7.6
Nonpoint source pollution prevention and control projects	8.1
Remediation of contaminated lake and river sediments	3.5
Clean water fund and water quality monitoring	1.3
Pollution prevention programs	0.7
Total (as of September 30, 2021)	\$21.2

**Includes funds obligated for ongoing projects and activities.

Since fiscal year 1999, EGLE has funded more than 1,731 projects using CMI bond proceeds. Exhibit 2 presents the number of completed CMI-funded projects and the amount expended by program.

EGLE identified 17,239 underfunded project sites within the following programs: Environmental Cleanup and Redevelopment Program; Nonpoint Source Pollution Prevention and Control Program; Superfund Program; Brownfield Redevelopment Grant and Loan Programs; and Remediation of Contaminated Lake and River Sediments Program (see Exhibit 6). According to EGLE, this number is not all-inclusive as not all sites that require cleanup are known at this time. This number includes projects where cleanup has begun but lacks sufficient funding to complete.

Examples of underfunded projects and the status of EGLE programs include:

a. Environmental Cleanup and Redevelopment Program (ECRP)

ECRP is the most significant of EGLE's environmental cleanup programs, accounting for 43% of all CMI expenditures. As of September 30, 2021, EGLE expended or designated all \$241 million in CMI funds authorized for ECRP.

However, EGLE identified 16,276 sites that are unfunded or insufficiently funded. Exhibit 6 presents the number of identified underfunded CMI-eligible project sites. Of these identified sites, 11,127 were pending a risk assessment as of August 2022. Exhibit 7 presents the location, by county, of 384 sites with assessed risk of "present and immediate." EGLE indicated that these sites are its priority for future remediation efforts.

b. Brownfield Redevelopment Grant and Loan Programs

EGLE offers grants and loans for the evaluation, cleanup, removal, or containment of hazardous substances at eligible Brownfield properties. The goals of the programs are to ensure the safe reuse of abandoned, vacant, or underutilized properties with known contamination and to promote redevelopment of Brownfield sites. EGLE issued \$72.8 million in grants and loans to clean up 147 project sites. As of August 2022, 48 eligible sites remained underfunded (see Exhibit 6).

c. Nonpoint Source Pollution Prevention and Control Program

Eliminating nonpoint source pollution is a critical task of EGLE given that additional water quality issues in Michigan are caused by rain, snowmelt, or wind bringing pollutants into water sources. From 1999 through September 30, 2021, EGLE awarded 113 nonpoint source grants totaling \$40.3 million. EGLE informed us these CMI funds were leveraged to secure an additional \$34.9 million in local matching funds which were used to promote practices resulting in 120,375 tons of sediment load reductions, 131,875 pounds of phosphorus load reductions, and 284,700 pounds of nitrogen load reductions to Michigan lakes and rivers.

EGLE informed us that, from 1999 through September 30, 2021, stakeholders submitted applications for 1,276 projects totaling \$342 million. EGLE awarded \$124 million in nonpoint source grants for 452 of those projects. As a result, at least \$218 million in unmet funding needs remained for 824 projects (see Exhibit 6).

d. Remediation of Contaminated Lake and River Sediments Program

EGLE partners with the U.S. Environmental Protection Agency (EPA) by providing a 35% match to clean up contaminated lake and river sediments that qualify for federal funding under the Great Lakes Legacy Act. EGLE appropriated \$25.1 million in CMI funds and informed us industrial partners* pledged \$5.6 million to secure an additional \$56 million of federal funding for the cleanup of lake and river sediment contamination in Michigan.

EGLE reports 10 projects have been completed for this program, allowing for the removal of 599,000 cubic yards of contaminated sediment in four Great Lakes areas of concern* since 1999.

CMI funding has been a critical tool for the State of Michigan to address contaminated properties throughout the State. Environmental cleanup and redevelopment projects have been the main benefactors of this voter-approved funding. Exhibit 3 provides examples of contaminated properties whose redevelopment was facilitated by CMI funding.

After 24 years, CMI bond funds are nearly exhausted. In 2019, a new funding source, the Renew Michigan Fund, was approved by the Legislature to help continue the critical work of environmental cleanup and redevelopment. Net appropriations for Renew Michigan Fund through fiscal year 2022 are \$283.4 million. Continued funding is needed to facilitate remediation of contaminated soil and water sites, both known and unknown to EGLE. Examples of sites funded from the Renew Michigan Fund are presented in Exhibit 4. Exhibit 5 provides examples of contaminated property redevelopment funded by both CMI and RMF.

* See glossary at end of report for definition.

SUPPLEMENTAL INFORMATION

UNAUDITED
Exhibit 1

CLEAN MICHIGAN INITIATIVE ENVIRONMENTAL PROTECTION PROGRAMS
Department of Environment, Great Lakes, and Energy (EGLE)

Summary of CMI Authorizations and Expenditures by Program
As of September 30, 2021

	EGLE Spending Plan (Note 1)	Cumulative Appropriations	Cumulative Program Expenditures	CMI Funds Remaining
Active Programs:				
Environmental Cleanup and Redevelopment Program	\$ 241,025,634	\$ 241,038,090	\$ 235,626,855	\$ 5,398,779
Brownfield Redevelopment Grant Program	50,000,000	49,856,040	47,840,402	2,159,598
Brownfield Redevelopment Loan Program (Note 2)	25,000,000	25,000,000	25,000,000	
Remediation of Contaminated Lake and River Sediments Program	25,000,000	25,135,207	21,495,105	3,504,895
Nonpoint Source Pollution Prevention and Control Program	48,443,334	45,554,061	40,340,992	8,102,342
Water Quality Monitoring Program	44,165,181	44,415,194	44,070,685	94,496
Clean Water Initiative (Note 3)	1,159,282			1,159,282
Total Active Programs	<u>\$ 434,793,431</u>	<u>\$ 430,998,592</u>	<u>\$ 414,374,039</u>	<u>\$ 20,419,392</u>
Inactive Programs:				
NPL - Municipal Landfill Cost-Share Grant Program (Note 4)	\$ 8,000,000	\$ 8,000,000	\$ 8,000,000	\$
Pollution Prevention Activities and Initiatives	4,290,214	3,558,431	3,558,431	731,783
Waterfront Redevelopment Program	50,000,000	49,999,668	49,999,668	332
Retired Engineers Technical Assistance Program (Note 5)	10,000,000	10,000,000	10,000,000	
Small Business Pollution Prevention Loan Program	5,000,000	5,000,000	5,000,000	
Illicit Storm Water Connection Grants Program (Note 5)	7,638,931	7,611,158	7,611,158	27,773
Remedial Action Plan and Lakewide Management Plan (Note 4)	7,692,968	7,692,968	7,692,968	
Conservation Reserve Enhancement Program (Note 4)	5,000,000	5,000,000	5,000,000	
Abandoned Well Management Grants (Note 4)	2,277,286	2,277,286	2,277,286	
Voluntary Storm Water Permits	3,395,246	3,395,246	3,395,246	
Failing On-Site Septic Systems (Note 4)	6,771,056	6,771,056	6,771,056	
Protecting High Quality Waters (Note 6)	5,681,111	5,681,111	5,681,111	
Statewide Groundwater Inventory and Mapping	973,000	973,000	973,000	
Village of Chesaning - Water Pollution Control Grant (Notes 6 and 7)	899,957	899,957	899,957	
Water Withdrawal Assessment Tool (Note 8)	498,800	497,280	498,800	
Administrative Support (Note 9)	17,088,000	17,087,999	17,087,999	1
Total Inactive Programs	<u>\$ 135,206,569</u>	<u>\$ 134,445,160</u>	<u>\$ 134,446,680</u>	<u>\$ 759,889</u>
Total Active and Inactive Programs (Note 10)	<u>\$ 570,000,000</u>	<u>\$ 565,443,752</u>	<u>\$ 548,820,719</u>	<u>\$ 21,179,281</u>

This exhibit continued on next page.

Notes:

- (1) EGLE established subcategories within the CMI allocations set in law that further refine the respective allocations. Within each allocation made in Section 324.19607 of the *Michigan Compiled Laws*, EGLE, through the Department of Treasury, established separate funds for tracking purposes. Under each fund, EGLE requests appropriations from the State Budget Office and the Legislature to spend resources related to the respective allocations.
- (2) The Brownfield Redevelopment Loan Program provides an ongoing source of CMI funds to re-loan to borrowers.
- (3) The funds remaining from the Clean Water Initiative have been appropriated to the Water Quality Monitoring Program.
- (4) Completed in fiscal year 2010.
- (5) Completed in fiscal year 2009.
- (6) Completed in fiscal year 2011.
- (7) The Village of Chesaning grant was a one-time appropriation in the boilerplate and was not part of a program appropriation.
- (8) The Water Withdrawal Assessment Tool was appropriated to the Department of Natural Resources (DNR); however, EGLE fulfilled the required reporting of CMI funds for this Program.
- (9) Section 324.19608(4) of the *Michigan Compiled Laws* restricts administrative costs to 3%; EGLE tracked this cost through a separate appropriation.
- (10) EGLE's environmental protection programs account for \$570 million (84%) of the total \$675 million of CMI bonds.

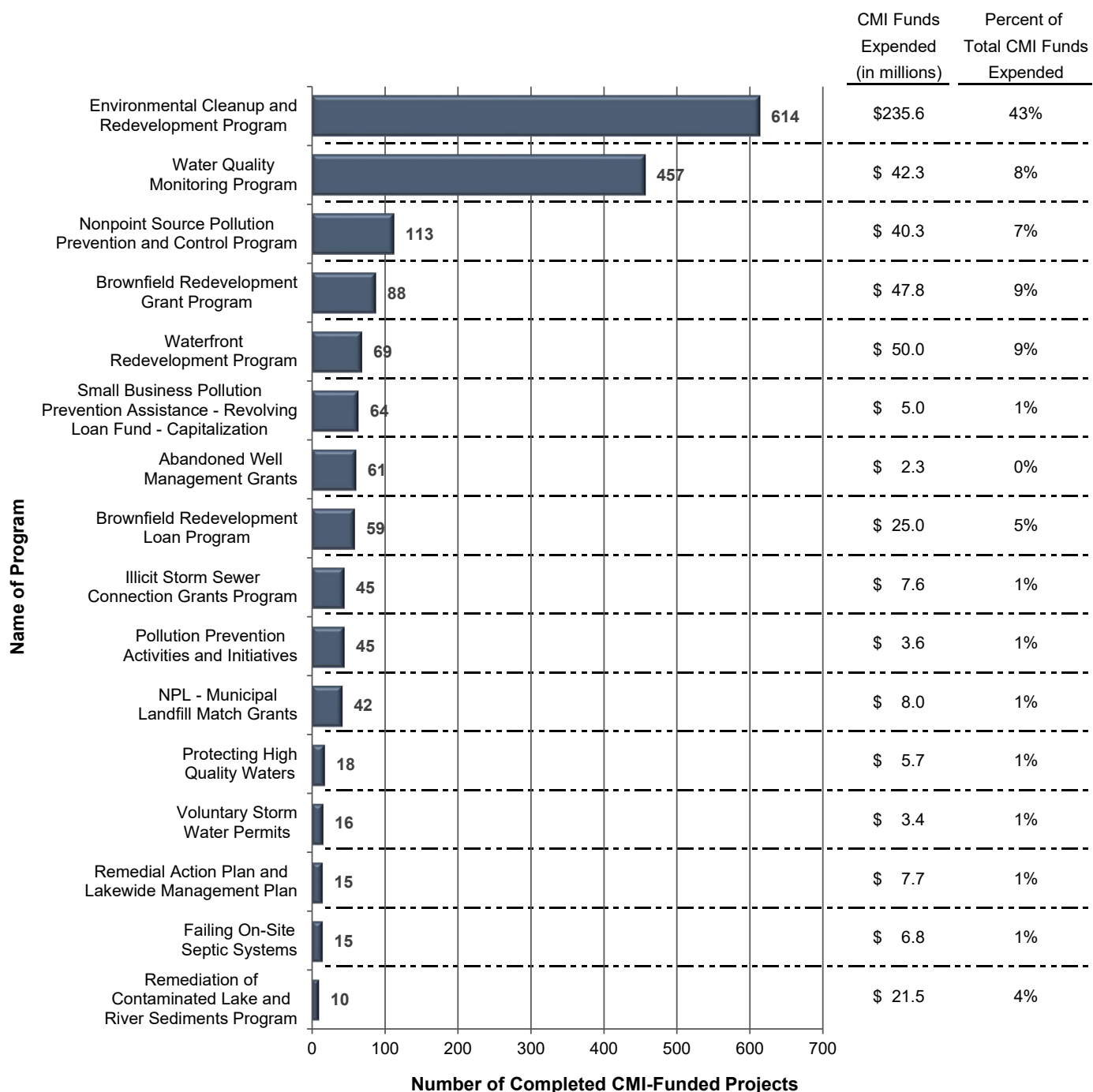
Source: The OAG prepared this exhibit based on EGLE's expenditure reporting in the fiscal year 2020 State Environmental Cleanup Programs Report, the fiscal year 2022 first quarter Active Cleanup Projects Funding Report, and Statewide Integrated Governmental Management Applications* (SIGMA) data.

* See glossary at end of report for definition.

CLEAN MICHIGAN INITIATIVE ENVIRONMENTAL PROTECTION PROGRAMS

Department of Environment, Great Lakes, and Energy (EGLE)

Number of Completed CMI-Funded Projects by Program

Fiscal Years 1999 Through 2021

The accompanying notes facilitate the understanding of this exhibit.

This exhibit continued on the next page.

Notes:

(1) CMI programs not included in Exhibit 2 account for approximately \$19.2 million (4%) of total CMI expenditures.

These programs are:

- (a) Water Use and Withdrawal Program, which was a Statewide project.
- (b) Retired Engineers Technical Assistance Program Fund (completed), which provided individual test results for private businesses and local municipalities.
- (c) Conservation Reserve Enhancement Program (completed), which provided State matching funds for a federal program that was managed by the Michigan Department of Agriculture and Rural Development.
- (d) Statewide Groundwater Inventory and Mapping, which was a Statewide project.
- (e) Village of Chesaning - Water Pollution Control Grant (completed in fiscal year 2011).
- (f) Water Use and Withdrawal Program (DNR).

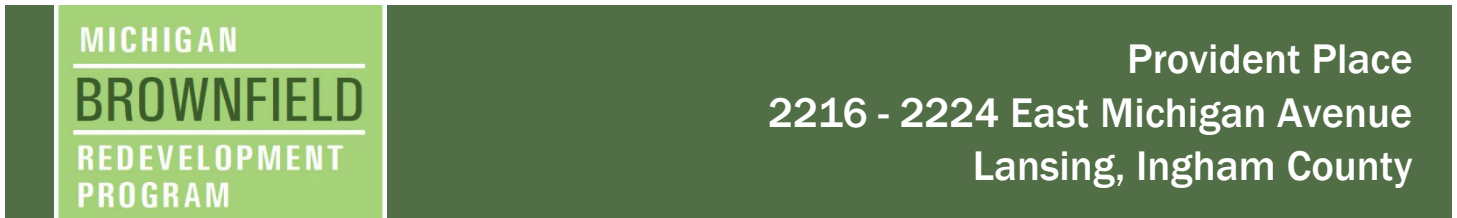
(2) CMI administrative support costs not included in Exhibit 2 account for \$17.1 million (3%) of total CMI expenditures.

(3) Exhibit 2 includes projects that have a status of monitoring, operations and maintenance, closed monitoring, completed, undergoing closeout, or closed. The number of projects reported for each program may not be all-inclusive because the exhibit does not include projects such as those still in progress or on funding hold.

Source: The OAG prepared this exhibit based on data obtained from EGLE.

CLEAN MICHIGAN INITIATIVE ENVIRONMENTAL PROTECTION PROGRAMS
Department of Environment, Great Lakes, and Energy (EGLE)

Examples of Sites Funded by CMI



A Brownfield Redevelopment grant and loan from EGLE helped the Lansing Brownfield Redevelopment Authority and a local developer, the Gillespie Company, to redevelop this former gasoline filling station and automotive sales and service business. The 0.46-acre site was contaminated with metals and petroleum products. The Brownfield grant and loan addressed environmental contamination, and the property was redeveloped into a mixed-use commercial retail and residential development.

The site was originally developed with residential dwellings in the early 1910s. In the 1920s, it was later developed with a gasoline filling station and automotive repair business. Ultimately, these operations stopped in the 1950s and the site was utilized for commercial office and retail space through much of the 1980s, 1990s, and early 2000s until it was left vacant in mid to late 2010s.

The Brownfield Redevelopment grant and loan were utilized for asbestos abatement and demolition of three dilapidated buildings, removal of two 1,000-gallon regulated underground storage tanks (USTs) and one 550-gallon heating oil UST, and removal of 5,933 cubic yards of contaminated soil.

Based on a series of community workshops and neighborhood meetings held by the developer, the property was identified as an area of proposed transformation. The project resulted in a new 4-story, mixed use building featuring 33 apartments and 9,500 square feet of first floor commercial/retail space. The developer incorporated the community and neighborhood feedback into the design and facade elements including the appearance of multiple variegated buildings emulating the appearance of a city block in New York or Chicago and "aging in place" design elements. Occupancy was granted in March of 2020. Flex City Fitness occupies a portion of the first floor commercial space. The remaining commercial space is anticipated to be filled soon. The mixed use development is a welcomed addition to this main commercial corridor connecting Michigan State University to the State Capitol.

A \$500,000 Brownfield Redevelopment grant and \$500,000 revitalization revolving loan were awarded to the project. Other State funding totaling over \$1 million paid for site preparation and infrastructure improvements. The City of Lansing used a federal grant for costs of the initial due diligence investigation. Private investment into the building construction totaled \$7 million.



OUTCOMES

- Increase in State equalized value of approximately \$100,000
- \$7 million in private investment
- 15 new jobs
- Increased density and reactivation of the Michigan Avenue corridor
- Incorporation of "aging in place" design elements
- Significant improvement in stormwater management
- 5,933 cubic yards of soil with metals and petroleum contaminants removed and properly disposed of in a landfill
- Two 1,000-gallon regulated USTs and one 550-gallon heating oil UST removed from the property

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**MICHIGAN
ENVIRONMENTAL
REMEDiation
PROGRAM**

**1849 Ruddiman Drive
North Muskegon, Muskegon County**

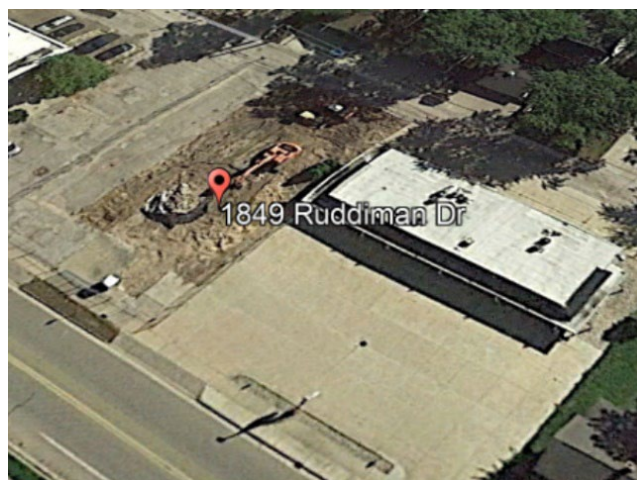
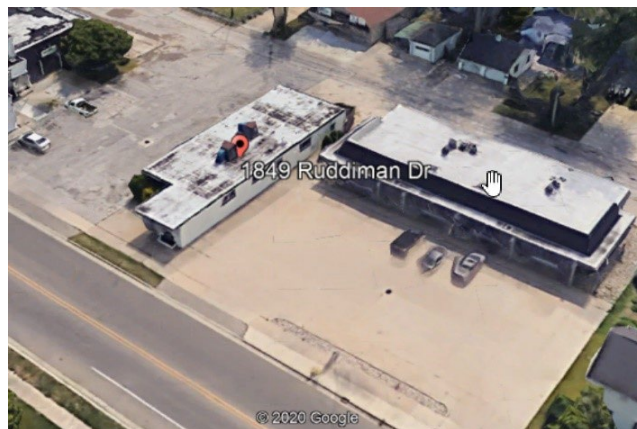
Funding from EGLE helped address contamination associated with a former dry-cleaning operation. Vapor inhalation risks at neighboring properties were mitigated and contaminated soils were removed from the site and disposed of at a hazardous disposal facility.

A dry-cleaning business operated on this property from 1956 until 2005, when the owner passed away. When the property was transferred in 2005, an environmental assessment identified that the soil and groundwater were contaminated with chlorinated solvents associated with the former dry-cleaning operation.

The property functioned as a drop-off/pick-up laundry facility from 2005 through 2014 when the property went into foreclosure. No dry-cleaning operations took place during this time. The property was purchased out of foreclosure in 2016, the building was demolished in 2018, and the site is now being used as parking for an adjacent business. Following demolition in 2018, EGLE utilized \$325,000 of State funding to remove hazardous concrete and grossly contaminated soils from the site.

As part of an environmental assessment in 2014, sub-slab soil gas samples collected from beneath the structure found high levels of chlorinated solvents, posing a risk to indoor air. Neighboring properties were evaluated by EGLE to determine the extent of soil gas contamination. The evaluation was conducted inside 5 residential homes, an office/garage, and a restaurant and outside 9 residential and 1 commercial unit. Results showed the need for installation of vapor mitigation systems in 2 units of a 4-unit strip mall located approximately 8 feet to the west of the former dry cleaner. EGLE continues to monitor the locations subject to its investigation to ensure contaminants remain below acceptable levels.

To date, EGLE has spent over \$435,000 investigating the site, installing vapor mitigation systems, removing contaminated soils, and restoring the site. An estimated \$5,000 in additional funding annually is needed for this site to continue the operation and maintenance of the vapor mitigation systems and for continued sampling to ensure volatilizations of contaminants to the indoor air are not taking place.



OUTCOMES

- Approximately 81 tons of hazardous concrete material removed and disposed of
- Approximately 1,100 tons of hazardous soil removed and disposed of
- Two vapor mitigation systems installed on neighboring properties

Source: EGLE prepared this exhibit.

CLEAN MICHIGAN INITIATIVE ENVIRONMENTAL PROTECTION PROGRAMS
Department of Environment, Great Lakes, and Energy (EGLE)

Examples of Sites Funded by the Renew Michigan Fund

MICHIGAN BROWNFIELD REDEVELOPMENT PROGRAM	Midwest V, LLC Redevelopment Former Paw Paw Laundry 711 East Michigan Avenue Paw Paw, Van Buren County, Michigan
--------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------

A Brownfield Redevelopment loan from EGLE helped Van Buren County redevelop this former dry-cleaning business. This 1.2-acre site was heavily contaminated with dry cleaning solvents and petroleum products. The Brownfield loan and other EGLE funding addressed environmental contamination, and the building was redeveloped into a Dollar General retail store.

The site was developed in 1952 as a dry cleaner, including a gasoline underground storage tank present at the site for use by company delivery trucks. The site is in a residential neighborhood with an apartment complex nearby. A release of fuel and dry-cleaning chemicals was found on the site. The underground storage tank was removed in 1991.

Tetrachloroethene and trichloroethylene (TCE) in the soil and groundwater exceeded State cleanup criteria. Highly impacted soils beneath the building were excavated, transported, and disposed of using the EGLE loan and Strategic Water Quality Initiatives funds. To address remaining vapor issues, a soil vapor ventilation system was installed beneath the building to prevent vapors from entering the new development.

The new owner constructed a standalone retail store to better serve the local community. The development created 7.5 full-time equivalent jobs and removed a blighted eyesore on the way in and out of town.

A \$179,425 Brownfield Redevelopment loan was awarded. Other State funding totaling over \$1 million paid for investigation, interim response, and corrective actions to address contamination. Private investment into building construction exceeded \$1 million.



OUTCOMES

- Increase in State equalized value of \$311,788
- \$1 million in private investment
- 3 new full-time jobs, 9 new part-time jobs
- Soils with significant contaminant concentrations removed and properly disposed of in a landfill
- A vapor barrier beneath the building eliminates unacceptable exposure to hazardous vapors

This exhibit continued on next page.

**MICHIGAN
ENVIRONMENTAL
REMEDiation
PROGRAM**

**Hoskins Manufacturing
830 East Kittle Road
Mio, Oscoda County**

Funding from EGLE helped address contamination associated with a former manufacturing facility. Contaminated soils and abandoned waste materials were removed from the site. An investigation showed significant groundwater contamination that ultimately discharges to a nearby creek. A soil and groundwater remediation system is being installed at the site.

The Hoskins Manufacturing Mio plant operated from the late 1960s until 2001, manufacturing thermoelectric nickel and chromium alloys in the form of wire, strip, and ribbon. Poor waste handling and chemical storage practices at the site resulted in the soil and groundwater becoming contaminated with chlorinated solvents, chlorides, and metals.

The Environmental Protection Agency (EPA) performed an emergency action in 2002 to remove 700,000 gallons of chemicals and waste left behind when Hoskins abandoned the plant, and the EPA returned in 2006 to remove an additional 9,500 tons of contaminated materials.

Between 2003 and 2011, EGLE utilized approximately \$4.5 million of various State funding sources, including CMI funds, to investigate the environmental condition of the site, demolish the building, remove additional contaminated soil/sludge, and perform a pilot study to determine the effectiveness of a proposed groundwater remediation system. From 2012 through 2018, EGLE monitored the groundwater plume and evaluated the effectiveness of the proposed remediation strategy.

Chlorinated solvent and metal contaminated soil remain near the former manufacturing building, and contaminated groundwater is migrating in a plume approximately ½-mile long and discharging into Perry Creek. Contaminants have been detected in surface water samples in Perry Creek as far as ½-mile south of where the groundwater contamination enters the creek. The health department continues to monitor residential wells in the vicinity of the groundwater contamination plume. No contamination has been found in these wells to date; however, the groundwater contamination plume appears to be shifting toward the residential neighborhood to the south of the site.

Using \$3 million in additional funding, EGLE installed a soil flushing system to address soil contamination and conducted injections to remediate the groundwater in 2020. The groundwater contamination concentrations have significantly decreased, indicating the effectiveness of the treatment. A pilot study to extract remaining contaminated vapors from the source soil area is being conducted in 2021 through 2022.



OUTCOMES

- Groundwater contaminant concentrations decreased
- Pilot study to remediate soils being conducted

This exhibit continued on next page.

**MICHIGAN
ENVIRONMENTAL
REMEDiation
PROGRAM**

**Schrader and Sons
4091 Bonisteel Road
Fort Gratiot, Saint Clair County**

Funding from EGLE helped identify contamination at a former junk yard and scrap metal recycling facility. Soils over the entire nearly 2-acre property were heavily contaminated with lead.

The residential property operated as a salvage yard and scrap metal recycling facility for over 50 years. While investigating a complaint, EGLE staff observed releases of petroleum throughout the scrap yard. In 2011, law enforcement officials notified EGLE of an investigation at the property into the acceptance of copper wire/cable stolen from the local utility company. The law officers reported concern about potential environmental issues. EGLE was invited to investigate and sample under the authority of their warrant. Various petroleum compounds and heavy metals were detected in soil samples.

In 2016, EGLE conducted more detailed sampling. The bulk scrap metal was removed, allowing for greater access for sampling. Petroleum and heavy metals were again detected in the soil, not only on this property but also on an adjacent property (4103 Bonisteel Road) where scrap yard operations were also conducted.



Further investigation by EGLE detected lead in soil approximately 0 to 12 inches across most of 4091 and a small portion of 4103 Bonisteel Road. The proposed best cleanup option and greatest risk reduction was excavating approximately one foot of soil and back filling with clean soil. Over \$162,000 of State funding was utilized to date to investigate and characterize the environmental condition of the property.

In April 2021, over 5,000 tons of contaminated soil was excavated and properly disposed of at the local landfill. The properties were restored with clean soil and planted with grass seed.

Monitoring of the groundwater is ongoing, and to date, lead has not been detected. One additional round of groundwater sampling is planned. If the results continue to be non-detect, monitoring will be terminated and the wells removed. There are no residents with drinking water wells in the immediate area. The property owners will be requested to file a deed restriction to prohibit the use of groundwater on the affected properties.

OUTCOMES

- Estimated 5,500 yards of contaminated soils removed
- Deed restriction to limit groundwater use to be placed

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Funding from EGLE helped support the Mancelona Water and Sewer Authority and WATARS Association to extend their municipal water system to residences affected by groundwater contamination. Funding also paid for groundwater and surface water investigations and evaluations, vapor intrusion monitoring, community outreach, and response actions. EGLE is continuing to fund investigations, monitoring, community outreach, and extension of the municipal water system.

The site operated as an automotive parts manufacturer that included plating operations from 1948 until the mid-1960s. During operations at the facility, scrap steel saturated with chlorinated paraffin was stockpiled outside of the plant building, and untreated wastewater from the manufacturing processes was discharged to three earthen seepage pits, which leached TCE to groundwater.

EGLE investigated and determined the TCE contaminated groundwater extended over six miles beyond the plant site to the Schuss Mountain/Shanty Creek Resort and the Cedar River with a plume depth of greater than 450 feet below ground surface and a width exceeding 1.25 miles at the leading edge of the plume. Concentrations of TCE in the groundwater are 200 times the generic drinking water criteria.

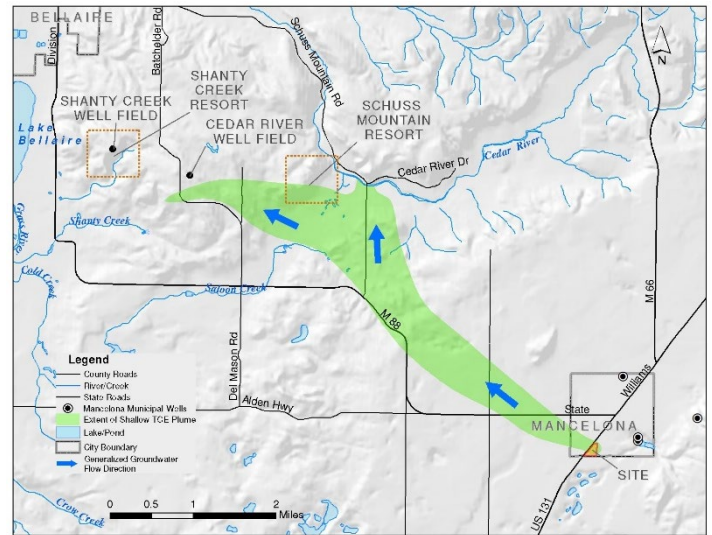
State alternate water funds were used to fund a drinking water supply system to provide safe drinking water to all properties within the known area of the TCE groundwater plume. The drinking water supply system is continually being extended as the TCE plume migrates and contaminates private drinking water wells. The Health Department of Northwest Michigan samples the private drinking water wells located outside the drinking water supply system quarterly to annually. In 2016, EGLE provided funding to the Mancelona Area Water and Sewer Authority to complete a high-pressure main extension from the Mancelona well field to the Cedar River well field and a storage tank. In addition, EGLE provided \$1 million to the Mancelona Area Water and Sewer Authority to construct a water tank/booster station for additional storage. The design and construction of the water tank/booster station were completed in July 2019.

OUTCOMES

- A conceptual site model depicting the nature and extent of the groundwater contamination developed
- Municipal water supplies extended to supply clean drinking water to affected residents

In December 2018, TCE was detected in a private drinking water well on Windy Hill Drive where municipal water is not available. The extension of municipal water supply to this area was completed in December of 2019. In early 2019, the extension of municipal water to the Pinebrook Condos was also completed.

Groundwater investigations and monitoring continue to occur, and the groundwater model is continuously being updated with new data.



- A conceptual site model depicting the nature and extent of the groundwater contamination developed
- Municipal water supplies extended to supply clean drinking water to affected residences

Michigan Office of the Auditor General
761-0217-22

CLEAN MICHIGAN INITIATIVE ENVIRONMENTAL PROTECTION PROGRAMS
Department of Environment, Great Lakes, and Energy (EGLE)

Examples of Sites Funded by CMI and the Renew Michigan Fund



A Brownfield Redevelopment grant and loan from EGLE was awarded to the Lansing Brownfield Redevelopment Authority to help a local developer, the Gillespie Group, redevelop a prominent corner in downtown Lansing. The approximately 4-acre site was contaminated with volatiles, semi-volatiles, and metals from historical uses including a lumber yard, bulk petroleum and coal distribution, several gasoline stations, and automotive repair operations. Other historical uses included office, commercial retail, and residential.

This redevelopment continued the momentum in the stadium district that began in the mid-1990s by bringing fresh food, new lodging, and more residential space to downtown Lansing. The project consisted of demolition of the existing structures and construction of a new four-story commercial and apartment building including a nationally ranked hotel (Courtyard Marriott) with meeting spaces, a lounge, a restaurant, and a first-floor urban market operated by Meijer. Although \$2 million of funding was awarded (\$1,250,000 grant and \$750,000 loan), only the grant was utilized. The grant funding along with tax increment financing was utilized to help address many of the Brownfield conditions on the property, including contaminated urban fill and groundwater, presence of USTs, and underground hydraulic hoists. The grant was utilized for removal of contaminated soil, removal of many of the USTs, and installation of a protective barrier and venting system to mitigate the potential for harmful vapors in the building from contamination that was left

behind. Other State funding was also utilized for site preparation and infrastructure improvements. The determined collaboration among many partners, including the Gillespie Group, City of Lansing, Michigan Economic Development Corporation, EGLE, and others has made this project possible.



Photo Credit: MEDC

OUTCOMES

- Increase in State equalized value of \$9.9 million
- \$41.5 million in private investment
- 25 new jobs
- Increased density and reactivation of the Michigan Avenue corridor and downtown/stadium district
- New grocery store in a former food desert
- First new hotel in downtown Lansing in 30 years
- Significant improvement in stormwater management, including low impact design
- Demolition of six residences, one garage, and five commercial buildings
- 17,320 cubic yards of soil with volatiles, semi-volatiles, and metals removed and properly disposed of in a landfill (not all soil removal funded with grant)
- Five 10,000-gallon gasoline USTs, one 10,000-gallon used oil UST, and two 2,000-gallon gasoline USTs removed from the property
- Installation of a protective barrier and venting system to mitigate the potential for harmful vapors

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MICHIGAN
BROWNFIELD
REDEVELOPMENT
PROGRAM

Eastside Industrial
Multiple Parcels (380 acres)
Detroit, Wayne County

A Renew Michigan Brownfield Redevelopment grant from EGLE assisted the Detroit Brownfield Redevelopment Authority with the redevelopment of 380 acres of vacant and underutilized properties.

Prior uses of the 35 separate parcels included machine shops, auto repair, dry cleaners, auto manufacturing, coal yards, rail yards, scrap yards, oil and hazardous materials storage, a lumber yard, an incinerator, municipal storage, and foundries.

The soils contained various contaminants that exceeded State Cleanup Criteria, including volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), and metals.

Approximately \$800,000 in Renew Michigan Grant funding was utilized to remove contaminated soils, conduct demolition, remove underground storage tanks, remediate PCBs, install direct contact barriers, and install liners to prevent exacerbation of contamination in the area of the detention basin and bioswales. The City of Detroit and the Michigan Strategic Fund contributed over \$68 million in land and site development costs.

The developer, Fiat Chrysler Automotive, will use the former industrial facility for its new manufacturing operations. The production facility building is over 2 million square feet.



Aerial view courtesy of Crain's Detroit Business



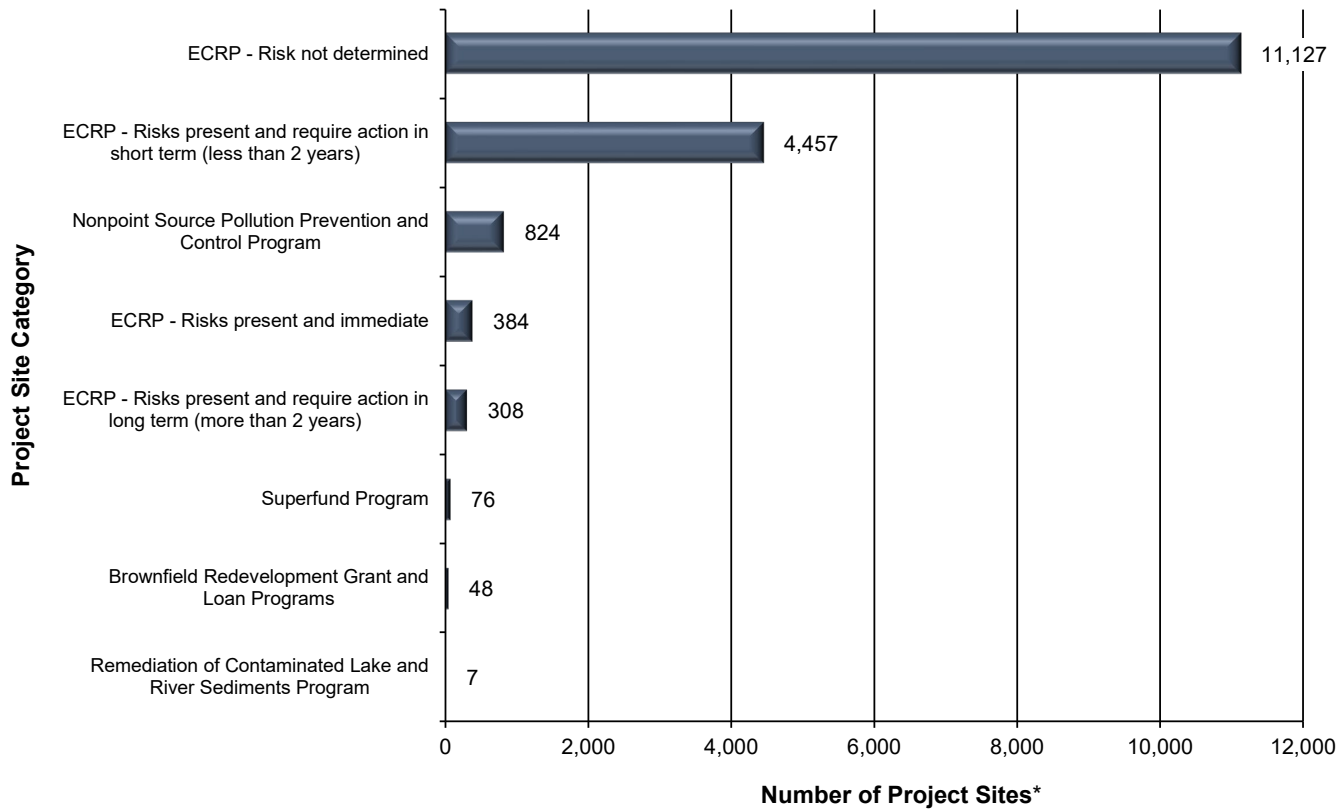
OUTCOMES

- Increase in State equalized value of more than \$16 million
- \$1,257,500,000 in private investment
- 3,800 new jobs
- Removal of contaminated soils and underground storage tanks
- Installation of direct contact barriers

Source: EGLE prepared this exhibit.

CLEAN MICHIGAN INITIATIVE ENVIRONMENTAL PROTECTION PROGRAMS
Department of Environment, Great Lakes, and Energy (EGLE)

Number of Identified Underfunded CMI-Eligible Project Sites
As of August 18, 2022

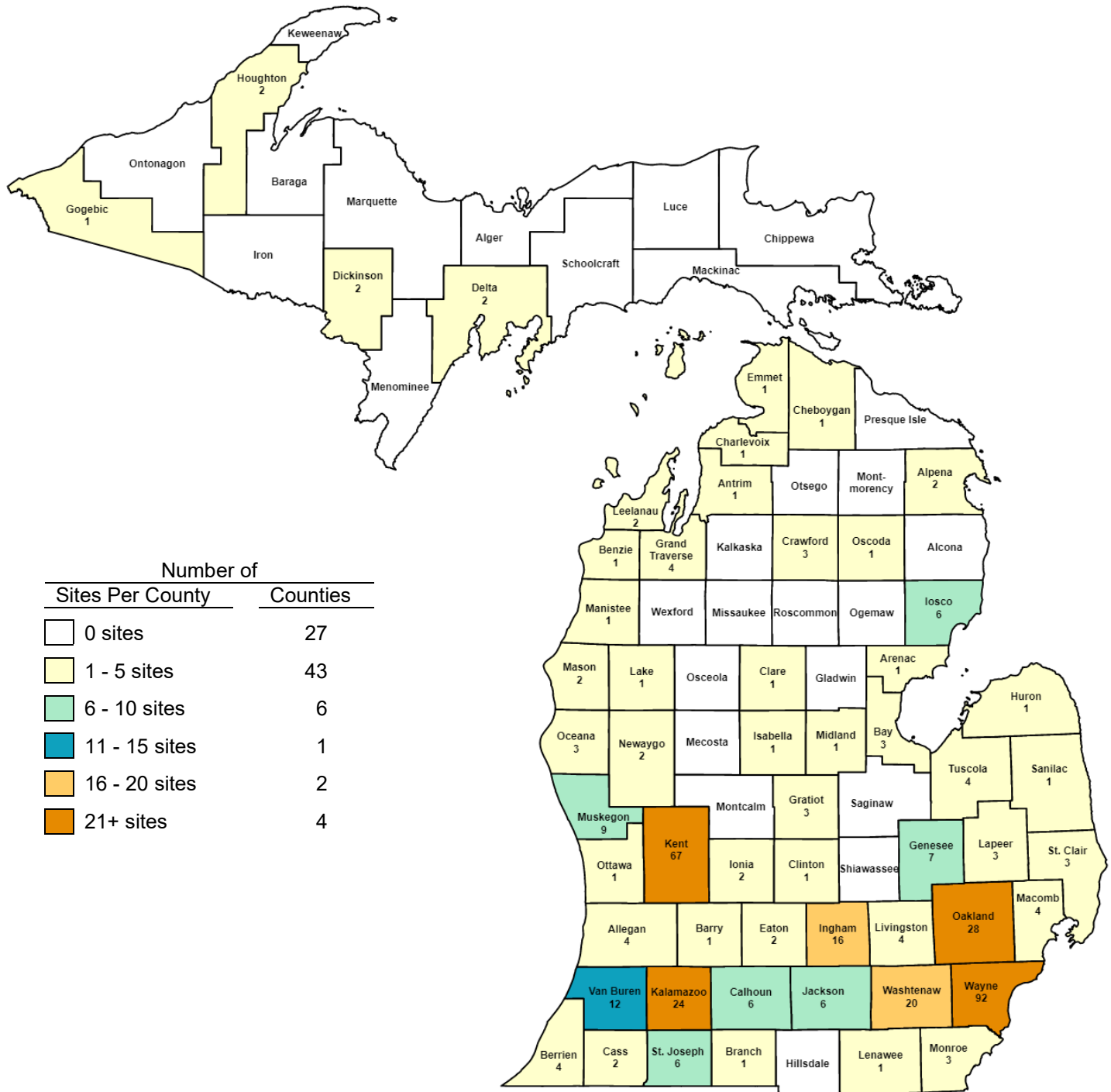


* The number of identified underfunded project sites is not all-inclusive.

Source: The OAG prepared this exhibit using data obtained from EGLE.

CLEAN MICHIGAN INITIATIVE ENVIRONMENTAL PROTECTION PROGRAMS
Department of Environment, Great Lakes, and Energy (EGLE)

Number of Sites With Priority ECRP Projects by County
As of August 2022



Source: The OAG prepared this exhibit based on data obtained from EGLE.

PROGRAM DESCRIPTION

Clean Michigan Initiative (CMI)

Sections 324.19601 - 324.19616 of the *Michigan Compiled Laws* provide for the specific use of CMI bond proceeds as follows:

	Authorized Amount (in millions)
<u>Environmental Protection Programs</u>	
Response activities at facilities	\$335.0
Water quality monitoring, water resource protection, and pollution control activities	90.0
Nonpoint source pollution prevention and control projects or wellhead protection projects	50.0
Waterfront improvements	50.0
Remediation of contaminated lake and river sediments	25.0
Pollution prevention programs	20.0
<u>Natural Resources Protection Programs</u>	
State park infrastructure improvements	50.0
Local recreation projects	50.0
<u>Health Protection Program</u>	
Abatement of lead hazards	5.0
Total	<u>\$675.0</u>

EGLE's CMI Programs

EGLE administers the following CMI programs through its various divisions:

1. Response Activities at Facilities (up to \$335 million)
These activities are provided through four programs:
 - Environmental Cleanup and Redevelopment Program (\$241 million)
This Program provides State-funded cleanup at contaminated facilities that pose an imminent or substantial endangerment to public health, safety, or welfare or to the environment. It also provides cleanup and/or demolition at sites to promote commercial redevelopment, create jobs, and revitalize neighborhoods.

- **Brownfield Redevelopment Grant and Loan Programs (up to \$75 million)**
These two programs provide grants (\$50 million) and loans (\$25 million) to local units of government for response activities at known or suspected contaminated properties with redevelopment potential.
 - **Municipal Landfill Cost-Share Grant Program (\$8 million)**
This Program provides grants to local units of government that undertake cleanup actions at municipal solid waste landfills on, or nominated for, the federal Superfund National Priorities List of contaminated sites.
2. **Waterfront Redevelopment Program (up to \$50 million)**
This Program provides grants to local communities for innovative waterfront improvements that contribute significantly to the local community's economy; to the redevelopment or revitalization of neighborhoods; and to increase public access to the Great Lakes, their connecting waterways, a river, or a lake. Eligible activities include environmental response activities, acquisition of waterfront property, relocation and/or demolition of buildings and facilities, and infrastructure and public facility improvements.
 3. **Remediation of Contaminated Lake and River Sediments Program (up to \$25 million)**
This Program expands efforts already underway to remove sediments from lakes and rivers contaminated by toxins, such as polychlorinated biphenyls (PCBs), mercury, and dichlorodiphenyltrichloroethane (DDT).
 4. **Nonpoint Source Pollution Prevention and Control Program (up to \$50 million)**
This Program provides grants to nonprofit entities or local units of government to implement physical improvements as identified in an approved EGLE watershed management plan to control the runoff of pollutants such as sediments, nutrients, and pesticides into rivers, lakes, and streams. Physical improvements are defined as vegetative and structural practices and include vegetative buffers, conservation easements, storm water basins, fencing to prevent livestock access to streams, and other practices that control nonpoint source pollution.
 5. **Clean Water Fund (up to \$90 million)**
This fund, which includes the Water Quality Monitoring Program, provides funds to implement a comprehensive water quality monitoring plan to determine water quality trends, evaluate water protection programs, and detect emerging problems.

Funding also supports implementation of a variety of other water quality programs, including implementing recommendations in watershed management plans in high quality waters and Great Lakes areas of concern; implementing voluntary municipal storm water permits; identifying and eliminating illicit connections to storm sewer systems; locating and plugging abandoned wells; identifying and fixing failing septic systems that threaten or impair State waters; and establishing technical and decision support tools for the Water Use and Withdrawal Program. In addition, CMI funding provides State matching funds required to obtain federal funding for the Conservation Reserve Enhancement Program.

6. Pollution Prevention Program (up to \$20 million)

This program consists of three subprograms:

- Retired Engineers Technical Assistance Program Fund (\$10 million)
This subprogram creates an endowment to provide funding for pollution prevention assessments by retired engineers and scientists for businesses, municipalities, and public institutions.
- Small Business Pollution Prevention Assistance Revolving Loan Funds (\$5 million)
This subprogram provides funds to establish a revolving loan fund for small businesses to implement pollution prevention improvements.
- Pollution Prevention Activities (\$5 million)
This subprogram will further pollution prevention activities throughout the State, including start-up funding for local governments to operate household hazardous waste collections; grants to public and private organizations to implement regional pollution prevention projects; the establishment of the Green Chemistry Support Program to advance research, development, and implementation of green chemistry technologies and practices; and the development of an environmental education curriculum for middle schools.

As of September 30, 2021, EGLE has expended \$548.8 million in CMI funds on environmental protection projects since fiscal year 1999.

AUDIT SCOPE, METHODOLOGY, AND OTHER INFORMATION

AUDIT SCOPE

To examine the programs and associated records of the CMI Environmental Protection Programs. We conducted this performance audit* in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Because the following programs and subprograms were closed prior to our audit period, we did not include them in the scope of this audit:

- Response activities at facilities - Municipal Landfill Cost-Share Grant Program
- Waterfront improvements - Waterfront Redevelopment Grants Program
- Clean Water Fund:
 - Abandoned Well Management Grants Program
 - Drinking Water Program
 - Voluntary Stormwater Permits Grants
 - Failing On-Site Septic Systems
 - Village of Chesaning Water Pollution Control Grant
 - Protecting High Quality Waters
 - Illicit Storm Sewer Connection Grants Program
 - Remedial Action Plan and Lakewide Management Plan
 - Conservation Reserve Enhancement Program
- Pollution Prevention Program subprograms:
 - Retired Engineers Technical Assistance
 - Small Business Pollution Prevention Assistance
 - Pollution Prevention Activities

Accordingly, we do not express any conclusions related to these programs and subprograms.

As part of the audit, we considered the five components of internal control (control environment, risk assessment, control activities, information and communication, and monitoring activities) relative to the audit objectives and determined that all components were significant.

* See glossary at end of report for definition.

PERIOD

Our audit procedures, which included a preliminary survey, audit fieldwork, report preparation, and quality assurance, generally covered October 1, 2019 through September 30, 2021.

METHODOLOGY

We conducted a preliminary survey to gain an understanding of EGLE's CMI-related operations and activities to establish audit objectives, scope, and methodology. During our preliminary survey, we:

- Obtained an understanding of CMI programs and projects and the use of CMI funding.
- Reviewed applicable laws, regulations, policies, and procedures.
- Interviewed EGLE staff to further our understanding of various programs.

OBJECTIVE 1

To assess the effectiveness of EGLE's efforts to ensure the use of CMI funds complies with laws, regulations, and contract requirements.

To accomplish this objective, we:

- Reviewed applicable CMI funding and reporting criteria in the *Michigan Compiled Laws* and *Michigan Administrative Code*.
- Obtained an understanding of EGLE's processes for awarding CMI funds.
- Randomly sampled 18 and judgmentally sampled 6 of the 175 active CMI-funded projects during the audit period to assess whether EGLE complied with laws and regulations when awarding the funds and to assess the accuracy of project expenditures presented in the annual report. Our random sample was selected to eliminate any bias and enable us to project the results to the entire population. The judgmentally selected portion of the sample was selected to ensure projects with the largest expenditures were included in the review and cannot be projected to the entire population.
- Randomly sampled 11 of the 38 Brownfield loans that were in repayment status during our audit period to assess whether the loans are being repaid in accordance with contractual agreements and whether EGLE monitors the timeliness of repayments. Our random sample was selected to eliminate any bias and enable us to project the results to the entire population.

- Analyzed expenditures presented in the fiscal year 2020 annual report and the fiscal year 2022 first quarter Active Cleanup Projects Funding Report to assess whether the information presented in the report was accurate.
- Reconciled the amount of CMI expenditures reported in the annual report with the State's accounting records.

OBJECTIVE 2

To compile and report data for programs eligible for CMI funding.

To accomplish this objective, we compiled and reported selected data for EGLE programs eligible for CMI funding.

CONCLUSIONS

We base our conclusions on our audit efforts and any resulting material conditions* or reportable conditions*.

AGENCY RESPONSES

Not applicable.

PRIOR AUDIT FOLLOW-UP

Following is the status of the reported finding from our March 2021 performance audit of the Clean Michigan Initiative Environmental Protection Programs, Department of Environment, Great Lakes, and Energy (761-0217-20):

Prior Audit Finding Number	Topic Area	Current Status	Current Finding Number
1	EGLE should strengthen its reporting process to ensure the accuracy of CMI project activity presented in its annual report to the Legislature.	Complied	Not applicable

SUPPLEMENTAL INFORMATION

Our audit report includes supplemental information presented as Exhibits 1 through 7. Our audit was not directed toward expressing a conclusion on this information.

* See glossary at end of report for definition.

GLOSSARY OF ABBREVIATIONS AND TERMS

annual report	State Environmental Cleanup Programs Report.
area of concern	A geographic location that has experienced environmental degradation.
CMI	Clean Michigan Initiative.
ECRP	Environmental Cleanup and Redevelopment Program.
effectiveness	Success in achieving mission and goals.
EGLE	Department of Environment, Great Lakes, and Energy.
EPA	U.S. Environmental Protection Agency.
facility	Any area, place, or property where a hazardous substance in excess of the concentrations that satisfy the cleanup criteria for unrestricted residential use has been released, deposited, disposed of, or otherwise comes to be located. "Facility" does not include any area, place, or property provided for in Section 324.20101(s) of the <i>Michigan Compiled Laws</i> .
industrial partner	A local business that has voluntarily partnered with the EPA Great Lakes National Program Office to implement a contaminated sediment cleanup through the Great Lakes Legacy Act.
material condition	A matter that, in the auditor's judgment, is more severe than a reportable condition and could impair the ability of management to operate a program in an effective and efficient manner and/or could adversely affect the judgment of an interested person concerning the effectiveness and efficiency of the program. Our assessment of materiality is in relation to the respective audit objective.
observation	A commentary highlighting certain details or events that may be of interest to users of the report. An observation may not include all of the attributes (condition, effect, criteria, cause, and recommendation) presented in an audit finding.
performance audit	An audit that provides findings or conclusions based on an evaluation of sufficient, appropriate evidence against criteria.

Performance audits provide objective analysis to assist management and those charged with governance and oversight in using the information to improve program performance and operations, reduce costs, facilitate decision-making by parties with responsibility to oversee or initiate corrective action, and contribute to public accountability.

reportable condition

A matter that, in the auditor's judgment, is less severe than a material condition and falls within any of the following categories: a deficiency in internal control; noncompliance with provisions of laws, regulations, contracts, or grant agreements; opportunities to improve programs and operations; or fraud.

response activity

The evaluation, interim response activity, remedial action, demolition, or the taking of other actions necessary to protect the public health, safety, or welfare; the environment; or the State's natural resources.

RMF

Renew Michigan Fund.

**Statewide Integrated
Governmental
Management Applications
(SIGMA)**

The State's enterprise resource planning business process and software implementation that support budgeting, accounting, purchasing, human resource management, and other financial management activities.

TCE

trichloroethylene.

UST

underground storage tank.



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