

Summary of BUI Restoration Target Revisions

Ohio EPA – FINAL as of June 13, 2014

Beneficial Use Impairment		Ashtabula	Black	Cuyahoga	Maumee	2008 BUI Restoration Target	2014 BUI Proposed Restoration Target	Comments																																																														
BUI 1:	Restrictions on Fish Consumption	I	I	I	I	No fish consumption advisories of one meal per month (or more stringent) have been issued by ODH that can be attributed to sources within the AOC;	In the riverine waters upstream from the lake affected waters (lacustrary or fresh water estuary), the fish consumption advisories issued by the Ohio Department of Health in the AOC are the same or less stringent than one meal per month ; AND In the lake affected waters (lacustrary or fresh water estuary), the fish consumption advisories issued by the Ohio Department of Health in the AOC are the same or less stringent than the current Lake Erie advisories; OR If consumption advisories in the AOC are more stringent than the respective state-wide or lake-wide advisories and a study was conducted that demonstrates either (1) the source of contamination originates outside of the AOC or (2) the fish tissue concentrations within the AOC are not statistically different than non-AOC areas, reference sites or region-wide, background concentrations.	<ul style="list-style-type: none"> Target is still based on fish consumption advisories. Removed requirement to attribute sources to within the AOC following discussions with USEPA. Specified that lacustrary waters are compared to Lake Erie advisory levels and the riverine waters are compared to statewide advisory levels. 																																																														
	Restrictions on Wildlife Consumption	NI	NI	NI	I	No wildlife consumption advisories of one meal per months (or more stringent) have been issued by ODH that can be attributed to sources within the AOC.	Wildlife consumption advisories issued by the Ohio Department of Health in the AOC are the same or less stringent than one meal per month.	<ul style="list-style-type: none"> Removed requirement to attribute sources to within the AOC. 																																																														
BUI 2:	Tainting of Fish and Wildlife Flavor	NI	NI	NI	NI	No WQS exceedances of compounds associated with tainting within the AOC (phenol, 2-chlorophenol, 2,4-dichlorophenol); OR No reports of tainting from wildlife officials	No WQS exceedances of compounds associated with tainting within the Area of Concern (phenol, 2-chlorophenol, 2,4-dichlorophenol) ; AND/OR No reports of tainting from wildlife officials.	<ul style="list-style-type: none"> Second condition was change from “or” to “and/or”. 																																																														
BUI 3:	Degradation of Fish Populations	I	I	I	I	IBI and MIwb values do not significantly diverge from state applicable ecoregional biological criteria; For lacustraries and nearshore areas, IBI and MIwb values do not significantly diverge from guidelines based on Thoma 1999.	In the riverine areas upstream from the lake affected waters (lacustrary or fresh water estuary), the average Index of Biotic Integrity (IBI) and the average Modified Index of Well Being (MIwb) values within an assessment unit do not significantly diverge from state biological criteria. (See Appendix B for additional information)	<ul style="list-style-type: none"> Ohio EPA has determined non-significant departure to be 4 points and 0.5 points from state WQS for IBI and MIwb values, respectively, for riverine areas. The Riverine Fish Population Restoration Targets reflect the target as a non-significant departure from state WQS. Non-significant departure for neither the IBI nor the MIwb lacustrary values has been determined and the Lacustrary Fish Population Restoration Targets reflect state WQS values. If non-significant departure values are determined for lacustraries, these restoration targets may be adjusted. Assessment units for the fish populations are the 12-digit HU, Large River Assessment Unit (LRAU) or other agreed upon stream segment or sub-watershed. If a single assessment unit has multiple criteria that apply to that unit (e.g., wading, boating, lacustrary), then the unit should be evaluated in segments based on each criteria. If waters have more than one designated use (i.e., Lacustrary and LRW or MWH) then the lowest target applies. 																																																														
							<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="3" style="background-color: #d9e1f2;">Index Type – Site Type</th> <th colspan="8" style="background-color: #d9e1f2;">Riverine Fish Population Restoration Targets¹</th> </tr> <tr> <th colspan="4" style="background-color: #d9e1f2;">Erie/Ontario Lake Plain (EOLP)</th> <th colspan="4" style="background-color: #d9e1f2;">Huron-Erie Lake Plain (HELP)</th> </tr> <tr> <th style="background-color: #d9e1f2;">WWH</th> <th style="background-color: #d9e1f2;">EWH</th> <th style="background-color: #d9e1f2;">MWH</th> <th style="background-color: #d9e1f2;">LRW²</th> <th style="background-color: #d9e1f2;">WWH</th> <th style="background-color: #d9e1f2;">EWH</th> <th style="background-color: #d9e1f2;">MWH</th> <th style="background-color: #d9e1f2;">LRW²</th> </tr> </thead> <tbody> <tr> <td style="background-color: #d9e1f2;">IBI - Headwaters</td> <td style="text-align: center;">36</td> <td style="text-align: center;">46</td> <td style="text-align: center;">20</td> <td style="text-align: center;">14</td> <td style="text-align: center;">24</td> <td style="text-align: center;">46</td> <td style="text-align: center;">16</td> <td style="text-align: center;">14</td> </tr> <tr> <td style="background-color: #d9e1f2;">IBI – Wading*</td> <td style="text-align: center;">34</td> <td style="text-align: center;">46</td> <td style="text-align: center;">20</td> <td style="text-align: center;">14</td> <td style="text-align: center;">28</td> <td style="text-align: center;">46</td> <td style="text-align: center;">16</td> <td style="text-align: center;">14</td> </tr> <tr> <td style="background-color: #d9e1f2;">IBI - Boat*</td> <td style="text-align: center;">36</td> <td style="text-align: center;">44</td> <td style="text-align: center;">20</td> <td style="text-align: center;">12</td> <td style="text-align: center;">30</td> <td style="text-align: center;">44</td> <td style="text-align: center;">16</td> <td style="text-align: center;">12</td> </tr> <tr> <td style="background-color: #d9e1f2;">MIwb – Wading</td> <td style="text-align: center;">7.5</td> <td style="text-align: center;">8.9</td> <td style="text-align: center;">5.7</td> <td style="text-align: center;">4.0</td> <td style="text-align: center;">6.8</td> <td style="text-align: center;">8.9</td> <td style="text-align: center;">5.1</td> <td style="text-align: center;">4.0</td> </tr> <tr> <td style="background-color: #d9e1f2;">MIwb – Boat</td> <td style="text-align: center;">8.2</td> <td style="text-align: center;">9.1</td> <td style="text-align: center;">5.3</td> <td style="text-align: center;">4.5</td> <td style="text-align: center;">8.1</td> <td style="text-align: center;">9.1</td> <td style="text-align: center;">5.2</td> <td style="text-align: center;">4.5</td> </tr> </tbody> </table> <p><i>*Wading and boat refer to sampling methodology (i.e., wading in shallow water and use of a boat in deeper water)</i> ¹Ohio EPA has determined the non-significant departure value for riverine IBI to be 4 points MIwb to be 0.5 points; the targets presented in this table reflect the non-significant departure from Ohio WQS. ²Targets for Limited Resource Waters (LRW) are based on benchmarks as there are no criteria in Ohio WQS.</p> <p>OR In lake affected waters (lacustrary or fresh water estuary), the average L-IBI and the average MIwb values do not diverge from state guidelines. (See Appendix B for additional information and lacustrary locations in each AOC).</p>		Index Type – Site Type	Riverine Fish Population Restoration Targets ¹								Erie/Ontario Lake Plain (EOLP)				Huron-Erie Lake Plain (HELP)				WWH	EWH	MWH	LRW ²	WWH	EWH	MWH	LRW ²	IBI - Headwaters	36	46	20	14	24	46	16	14	IBI – Wading*	34	46	20	14	28	46	16	14	IBI - Boat*	36	44	20	12	30	44	16	12	MIwb – Wading	7.5	8.9	5.7	4.0	6.8	8.9	5.1	4.0	MIwb – Boat
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	Degradation of Wildlife Populations	NI	NI	NI	I	Healthy, reproducing populations of great blue heron, mink, bald eagle, osprey, river otter or other appropriate sentinel species are presents; OR ODNR restoration goals and management objectives are met and wildlife managers indicate populations are not degraded.	ODNR's annual Wildlife Population Status Reports or another similar study shows a steady or improving healthy, reproducing population of either terrestrial or avian resident species (e.g. bald eagle, osprey, sandhill crane, river otter) or other AOC appropriate sentinel species for at least 3 of the last 5 years.	<ul style="list-style-type: none"> Ohio EPA discussed the target with ODNR officials and confirmed that the status reports are available and will provide the needed data for sentinel species to evaluate the BUI. For the wildlife populations, the AOC should be evaluated as a whole. 											
BUI 4:	Fish Tumors or Other Deformities	I	In Rec	I	I	DELT levels in fish do not exceed 0.5%; AND Where brown bullheads are present, low tumor prevalence is documented in fish age 3 years and older over a series of years. Current guidelines suggest that a 5% incidence of liver tumors and a 12% incidence of external tumors are acceptable to consider the area to be in recovery.	<p>The average DELT values within the assessment unit do not exceed either:</p> <ul style="list-style-type: none"> DELT values of 3% (lacustrary and boat sites), or DELT values 1.3% (wading sites). <p>----- AND -----</p> <p>Where brown bullheads are present, the liver tumor prevalence rate (i.e., neoplastic or preneoplastic liver tumors) should not exceed 5%.</p>	<ul style="list-style-type: none"> After discussions with OEPA ecological assessment unit, decided to adjust DELT% values to correspond with '3 score' as identified in the IBI metric. After reviewing recent PA delisting documents and 2010 Baumann study, decided to use 5% liver tumor prevalence rate for brown bullhead as Restoration Target. Previous guidance recommended the 5% be used for 'in recovery' designation. Although Baumann suggested 2% liver tumor prevalence background rate, it isn't until rates reach 5% that they can be statistically differentiated from background. A study is currently underway to determine the background rates for tumor and deformity incidence rates in Ohio AOCs. Once the study is complete, Ohio EPA will review the results and determine if the current target should be revised. Assessment units are the 12-digit HU, Large River Assessment Unit (LRAU) or other agreed upon stream segment or sub-watershed. Brown bullhead liver tumor prevalence rates are evaluated in specified stream reaches within the AOC where populations are likely to be present. 											
BUI 5:	Bird or Animal Deformities or Reproductive Problems	NI	NI	NI	NI	No reports of wildlife population deformities or reproductive problems from wildlife officials resulting from contaminants within the AOC.	No reports of wildlife population deformities or reproductive problems from wildlife officials resulting from contaminants within the AOC.	<ul style="list-style-type: none"> No changes. 											
BUI 6:	Degradation of Benthos	I	I	I	I	Invertebrate community index (ICI) values do not significantly diverge from state biological criteria in designated segments or sub-watersheds of the AOC.; For lacustraries, ICI should not significantly diverge from guidelines shown in Appendix B.	In the riverine areas upstream from the lake affected waters (lacustrary or fresh water estuary), the average of the Invertebrate Community Index (ICI) values within the assessment unit do not significantly diverge from state biological criteria; AND In lake affected waters (lacustrary or fresh water estuary), the average of the L-ICI values do not diverge from state guidelines. (See Appendix B for additional information); AND (Maumee AOC only) In Maumee Bay, Hexagenia (burrowing mayflies nymphs) measured on a three year moving average (collected April to June) should range between 100 to 400 nymphs/m ² , with the ideal range between 200 and 300 nymphs/m ² .	<ul style="list-style-type: none"> Added <i>hexegenia</i> (mayflies) target for bays. Maumee Bay is the only Ohio AOC waters where this target applies. Mayflies were selected due to available data and current use in other Lake Erie assessments. Guidelines for averaging data were added. Assessment units are the 12-digit HU, Large River Assessment Unit (LRAU) or other agreed upon stream segment or sub-watershed. This BUI will not be evaluated for ICI in waters that are routinely dredged as it is unrealistic for a healthy benthos community to be restored under these conditions. 											

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Riverine ¹	30	42	18	4	NA																										
Lacustuary ²	NA	NA	NA	12	34																										
BUI 7:	Restrictions on Dredging Activities	I	I	I	I	There are no restrictions on navigational dredging or disposal activities due to contaminants in sediment.	There are no restrictions on navigational dredging or disposal activities due to contaminants in sediment, such that sediments are suitable for upland reuse/disposal, OR sediments meet Ohio EPA guidelines for open water disposal.	<ul style="list-style-type: none"> Target unchanged but clarification added for where BUI applies. Additional revisions describe the current and future policy for upland disposal. (to address comments received during internal review) Rationale now references DSW's 2010 guidance on evaluating sediment contaminant results and explains that OEPA is currently developing General Permits specifically for upland reuse and disposal. DSW consulted with DMWM about the status of the general permits and any interim targets were available and appropriate. Decided to wait until the GPs are final before consideration in the targets. Previous Appendix D was removed. Navigational dredging refers to dredging of a federally designated ship channel and historically dredged stretches of a river to enable the passage of commercial and/or recreational vessels. This does not include the maintenance dredging of private marinas, slips, docks, etc. However, if sediment contaminant concentrations in these areas are a source of contamination that precludes attainment of remedial dredging goals of federally designated ship channels and historically dredged stretches of a river, then dredging of private marinas, slips, docks, etc. may be necessary. Restrictions to disposal activities refer to the prohibition of open lake disposal or upland re-use of dredged materials due to chemical contamination or biological toxicity of the sediment. 																							
BUI 8:	Eutrophication or Undesirable Algae	NI	I	I	I	Waters meet the minimum D.O. criteria listed in the Ohio WQS.; AND No nuisance growths of algae, such as filamentous <i>Claudophora</i> , or blooms of blue green algae exist. There are no nuisance growths of aquatic weeds that may be hindering recreational use or contact with the water body.	This use will be considered restored when the follow conditions are met: <u>Riverine waters (upstream of lacustuary or fresh water estuary)</u> <ul style="list-style-type: none"> When the Trophic Index (a tool included in Ohio's Nutrient Reduction Strategy (Ohio EPA, 2013) demonstrates that conditions are not impaired as a result of excessive algal growth due to sources of nutrients; OR If the Trophic Index is not available, then no persistent nuisance growth of algae, such as filamentous <i>Cladophora</i>, or blooms of blue-green algae have been observed within the last three years due to 	<ul style="list-style-type: none"> Changes were needed to clarify target and rely on measurable data. Water quality problems due to nutrient loadings originating outside of the AOC will not be considered a BUI impairment and will be addressed by other programs as described in the rationale. The changes allow us to utilize Ohio's proposed nutrient criteria for the riverine waters. Water quality problems due to nutrient loadings originating 																							

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						<p>sources of nutrients from within the AOC.</p> <p><u>Lake affected waters (lacustrary or fresh water estuary)</u> When waters meet the minimum and the average dissolved oxygen criteria listed in the Ohio WQS, Chapter 3745-7 (See Appendix A for more information);</p> <table border="1"> <thead> <tr> <th colspan="3">Dissolved Oxygen Restoration Targets</th> </tr> <tr> <th>Total Dissolved Oxygen (mg/L)³</th> <th>OMZM¹</th> <th>OMZA¹</th> </tr> </thead> <tbody> <tr> <td>WWH</td> <td>4.0</td> <td>5.0</td> </tr> <tr> <td>EWH</td> <td>5.0</td> <td>6.0</td> </tr> <tr> <td>MWH</td> <td>3.0^b</td> <td>4.0</td> </tr> <tr> <td>LRW</td> <td>2.0</td> <td>3.0</td> </tr> <tr> <td>Federally Designated Shipping Channels</td> <td>1.5</td> <td>NA</td> </tr> </tbody> </table> <p>¹ OMZM = outside mixing zone minimum. ² OMZA = outside mixing zone average defined as the minimum twenty-four-hour average. ⁴ The dissolved oxygen minimum at any time criterion for modified warmwater habitats in the Huron/Erie Lake Plain ecoregion, as identified in rules 3745-1-08 to 3745-1-30 of the Administrative Code, is 2.5 mg/l.</p> <p>AND No persistent nuisance growth of algae, such as filamentous <i>Cladophora</i>, or blooms of blue-green algae have been observed within the last three years due to sources of nutrients from within the AOC.</p>	Dissolved Oxygen Restoration Targets			Total Dissolved Oxygen (mg/L) ³	OMZM ¹	OMZA ¹	WWH	4.0	5.0	EWH	5.0	6.0	MWH	3.0 ^b	4.0	LRW	2.0	3.0	Federally Designated Shipping Channels	1.5	NA	<p>outside of the AOC will not be considered a BUI impairment and will be addressed by other programs as described in the rationale.</p> <ul style="list-style-type: none"> Persistent algal growths are considered to be those that occurs frequently (annually, multiple times during the season) and that impact the public use of the river. If waters have more than one designated use (i.e., shipping channel and LRW or MWH) then the lowest target applies. Based on the Cuyahoga rule, we believe it is appropriate to utilize the Cuyahoga shipping channel dissolved oxygen criteria as the BUI restoration target for the federally designated shipping channels in the Black, Maumee and Ashtabula AOCs.
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LRW	2.0	3.0																										
Federally Designated Shipping Channels	1.5	NA																										
BUI 9:	Restrictions on Drinking Water Consumption or Taste & Odor Problems	NI	NI	NI	NI	<p>No consumption advisories or taste or odor complaints on the finished water, due to degradation of raw water quality caused by human activities within the AOC, for any community water system using "standard or conventional" treatment as drawing water from the AOC.</p>	<p>No chronic consumption advisories or taste or odor complaints in the finished water, due to degradation of raw water quality caused by contaminant sources or activities within the AOC, for any community water system using standard or conventional treatment and drawing water from within the AOC.</p>	<ul style="list-style-type: none"> Minor changes needed to update targets with current Public Drinking Water Supply beneficial use assessment methodology. The section was also simplified. Chronic taste and/or odor complaints have been documented by the water system operator and are due to human activities within the AOC and not the result of treatment processes (e.g., chlorination). 																				
BUI 10:	Beach Closings (Recreational Contact)	NI	I	I	I	<p>For bathing waters (primarily Lake Erie beaches), no more than 10 posted advisory days, due to high bacteria levels, per year for five consecutive years; OR For primary contact recreation, for stream segments designated as such in the Ohio WQS, the 75th percentile of all samples collected in one year does not exceed 1000 per 100 ml fecal coliform or the 90th percentile does not exceed 2000 per 100ml fecal coliform. or For E.coli, the 75th percentile does not exceed 126 per 100ml or the 90th percentile does not exceed 298 per 100ml. This standard must be met for five consecutive years; OR For secondary contact recreation, for streams designated as such in the Ohio WQS, the 90th percentile of samples collected over a five year period does not exceed 5000 per 100ml fecal</p>	<p>This beneficial use shall be considered restored when the following conditions are met for public bathing beaches, Class A waters and chemical contaminant contact advisories:</p> <p>Public Bathing Beaches: This BUI will be considered restored when posted advisory days due to bacterial contamination (<i>E. coli</i>) do not exceed 10 percent (or 19 days) of the recreation season; AND posted advisory days due to algal toxins do not exceed 10 percent (or 19 days) of the recreation season. This target must be met in 3 out of the most recent 5 years; OR</p> <p>In cases where public bathing beaches within the AOC have posted advisory days for either bacterial contamination (<i>E. coli</i>) or algal toxins that exceed 10 percent of the recreation season and CSOs are the primary cause, the BUI will be considered restored when the bacterial impacts from CSOs are being addressed under an approved long term control plan or other legally-binding document.</p> <p>Primary Contact Recreation (Class A): No Class A waterbodies within the AOC are included on Ohio's most recent 303(d) list of impaired waters due to bacterial contamination (<i>E. coli</i>) OR</p>	<ul style="list-style-type: none"> Changes needed as current targets unattainable in most Ohio AOCs and not in line with the AOC objectives. The goal of new restoration targets is to focus restoration efforts on impaired beaches and Class A waters. It is outside of the AOC program to address CSO, non-point and HSTS issues. Ohio has other programs better positioned to address these sources. Considered newly approved federal bacteria standards but they did not provide a more reasonable target and may even be more stringent in some cases. Revision to limit <u>where</u> this use will apply: Public Bathing Beaches and Class A waters only. Class B and C will be excluded in future assessments. For some AOCs, this is not much of a change from the previous target, however for the Maumee and other AOCs, this will focus assessments on those waters most used and promoted for recreation use. A review of current IR impaired listings for recreational use indicates that this is a statewide problem and many of the sources and solutions will require large scale efforts. 																				

Beneficial Use Impairment		Ashtabula	Black	Cuyahoga	Maumee	2008 BUI Restoration Target	2014 BUI Proposed Restoration Target	Comments
						<p>coliform or 576 per 100ml E. coli; AND No local or state contact advisories related to the presence of a chemical contaminant exist.</p>	<p>If Class A waterbodies within the AOC are on the list of non-attaining waters because of bacterial contamination (<i>E. coli</i>) due to the presence of Combined Sewer Overflows (CSOs) this BUI will be considered restored when the bacterial impacts from CSOs are being addressed under an approved long term control plan or other legally-binding document; AND</p> <p>If Class A waterbodies within the AOC are on the list of non-attaining waters because of bacterial contamination (<i>E. coli</i>) due to the presence of non-point source pollution, this BUI will be considered restored when a TMDL is approved and the State and RAP can document that the level of bacterial contamination is not significantly worse than similar watersheds.</p> <p>Chemical Contaminant (all waters): No local or state contact advisories related to the presence of a chemical contaminant exist.</p>	<ul style="list-style-type: none"> We attempted to design targets that identify sources of contamination <u>within the AOCs</u> that represent <u>extraordinary problems</u> that can be addressed through <u>implementation at the local level</u>. New targets provide option to remove BUI if Class A waters are still on the 303(d) list, CSO has been addressed with a LTCP and a TMDL is in place to address the remaining sources. RAPs would still have to document that their bacterial problem is not significantly worse than similar watersheds . Adding algal toxin-related advisories at beaches. Target based on advisory days and <u>not</u> algal toxin levels or cyanobacteria cell counts.
BUI 11:	Degradation of Aesthetics	NI	I	I	I	<p>The general surface water quality shall meet the criteria outlined in Ohio Administrative Code Section 3745-1-04 to the extent practical and possible. This section is summarized as: (A) Free from suspended solids or other substances that enter the waters as a result of human activity and that will settle to form putrescent or otherwise objectionable sludge deposits, or that will adversely affect aquatic life; (B) Free from floating debris, oil, scum and other floating materials entering the waters as a result of human activity in amounts sufficient to be unsightly or cause degradation; (C) Free from materials entering the waters as a result of human activity producing color, odor or other conditions in such a degree as to create a nuisance; (E) Free from nutrients entering the waters as a result of human activity in concentrations that create nuisance growths of aquatic weeds and algae;* (F) Free from public health nuisances associated with raw or poorly treated sewage.</p>	<p>There are no observed ongoing occurrences of sludge deposits, oil sheens, scum and other objectionable materials; specifically materials that produce color, odor, or other nuisances. OR</p> <p>If Combined Sewer Overflows (CSOs) are a significant cause of aesthetic impairments and the CSOs are being addressed under an approved long term control plan or other legally-binding document, this BUI may be considered restored. Where long-term remedies may take several years to be fully implemented, it may be necessary to develop short-term control strategies. AND</p> <p>If Municipal Separate Storm Sewer Systems (MS4s) are a significant cause of aesthetic impairments and the MS4 is regulated under an NPDES Permit or other legally-binding document, this BUI may be considered restored.</p>	<ul style="list-style-type: none"> Target revisions were designed to focus the BUI on impairments not covered by other BUIs. Aesthetic impairments due to algae or excessive nutrient loading will be addressed under BUI 8. Natural physical features (e.g., woody debris, logjams, rootwads) and excessive turbidity following storm events or due to agricultural activities are not considered an impairment under this BUI.
BUI 12:	Added Costs to Agriculture or Industry	NI	NI	NI	I	<p>No additional costs (due to human activities within the AOC) are necessary to treat water from the AOC prior to agricultural, commercial or industrial use.</p>	<p>No additional costs (due to human activities within the AOC) are necessary to treat water from the AOC prior to agricultural, commercial or industrial use.</p>	<ul style="list-style-type: none"> No changes to targets.
BUI 13:	Degradation of Phyto and Zooplankton Populations	N A	N A	N A	N A	<p>No current targets. Ohio EPA considers this BUI to be related to bays or lakes rather than streams and considers it not applicable to Ohio AOCs.</p>	<p>Ohio EPA considers this BUI to be related to bays or lakes rather than streams; thus it applies only to Maumee Bay in the Maumee AOC and is not applicable to other Ohio AOCs. This use will be considered restored for Maumee Bay when BUI 3 is not impaired for fish populations.</p>	<ul style="list-style-type: none"> Aesthetic impairments due to algae or excessive nutrient loading are addressed under BUI 8. We currently do not have a good metric for plankton so the target uses attainment of BUI 3 as a surrogate measure. Ohio EPA's Lake Erie monitoring and ODNR fish community, data

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BUI 14: Loss of Fish Habitat	I	I	I	I	<p>For mainstem and tributaries, habitat quality shall average a QHEI score of 60 or better throughout the free-flowing stream stretches of the AOC; For nearshore, harbor or lacustrine areas, Lake Erie QHEI results do not indicate an impairment, and Ohio Aquatic Life Water Quality Standards are met; OR Fish and Wildlife officials do not identify loss of or poor quality habitat as cause for non-attainment with fishery goals.</p>	<p>This beneficial use will be considered restored when the following conditions are met:</p> <p>For Fish (aquatic habitat): In the riverine areas upstream from the lake affected waters (lacustrine or fresh water estuary), the average Qualitative Habitat Evaluation Index (QHEI) value within an assessment unit do not diverge from state biological guidelines. OR In lake affected waters (lacustrine or fresh water estuary), the average Lake Qualitative Habitat Evaluation Index (L-QHEI) value does not diverge from state biological guidelines (See Appendix B for additional detail information and lacustrine locations in each AOC).</p> <table border="1" data-bbox="1112 735 2262 876"> <thead> <tr> <th rowspan="2">Index Type – Site Type</th> <th colspan="5">Qualitative Habitat Evaluation Index (QHEI) Restoration Targets</th> </tr> <tr> <th>WWH</th> <th>EWH</th> <th>MWH¹</th> <th>LRW²</th> <th>Lacustrine</th> </tr> </thead> <tbody> <tr> <td>Riverine</td> <td>60</td> <td>75</td> <td>50</td> <td>NA</td> <td>NA</td> </tr> <tr> <td>Lacustrine³</td> <td>NA</td> <td>NA</td> <td>NA</td> <td>NA</td> <td>55</td> </tr> </tbody> </table> <p>¹ For MWH waters, a QHEI score of ≥ 50 is considered an acceptable target based on relationships observed between fish community health and habitat. If MWH waters cannot attain the QHEI target due to degradation or physical modifications that cannot be reasonable and cost effectively rectified, then these waters should not preclude the BUI from being removed in the AOC. ² For LRW waters, a QHEI evaluation is not applicable. LRW designations are waters that have been found to lack the potential for any resemblance of any other aquatic life habitat as determined by the biological criteria through a use attainability analysis such that the extant fauna is substantially degraded and that the potential for recovery of the fauna to the level characteristic of any other aquatic life habitat is realistically precluded due to natural background conditions or irretrievable human-induced conditions. ³ For the Lake Erie shoreline and lacustrine areas, a L-QHEI ≥ 55 is considered an acceptable target (Thoma, 2006 and personal communication with Roger Thoma, 2013).</p>	Index Type – Site Type	Qualitative Habitat Evaluation Index (QHEI) Restoration Targets					WWH	EWH	MWH ¹	LRW ²	Lacustrine	Riverine	60	75	50	NA	NA	Lacustrine ³	NA	NA	NA	NA	55	<p>can be utilized to evaluate this BUI.</p> <ul style="list-style-type: none"> No changes currently proposed. TNC provided recommendations are part of NOAA project and confirmed that our current targets are sound. Guidelines for averaging data were added. Added clarity on specific targets for modified warmwater, limited resource and lacustrine waters.
Index Type – Site Type	Qualitative Habitat Evaluation Index (QHEI) Restoration Targets																													
	WWH	EWH	MWH ¹	LRW ²	Lacustrine																									
Riverine	60	75	50	NA	NA																									
Lacustrine ³	NA	NA	NA	NA	55																									
Loss of Wildlife Habitat	NI	I	NI	I	<p>Forested buffers exist on 50% of residential tributaries and 25% of urban tributaries; and For headwater streams, HHEI habitat quality shall average a score of 30 for warm water streams and 70 for cold water streams; OR For headwater streams and wetlands, State Aquatic Life Water Quality Standards are met; OR Wildlife officials do not identify loss of or poor quality habitat as cause for non-attainment with wildlife goals.</p>	<p>For Wildlife (terrestrial and wetland habitat): If the AOC is not impaired for the Wildlife Populations component of BUI 3 then it will be considered “not impaired” for the Wildlife Habitat component of BUI 14. OR If the AOC is impaired for Wildlife Populations component of BUI 3 and insufficient or poor quality habitat is identified as the cause, then the following targets applies:</p> <ul style="list-style-type: none"> At least 10% terrestrial habitat land cover (NLCD classes: forest, shrubland, and herbaceous upland) At least 2% wetland habitat land cover (NLCD classes: woody and emergent wetlands) 	<ul style="list-style-type: none"> The team agrees that changes needed as the current target is unattainable in Ohio AOC watersheds and we should not require removal and replacement of existing strip malls with forest. Previous targets were based on Canadian targets. TNC provided recommendations are part of NOAA project although none of the suggestions were deemed viable for Ohio by the team. Added condition that Wildlife Habitat should not be listed as impaired if the Wildlife Population portion of BUI 3 was not listed. This will result the wildlife portion of BUI 14 being removed for the Black River AOC and only Maumee remaining with wildlife habitat impairment. The rationale in the BUI restoration target provides background data on how the land cover #s were derived. Land Cover recommendations were based on assessment of Western Basin HUC-8 watersheds. Assessment units for the fish habitat are the 12-digit HU, Large 																							

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								<p>River Assessment Unit (LRAU) or other agreed upon stream segment or sub-watershed. For the wildlife habitat, the AOC should be evaluated as a whole.</p> <ul style="list-style-type: none"> Local RAPs will need to develop Fish and Wildlife Habitat Restoration Plans to recommend the type and location of restoration that needs to be done to remove this BUI. The plan needs to be approved by Ohio EPA.

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