APPENDIX D: STATUS OF CATEGORY 4 WATERS

STATUS OF CATEGORY 4 WATERS AS OF INDIANA'S 2020 INTEGRATED REPORT SUBMITTAL

In accordance with U.S. EPA guidance (U.S. EPA 2001, 2005, 2006, 2009, 2011, 2013, 2015, and 2017), Indiana's Category 4 waters are identified in Indiana's Consolidated List, which is included in Indiana's 2020 Integrated Monitoring and Assessment Report, Appendix L. Category 4 consists of impairments for which a Total Maximum Daily Load (TMDL) is not required. The subcategories of Indiana's Category 4 list are described below:

- Category 4A consists of impairments for which a TMDL has been approved by U.S. EPA and is expected to result in attainment of all applicable water quality standards (WQS).
- Category 4B consists of impairments for which other pollution control requirements are expected to result in the attainment of the WQS in a reasonable period of time.
- Category 4C consists of impairments that are not caused by a pollutant and as such, do not require a TMDL.

Categories 4 and 5 of IDEM's Consolidated List together provide the most comprehensive assessment of impairment of Indiana waters to date. With each 303(d) listing cycle, U.S. EPA requests an update on the status of Indiana's Category 4 waters to facilitate tracking of all known impairments. These impairments and their current status are discussed in the following sections.

CATEGORY 4A IMPAIRMENTS

Category 4A consists of impairments for which a TMDL has been approved by U.S. EPA and is expected to result in attainment of all applicable WQS. IDEM's progress in TMDL development since the 2018 cycle is discussed in the Notice of Comment Period for the draft 2020 303(d) list and in this appendix of the 2020 Integrated Report. This appendix provides a comprehensive update on all TMDLs approved to date and the impairments they cover. With the submittal of its 2020 Integrated Report, IDEM has developed a total of two thousand nine hundred ninety four (2,994) TMDLs, which have been approved by U.S. EPA.

The impairments addressed by these TMDLs can be found in the listing tables provided in Appendix L. Table 1 provides a list of all TMDLs approved to date and a key for their corresponding impairments in Appendix L. which also identifies any changes made as a result of reindexing to the assessment units previously listed in Category 4A. This information appears in the columns with updated assessment unit IDs (AUIDs) and names where applicable.

Table 1: TMDLs approved as of IDEM's submittal of its 2020 Integrated Report.

TMDL	IR	Approval	of IDEM's submittal of its 2020 Integrated Report. TMDL Document Title				
Key	Cycle	Date					
1	2002	3/5/2001	Dissolved Oxygen and Ammonia TMDL Development for Kokomo Creek, Indiana: Final				
2	2006	3/1/2004	Trail Creek Escherichia Coli TMDL Report				
3	2006	3/31/2004	Fall Creek TMDL Study				
4	2006	3/31/2004	Pleasant Run and Bean Creek TMDL Study				
5	2006	3/31/2004	White River TMDL Study				
6	2006	4/9/2004	West Fork White River, Muncie to Hamilton-Marion County Line TMDL for <i>E. coli</i> Bacteria: TMDL Report				
7	2006	7/21/2004	Total Maximum Daily Load for <i>Escherichia coli</i> (<i>E. coli</i>) for the St. Joseph River, Elkhart and St. Joseph Counties				
8	2006	9/1/2004	Lake Michigan Shoreline TMDL for <i>E. coli</i> Bacteria				
9	2006	9/27/2004	Salt Creek E. coli TMDL				
10	2006	12/13/2004	Total Maximum Daily Load (TMDL) for <i>Escherichia coli</i> (<i>E. coli</i>) for the Prairie Creek Watershed, Daviess County				
11	2006	1/28/2005	Little Calumet and Portage Burns Waterway TMDL for E. coli Bacteria				
12	2006	3/28/2005	Total Maximum Daily Load for <i>Escherichia coli</i> (<i>E. coli</i>) for the Lower Eel River Watershed Clay, Owen, Greene, Vigo, and Sullivan Counties				
13	2006	3/31/2005	Total Maximum Daily Load for <i>Escherichia coli</i> (<i>E. coli</i>) For the Upper Mill Creek Watershed, Hendricks, Putnam, Morgan, and Owen Counties				
14	2006	4/5/2005	Total Maximum Daily Load for <i>Escherichia coli</i> (<i>E. coli</i>) for the Kessinger Ditch Watershed, Knox County				
15	2006	4/29/2005	Total Maximum Daily Load (TMDL) for <i>Escherichia coli</i> (<i>E. coli</i>) for the First Creek Watershed, Martin, Daviess, and Greene Counties				
16	2006	7/19/2005	Total Maximum Daily Load for <i>Escherichia coli (E. coli)</i> for the Indian Creek Watershed, Morgan and Johnson County				
17	2006	7/21/2005	Total Maximum Daily Load for <i>Escherichia coli</i> (<i>E. coli</i>) for the Middle West Fork White River Watershed, Morgan, Owen, and Greene Counties				
18	2006	9/22/2005	Total Maximum Daily Load for <i>Escherichia coli</i> (<i>E. coli</i>) for the Flatrock-Haw Creek Watershed in Henry, Fayette, Rush, Decatur, Shelby, and Bartholomew Counties				
19	2006	3/1/2006	Total Maximum Daily Load for <i>Escherichia coli</i> (<i>E. coli</i>) for the Lambs Creek Watershed, Morgan County				
20	2008	4/2/2006	Total Maximum Daily Load for <i>Escherichia coli (E. coli)</i> for the Beanblossom Creek Watershed, Brown and Monroe Counties				
21	2008	6/8/2006	Total Maximum Daily Load for <i>Escherichia coli (E. coli)</i> For the Plummer Creek Watershed, Greene County				
22	2008	7/31/2006	Total Maximum Daily Load for <i>E. coli</i> Impairment Big Blue River Watershed, Henry and Rush Counties				
23	2008	8/3/2006	Total Maximum Daily Load for <i>Escherichia coli (E. coli)</i> for the Richland Creek Watershed, Greene, Monroe, and Owen Counties				
24	2008	8/21/2006	Total Maximum Daily Load for <i>E. coli</i> Impairment St. Marys River Watershed and Maumee River, Adams and Allen Counties				
25	2008	9/22/2006	Total Maximum Daily Load for Impaired Biotic Communities and Nutrients for the Blue Creek/Habegger Ditch and Yellow Creek Watersheds, Adams County				

TMDL Key	IR Cycle	Approval Date	TMDL Document Title			
26	2008	9/22/2006	Wabash River Nutrient and Pathogen TMDL Development: Public Review Draft			
27	2008	5/14/2007	Total Maximum Daily Load for <i>Escherichia coli (E. coli)</i> for the Sugar Creek Watershed, Hancock, Henry, Johnson, Madison, and Shelby Counties			
28	2008	7/16/2007	Limberlost Creek Watershed Sediment and Nutrient TMDL Development: Public Review Draft			
29	2008	7/26/2007	Total Maximum Daily Load for <i>Escherichia coli (E. coli)</i> for the East Fork Whitewater River Watershed, Wayne, Union, Fayette, and Franklin Counties			
30	2008	8/16/2007	Total Maximum Daily Load for <i>Escherichia coli (E. coli)</i> West Fork White River (WFWR) Owen County Tributary Watershed - Owen, Greene, and Monroe Counties			
31	2010	4/23/2008	Duck Creek, Pipe Creek, Killbuck Creek, and Stony Creek TMDLs for <i>E. coli</i> Bacteria: Final TMDL Report			
32	2010	7/31/2008	South Fork Wildcat Creek Watershed Pathogen, Sediment, and Nutrient TMDL Development			
33	2012	4/2/2009	Final Total Maximum Daily Load for <i>Escherichia coli</i> (<i>E. coli</i>) For the West Fork Whitewater Watershed, Randolph, Wayne, Fayette, Henry, and Franklin Counties			
34	2010	9/29/2009	Total Maximum Daily Load Report for the Kankakee/Iroquois Watershed: Final			
35	2012	9/24/2010	Total Maximum Daily Load for Escherichia coli (E. coli) for the Upper Wildcat Creek Watershed, Howard, Tipton, Grant, and Madison Counties			
36	2012	9/24/2010	Total Maximum Daily Load for <i>Escherichia coli (E. coli)</i> for the Middle Fork Wildcat Creek Watershed, Clinton, Carroll, Tippecanoe, and Howard Counties			
37	2012	9/24/2010	Total Maximum Daily Load for <i>Escherichia coli (E. coli)</i> for the Lower Wildcat Creek Watershed, Carroll, Clinton, Howard, Tippecanoe, and Tipton Counties			
38	2012	9/20/2010	Total Maximum Daily Load for <i>Escherichia coli (E. coli)</i> for the Galena River Watershed, La Porte and St. Joseph Counties			
39	2012	9/7/2011	Total Maximum Daily Load for <i>Escherichia coli (E. coli)</i> in the Highland-Pigeon Creek Watershed and Total Phosphorous for Hurricane Creek, Gibson, Pike, Vanderburgh, Posey, and Warrick Counties			
40	2012	9/30/2011	Total Maximum Daily Load for <i>Escherichia coli (E. coli)</i> in the Cicero Creek Watershed, Hamilton, Tipton, Boone and Clinton Counties			
41	2012	9/20/2011	Total Maximum Daily Load for <i>Escherichia coli (E. coli)</i> in the Upper White River Headwaters Watershed in Randolph, Delaware, and Henry Counties			
42	2012	9/7/2012	Total Maximum Daily Load for Escherichia coli (E. coli) and Impaired Biotic Communities (IBC) in the Salt Creek Watershed in Porter County			
43	2014	9/20/2012	Pigeon River Watershed Total Maximum Daily Load Study for E. Coli and Impaired Biotic Community (IBC)			
44	2014	9/20/2013	Escherichia coli and Impaired Biotic Community Total Maximum Daily Load Report for the Big Raccoon Creek Watershed			
45	2014	9/20/2013	Escherichia coli (E. coli) Total Maximum Daily Load Report for the Otter Creek Watershed			
46	2016	7/14/2014	Escherichia coli (E. coli) Total Maximum Daily Load Report for the Lower Big Blue River Watershed			
47	2016	9/26/2014	Total Maximum Daily Load Report for the Deep River-Portage Burns Watershed			
48	2016	9/30/2015	Total Maximum Daily Load for the Southern Whitewater River Watershed			
49	2018	2/24/2017	Total Maximum Daily Load Report for the Upper Mississinewa River Watershed			

TMDL Key	IR Cycle	Approval Date	TMDL Document Title			
50	2018	9/15/2017	Total Maximum Daily Load Report for the South Fork Blue River Watershed			
51	2018	10/26/2017	St. Joseph River Watershed Indiana TMDLs			
52	2020	9/10/2018	Total Maximum Daily Load Report for the Lower Salt Creek Watershed			
53	2020	12/19/2019	Total Maximum Daily Load Report for the Lower East Fork White River Watershed			

CATEGORY 4B IMPAIRMENTS

Category 4B consists of impairments for which other pollution control requirements are expected to result in the attainment of the WQS in a reasonable period of time. As of 2020, IDEM's Category 4B list contains a total of eighteen (18) impairments. IDEM did not add any impairments to Category 4B for the 2020 cycle. However, there were some revision made to the AUIDs assessed as impaired to correctly reflect IDEM's finalized Reach Index.

IDEM originally placed the impairments identified in Table 2 in Category 4B in 2002 based on evidence that the electric generating facilities discharging to these waters were responsible for the thermal impairments identified. The facilities in question have NPDES permits for with thermal discharge limits based on site-specific standards and have contested this decision based on annual reports they had submitted indicating no detrimental effects from their discharges. As a result of this apparently contradictory information, IDEM determined that that additional study was needed to determine whether the monitoring and reporting requirements under section 316(a) were sufficient to ensure a well balanced aquatic community of waters outside the mixing zone.

Through an Interagency Agreement with IDEM, the U.S. Fish and Wildlife Service developed a report entitled, "Evaluation and Assessment of Fish Assemblages Near Electric Generating Facilities: with Emphasis on Review of Discharge Submitted Data, Development of the Standard Operation Procedures, and Traveling Zone Assessment." The objectives of this study were:

- To evaluate the information submitted by the thermal discharge permittees for compliance with 316(a) requirements;
- To develop standard methods that would provide industrial contractors specific protocols for use in meeting permit monitoring requirements for their heated effluents;
- To conduct traveling zone studies of discharge relationships from selected thermal generating facilities, including specifically two of the three facilities to which the above impairments were attributed.

IDEM reviewed the results of this study and determined that additional monitoring and reporting requirements were necessary under Section 316(a) of the Clean Water Act (CWA) and Indiana Administrative Code 327 IAC 5-7 to ensure a well balanced aquatic community of waters outside the mixing zone. In 2006 and 2007, IDEM renewed permits for most electric generating facilities, which included additional conditions that require the permittees to submit a new 316(a) demonstration/variance request with the renewal application for their next NPDES permit cycle. In order to be granted a 316(a)

variance, these facilities must include a site-specific biological study plan in their request that demonstrates that the variance will not result in biological impairment outside the mixing zone.

IDEM recently developed a guidance for permittees requesting a 316(a) thermal limits variance in their NPDES permit: "Guidance for Conducting a Demonstration as a Requirement of a 316(a) Alternative Thermal Effluent Limitation Request". This document contains the guidance necessary for completing an application for alternative thermal effluent limitations, a Type I, II, or III Demonstration, and sampling and monitoring consistent with associated standard operating procedures. A demonstration for alternative thermal effluent limitations, in accordance with section 316(a) of the CWA and 327 IAC 5-7, should provide IDEM with adequate information to establish alternative thermal effluent limitations that will ensure the protection and propagation of a Balanced, Indigenous Community (BIC) in and on the waters into which a thermal discharge is made. IDEM's guidance document is currently under internal (IDEM/U.S. EPA) review. In the meantime until IDEM begins full implementation of its approach to issuing 316(a) thermal variances, when NPDES permits with existing 316(a) thermal variances come up for renewal, IDEM is adding year round alternative thermal limits (if they do not already exist) to the permit until a complete revised 316(a) application can be submitted and evaluated.

With regard specifically to Turtle Creek Reservoir, IDEM did not renew the 316(a) thermal variance the Hoosier Energy – Merom Generating Station NPDES Permit at the time the permit was up for renewal (December 22, 2010). The facility was instead given a three-year schedule of compliance to meet the thermal water quality standards found in rule but were unsuccessful. The facility entered into an Agreed Order that was adopted on December 30, 2013. The Agreed Order requires the facility to submit a 316(a) study plan for review and comment in the spring of 2014. On January 21, 2020, Hoosier Energy announced its intention to close the plant in 2023 as part of its new 20-year resource plan. IDEM anticipates that this closure will result in significant improvement in thermal conditions in the reservoir.

Table 2: Category 4B impairments attributed to electrical generating facility discharges.

BASIN	HYDROLOGIC UNIT CODE	COUNTY	ASSESSMENT UNIT AUID	ASSESSMENT UNIT NAME	PARAMETER
LOWER WABASH	51201081602	Fountain/Parke/ Vermillion	INB08G2_02	WABASH RIVER	TEMPERATURE
LOWER WABASH	51201081602	Parke/Vermillion	INB08G2_03	WABASH RIVER	TEMPERATURE
LOWER WABASH	51201081602	Parke/Vermillion	INB08G2_04	WABASH RIVER	TEMPERATURE
LOWER WABASH	51201081603	Parke/Vermillion	INB08G3_02	WABASH RIVER	TEMPERATURE
LOWER WABASH	51201081603	Parke/Vermillion	INB08G3_03	WABASH RIVER	TEMPERATURE
LOWER WABASH	51201110604	Vigo	INB1164_03	WABASH RIVER	TEMPERATURE
LOWER WABASH	51201110604	Vigo	INB1164_04	WABASH RIVER	TEMPERATURE
LOWER WABASH	51201110605	Vigo	INB1165_04	WABASH RIVER	TEMPERATURE
LOWER WABASH	51201110605	Vigo	INB1165_05	WABASH RIVER	TEMPERATURE
LOWER WABASH	51201110605	Vigo	INB1165_06	WABASH RIVER	TEMPERATURE
LOWER WABASH	51201111601	Sullivan	INB11P1028_00	TURTLE CREEK RESERVOIR	BIOLOGICAL INTEGRITY
LOWER WABASH	51201111601	Sullivan	INB11P1028_00	TURTLE CREEK RESERVOIR	TEMPERATURE

Table 3 identifies Category 4B impairments attributed to other sources. These waters were placed on in Category 4B in 2004. The identified impairments were attributed to the Picnic Wood Wastewater Treatment Plant, owned by LMH Utilities Corporation and are presently being addressed through IDEM's NPDES program. LMH Utilities Corporation completed upgrades to its facility in late 2007. The plant continues to have sporadic compliance issues including effluent violations for ammonia in 2015 and a sanitary sewer overflow at the main lift station in 2018 as well as ongoing operational issues. These impairments will remain in Category 4B through the 2020 303(d) listing cycle to allow time for IDEM to conduct the follow-up monitoring necessary to determine if the current biological condition of these waters.

Table 3: Category 4B impairments attributed to Picnic Woods Wastewater Treatment Plant, owned by LMH Utilities Corporation.

BASIN	HYDROLOGIC UNIT CODE	COUNTY	ASSESSMENT UNIT AUID	ASSESSMENT UNIT NAME	PARAMETER
OHIO TRIBUTARIES	50902030304	Dearborn	INV0334_T1005	TURKEY FORK	BIOLOGICAL INTEGRITY
OHIO TRIBUTARIES	50902030304	Dearborn	INV0334_T1005	TURKEY FORK	CHLORIDE
OHIO TRIBUTARIES	50902030304	Dearborn	INV0334_T1011	TURKEY FORK	BIOLOGICAL INTEGRITY
OHIO TRIBUTARIES	50902030304	Dearborn	INV0334_T1011	TURKEY FORK	CHLORIDE
OHIO TRIBUTARIES	50902030304	Dearborn	INV0334_T1012	TURKEY FORK	BIOLOGICAL INTEGRITY
OHIO TRIBUTARIES	50902030304	Dearborn	INV0334_T1012	TURKEY FORK	CHLORIDE

CATEGORY 4C IMPAIRMENTS

To date, Category 4C consists of seventeen (17) impairments that are not caused by a pollutant and as such, do not require a TMDL. These are impairments resulting from stressors for which a load cannot be calculated. Category 4C impairments and their sources are shown in Table 4. Although a TMDL is not required for these impairments, IDEM may conduct additional monitoring on these waters through its rotating basin monitoring schedule. IDEM did not add any impairments to Category 4C for the 2020 cycle. However, there were a number of impairments removed from this list based on IDEM's review of the segmentation of the reaches originally approved for Category 4C. These changes were made to 4 correctly reflects IDEM finalized Reach Index and can be found in the Category 4 change file in Appendix L.

Table 4: Indiana's Category 4C impairments.								
BASIN	HYDROLOGIC UNIT CODE	COUNTY	ASSESSMENT UNIT AUID	ASSESSMENT UNIT NAME	PARAMETER	POLLUTION SOURCE		
UPPER WABASH	51201010703	Wells	INB0173_03	ROCK CREEK	BIOLOGICAL INTEGRITY	HABITAT MODIFICATON - OTHER THAN HYDROMODIFICATION		
UPPER WABASH	51201010704	Huntington/ Wells	INB0174_01	ROCK CREEK	BIOLOGICAL INTEGRITY	HABITAT MODIFICATON - OTHER THAN HYDROMODIFICATION		
UPPER WABASH	51201030507	Grant	INB0357_T1003	LITTLE CREEK	BIOLOGICAL INTEGRITY	CHANNELIZATION and HABITAT MODIFICATON - OTHER THAN HYDROMODIFICATION		
UPPER WABASH	51201070102	Tipton	INB0712_02	BROAD CREEK	BIOLOGICAL INTEGRITY	CHANNELIZATION		
GREAT LAKES	40400010509	Lake/Porter	INC0159_03	BURNS DITCH	BIOLOGICAL INTEGRITY	CHANNELIZATION and HABITAT MODIFICATON - OTHER THAN HYDROMODIFICATION		
OHIO TRIBUTARIES	51402010908	Spencer	INE0198_T1044	LITTLE PIGEON CREEK, EAST FORK - UNNAMED TRIBUTARY	BIOLOGICAL INTEGRITY	DAM OR IMPOUNDMENT		
UPPER ILLINOIS	71200010402	LaPorte	INK0142_T1001	KINGSBURY CREEK - UNNAMED TRIBUTARY	BIOLOGICAL INTEGRITY	CHANNELIZATION		
OHIO TRIBUTARIES	51401010206	Switzerland	INN0126_T1006	DRY FORK	BIOLOGICAL INTEGRITY	NATURAL SOURCES		
PATOKA RIVER	51202090201	Dubois	INP0921_T1021	HALL CREEK - UNNAMED TRIBUTARY	BIOLOGICAL INTEGRITY	CHANNELIZATION		
PATOKA RIVER	51202090301	Spencer	INP0931_02	HUNLEY CREEK	BIOLOGICAL INTEGRITY	CHANNELIZATION and HABITAT MODIFICATON - OTHER THAN HYDROMODIFICATION		
EAST FORK WHITE	51202080805	Lawrence	INW0885_03	LITTLE SALT CREEK	DISSOLVED OXYGEN	NATURAL SOURCES		
EAST FORK WHITE	51202080805	Lawrence	INW0885_04	LITTLE SALT CREEK	DISSOLVED OXYGEN	NATURAL SOURCES		
EAST FORK WHITE	51202080805	Lawrence	INW0885_05	LITTLE SALT CREEK	DISSOLVED OXYGEN	NATURAL SOURCES		
EAST FORK WHITE	51202080805	Lawrence	INW0885_06	LITTLE SALT CREEK	DISSOLVED OXYGEN	NATURAL SOURCES		
EAST FORK WHITE	51202080805	Lawrence/M onroe	INW0885_T1001	LITTLE SALT CREEK - UNNAMED TRIBUTARY	DISSOLVED OXYGEN	NATURAL SOURCES		
EAST FORK WHITE	51202080805	Lawrence	INW0885_T1005	BREWER BRANCH	DISSOLVED OXYGEN	NATURAL SOURCES		
EAST FORK WHITE	51202081103	Martin	INW08B3_03	BOGGS CREEK	DISSOLVED OXYGEN	NATURAL SOURCES		

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