

DRAFT - Handout # 3  
**Assigning Parameters to Water Quality Categories and Management Strategies  
for the Texas Water Quality Inventory and 303d List**

September 10, 2004

TCEQ evaluates attainment of each designated use assigned to a water body by assessing data for individual pollutants or conditions (called “parameters”) against the criterion associated with each use. The parameter is then assigned to a category that defines the follow-up management strategy. If the standard is not attained (i.e., the use is impaired), the parameter is assigned to one of the subcategories of either Category 4 or Category 5, as described in this table.

<b><i>CATEGORY 4</i></b>			
Use is not supported or is threatened, but does not require a TMDL.			
Decision Criteria	Example Parameters	Strategy	Follow-up Decision Criteria [Most common outcomes noted in <b>BOLD</b> ]
4a Parameters are placed in this category after a TMDL for the pollutant or condition causing nonsupport has been developed and is approved by EPA	North Bosque TMDL for phosphorus	<ul style="list-style-type: none"> <li>• TCEQ develops an implementation plan (IP) to reduce pollutant load</li> <li>• TMDL program tracks progress toward standards attainment</li> <li>• If control measures do not lead to attainment of the standard in the time frame set out in the IP, revisit the TMDL and/or the IP</li> <li>• TCEQ or other agencies continue routine monitoring and additional monitoring as described in the IP</li> </ul>	<b>If standard is attained → Category 1</b>

**CATEGORY 4**

Use is not supported or is threatened, but does not require a TMDL.

Decision Criteria	Example Parameters	Strategy	Follow-up Decision Criteria [Most common outcomes noted in <b>BOLD</b> ]
4b Parameters are placed in this category when other pollutant controls (i.e. other than a TMDL) are expected to result in attainment of the standard in a reasonable time frame	<ul style="list-style-type: none"><li>• Lakes for which the drinking water use is “threatened” due to atrazine where BMPs are being implemented</li><li>• Water bodies impaired by legacy pollutants where remediation under a superfund project is projected to result in standards attainment</li><li>• Water bodies where current enforcement action or permitting action by TCEQ will result in attainment of the standard</li></ul>	<ul style="list-style-type: none"><li>• TCEQ will not permit additional loading that will cause or contribute to the impairment</li><li>• Local, state, or federal authorities plan or implement controls that are expected to result in standards attainment</li><li>• TMDL program tracks progress towards standards attainment</li><li>• TCEQ or other agencies continue routine monitoring</li></ul>	<p><b>If standard is attained → Category 1</b></p> <p>If controls have been unsuccessful and standard is not being attained, then:</p> <ul style="list-style-type: none"><li>→ Category 5a if new data or information indicate that a TMDL is appropriate</li><li>→ Category 5b if new data or information indicate the standard needs to be reviewed</li><li>→ Category 4c if new data or information indicate impairment is attributable to pollution</li></ul>

**CATEGORY 4**

Use is not supported or is threatened, but does not require a TMDL.

Decision Criteria	Example Parameters	Strategy	Follow-up Decision Criteria [Most common outcomes noted in <b>BOLD</b> ]
4c Parameters are placed in this category if nonsupport or threat is not caused by a pollutant	<ul style="list-style-type: none"><li>• Temperature where exceedance not caused by thermal discharge</li><li>• Low DO caused by bottom water discharge from dam</li><li>• Biological community impaired, but impairment is not caused by a pollutant</li></ul>	<ul style="list-style-type: none"><li>• TCEQ will not permit additional loading that will cause or contribute to the impairment</li><li>• TCEQ or other agencies may develop a plan that includes the following, as appropriate (1) regulatory and/or non-regulatory actions to restore attainable uses of the water body, and (2) monitoring to confirm there is no pollutant-caused nonsupport of standards and to document effectiveness of actions.</li><li>• TCEQ or other agencies continue routine monitoring.</li></ul>	<p><b>If standard is attained → Category 1</b></p> <p>If new data or information indicate that the use is impaired due to significant pollutant loading → Category 5a to address the pollutant-caused portion of impairment</p> <p>If standard cannot be attained, remains in Category 4c</p>

<b>CATEGORY 5</b> Use is not supported or is threatened			
Decision Criteria	Example Parameters	Strategy	Follow-up Decision Criteria [Most common outcomes noted in <b>BOLD</b> ]
5a Parameters are placed in this category if a pollutant has caused, or threatens to cause, the nonsupport of a designated use, AND the impairment does not meet criteria for inclusion in Categories 4a, 4b, 5b, or 5c	<ul style="list-style-type: none"> <li>• Toxicity caused by identified pollutant</li> <li>• DO not meeting 24-hr average (based on 24-hour sampling), or not meeting minimum (based on instantaneous measure) AND caused by pollutant load.</li> <li>• Bacteria for contact recreation:               <ol style="list-style-type: none"> <li>1) with 10 or more samples and a geometric mean &gt; 2000 cfu for fecal coliform, 1260 for E. coli, or 350 for Enterococcus, OR</li> <li>2) with 18 or more samples and a geometric mean &gt; 126 for E.coli, or 35 for Enterococcus, and significant contact recreation occurs, OR</li> <li>3) for water bodies not supporting the contact recreation use, but with a geometric mean &lt; the values listed above in (1) and connected to an impaired water body (e.g. a tributary), or in watersheds adjacent to an impaired water body</li> </ol> </li> <li>• Impaired fish community, benthos or habitat where impairment is caused by a pollutant</li> <li>• Temperature impairment caused by a discharge</li> </ul>	<ul style="list-style-type: none"> <li>• TCEQ schedules a TMDL based on a priority ranking and develops a TMDL for each pollutant</li> <li>• TCEQ will not permit additional loading that will cause or contribute to the impairment</li> <li>• In some cases, new data and information gathered for the TMDL may lead to another strategy prior to completion of the TMDL</li> <li>• TCEQ or other agencies continue routine monitoring</li> </ul>	<p><b>If TMDL is completed and approved → Category 4a.</b></p> <p>New data and information may show that impairment is caused by seasonal variation in conditions, other natural forces (i.e. drought, hurricane), or from irremediable human changes (i.e. ship channel, dam) or that impairment cannot be corrected with a pollutant load allocation.</p> <p>→ Category 4b</p> <ul style="list-style-type: none"> <li>• if impairment is more appropriately addressed by another program</li> <li>• if the Implementation Plan for a TMDL for a different parameter for the same water body will also control this impairment</li> </ul> <p>→ Category 4c if impairment is attributed to pollution</p> <p>→ Category 5b if standard should be reviewed</p>

<b>CATEGORY 5</b>			
Use is not supported or is threatened			
Decision Criteria	Example Parameters	Strategy	Follow-up Decision Criteria [Most common outcomes noted in <b>BOLD</b> ]
5b Parameters are placed in this category if the designated use or a water quality criterion should be reviewed	<ul style="list-style-type: none"> <li>• TDS, chloride, sulfate where current or historical data set indicate criteria should be reviewed</li> <li>• DO, where (1) criteria is not supported but biological community is healthy; OR (2) modeling shows that DO criteria cannot be met under natural conditions; OR (3) data collected for a pending permit prompts a review of the standard.</li> <li>• Biological community is impaired based on presumed or designated use, where information indicates that to be an inappropriate use designation</li> </ul>	<ul style="list-style-type: none"> <li>• TCEQ will not permit additional loading that will cause or contribute to the impairment</li> <li>• TCEQ sets priorities for these impairments then initiates a use attainability analysis (UAA). If appropriate, a new standard (designated use and/or site-specific criterion) will be proposed to EPA</li> <li>• TCEQ or other agencies continue routine monitoring</li> </ul>	<p>If standard revision is proposed by TCEQ, impairment remains in Category 5b until EPA action</p> <p><b>If revision of the standard is not proposed by TCEQ, or if TCEQ proposes a change that EPA disapproves:</b></p> <ul style="list-style-type: none"> <li>→ Category 4b if another control program is planned or in progress</li> <li>→ Category 4c if impairment caused by pollution</li> <li>→ <b>Category 5a if impairment continues and pollutant is identified</b></li> </ul> <p>If EPA approves revised standard</p> <ul style="list-style-type: none"> <li>→ Category 1 if revised standard is attained</li> <li>→ Category 5a if impairment continues and pollutant is identified</li> </ul>

<b>CATEGORY 5</b> Use is not supported or is threatened			
Decision Criteria	Example Parameters	Strategy	Follow-up Decision Criteria [Most common outcomes noted in <b>BOLD</b> ]
<p>5c Parameters are placed in this category if</p> <p>1) there is insufficient information to determine the best strategy for restoring the use</p> <p>OR</p> <p>2) verification of the impairment is needed. This is currently the case <b>ONLY</b> for listings for DO based on instantaneous measurements and requiring 24-hour measurements.</p> <p><b>Impairment verification will become more rare for Category 5c.</b></p>	<ul style="list-style-type: none"> <li>• Metals, where better analytical methods (e.g., ultra-clean sampling) are needed to define the impairment</li> <li>• Mercury, where atmospheric deposition is most significant source</li> <li>• Toxicity, where pollutant causing the toxicity has not been identified</li> <li>• Bacteria for water bodies where geometric mean &lt; 2000 cfu for fecal coliform, 1260 for E. coli, 350 for Enterococcus; AND there is insufficient data to schedule a TMDL</li> <li>• Narrative criteria where TMDL endpoint needs to be developed</li> <li>• pH where pollutant is not known</li> <li>• Impaired fish community, benthic community or habitat, where pollutant is not known</li> <li>• Temperature, where thermal discharges may contribute to criteria nonattainment and additional information is needed to determine if a TMDL is the appropriate strategy</li> </ul> <p>No new 5c listings, but some historical listings:</p> <ul style="list-style-type: none"> <li>• DO, where grab samples are not meeting the average</li> </ul>	<p>TCEQ will not permit additional loading that will cause or contribute to the impairment</p> <p>TCEQ or other agencies carry out parameter/area-specific study:</p> <ul style="list-style-type: none"> <li>• Metals: resample using better methods</li> <li>• Mercury: develop TMDL tools</li> <li>• Toxicity: gather lines of evidence to explain toxicity and identify pollutant</li> <li>• DO: collect 24 hour data</li> <li>• Bacteria: Collect E.coli to identify potential sources and fill in data gaps to meet data requirements</li> <li>• pH, narrative criteria, or biological impairments: identify pollutant</li> <li>• Temperature: Collect data or information to demonstrate use impairment is persistent, controllable and human-caused</li> </ul> <p>TCEQ or other agencies continue routine monitoring.</p>	<p>→ Category 1 if standard is attained</p> <p>→ Category 4b if another program begins cleanup before pollutant is identified</p> <p>→ Category 4c, if there is no significant pollutant loading, and cause is human-made, e.g. dams or ship channels</p> <p>→ <b>Category 5a</b></p> <ul style="list-style-type: none"> <li>• <b>If pollutant is identified</b></li> <li>• <b>For mercury</b>, when TMDL tools are developed</li> <li>• <b>For DO</b>, if 24-hour monitoring shows average or minimum criterion is not met and impairment due to pollutant loading of human origin</li> <li>• <b>For bacteria</b>, if human or domesticated animal sources predominate, and data meets criteria in 5a example</li> </ul> <p>→ <b>Category 5b</b>, if additional data or information indicates that site-specific standard should be reviewed</p> <p>If a standards issue is not site-specific, parameter remains in 5c and TCEQ will collect data and information in order to improve standards and assessment methodology</p>