

Utah Antidegradation Review Implementation Guidance

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1 **1.0 INTRODUCTION**

2 The central goals of the Clean Water Act and the Utah Water Quality Act are to
3 protect, maintain, and restore the quality of Utah’s waters. One way in which this is
4 accomplished is through Utah’s water quality standards, which consist of: 1) designated
5 uses (e.g., aquatic life, drinking water, recreation), 2) water quality criteria (both
6 numeric and narrative), and 3) antidegradation policy and procedures. The intent of the
7 antidegradation component of our standards is to protect existing uses and to maintain
8 high quality waters. Our water quality criteria create a floor below which uses become
9 impaired, whereas our antidegradation policy protects water quality in waters where
10 the quality is already better than the criteria.

11 Utah’s antidegradation policy (UAC R317-2-3) does not prohibit degradation of water
12 quality, unless the Water Quality Board has previously considered the water to be of
13 exceptional recreational or ecological significance (Category 1 or Category 2 waters).
14 Instead the policy creates a series of rules that together ensure that when degradation
15 of water quality is necessary for social and economic development, every feasible option
16 to minimize degradation is explored. Also, the policy requires that alternative
17 management options and the environmental and socioeconomic benefits of proposed
18 projects are made available to concerned stakeholders.

19 This document provides the implementation procedures for Utah’s antidegradation
20 rules. Utah’s Division of Water Quality (hereafter DWQ) is required by Federal Code (40
21 CFR §131.12(a)) to develop an antidegradation policy and implementation procedures.
22 These procedures and associated rules (UAC R317-2-3) meet these requirements. The
23 implementation procedures discussed in this document were developed in a
24 collaborative process among stakeholders to identify procedures that would meet the
25 intent of antidegradation rules, while avoiding unnecessary regulatory burdens.

26 This first draft of implementation procedures focuses on Utah Pollution Discharge
27 Elimination System (UPDES) permits except for general permits. General permits must
28 meet ADR requirements and implementation procedures for general permits will be
29 forthcoming in future drafts of this guidance. Section 7.0 summarizes the portions of
30 the guidance that are incomplete. The absence of guidance for these topics does not
31 negate or delay the requirements for antidegradation reviews required under UAC
32 R317-2-3.

33 **2.0 THE ANTIDEGRADATION PROCESS**

34 Antidegradation reviews (ADRs) are required, as part of the permitting process, for
35 any action that has the potential to degrade water quality. Activities subject to ADRs
36 include any activities that require a permit or water quality certification pursuant to
37 federal law. The ADR process involves: 1) classification of surface waters into protection
38 categories, and 2) documenting that activities likely to degrade water quality are
39 necessary and that all State and Federal procedures have been followed to ensure that
40 reasonable steps are taken to minimize degradation.

41 The overarching goal of ADRs is summarized in rule R317.2.3.1 as follows:

42 *“Waters whose existing quality is better than the established standards for the designated*
43 *uses will be maintained at high quality unless it is determined by the Board, after*
44 *appropriate intergovernmental coordination and public participation in concert with the*
45 *Utah continuing planning process, allowing lower water quality is necessary to*
46 *accommodate important economic or social development in the area in which the waters are*
47 *located. However, existing instream water uses shall be maintained and protected. No water*
48 *quality degradation is allowable which would interfere with or become injurious to existing*
49 *instream water uses.”*

50 **2.1 Assigning Protection Categories**

51 Utah’s surface waters are assigned to one of three protection categories that
52 prescribe generally permissible water quality actions. These levels of protection are
53 determined by their existing biological, chemical and physical integrity, and by the
54 interest of stakeholders in protecting current conditions. Antidegradation procedures
55 are differentially applied to each of these protection categories on a parameter-by-
56 parameter basis.

57 **2.1.1 Category 1 Waters**

58 Category 1 waters (as listed in R317-2-12.1) are afforded the highest level of
59 protection from activities that are likely to degrade water quality. This category is
60 reserved for waters of exceptional recreation or ecological significance, or that have
61 other qualities that warrant exceptional protection. Once a waterbody is assigned
62 Category 1 protection, future discharges of wastewater into these waters are not
63 permitted. However, permits may be granted for other activities (e.g., road
64 construction, dam maintenance) if it can be shown that water quality effects will be
65 temporary and that all appropriate Best Management Practices (BMPs) have been
66 implemented to minimize degradation of these waters.

67 **2.1.2 Category 2 Waters**

68 Category 2 waters (as listed in R317-2-12.2) are also afforded a high level of
69 protection, but discharges to these waters are permissible, provided no degradation of
70 water quality will occur or where pollution will result only during the actual construction
71 activity, and where best management practices will be employed to minimize pollution
72 effects. In practice, this means that all wastewater parameters should be at or below
73 background concentrations of the receiving water for activities that are not temporary
74 and limited. As a result of this stipulation, the Level I and Level II ADR provisions
75 discussed in these implementation procedures are not required for Category 2 waters.

76 **2.1.3 Category 3 Waters**

77 All surface waters of the State are Category 3 waters unless otherwise designated as
78 Category 1 or 2 in UAC R317-2-12. Discharges that degrade water quality are permitted
79 for Category 3 waters provided that 1) existing uses are protected, 2) the degradation is

80 necessary, 3) the activity supports important social or economic development in the
81 area where the waters are located, and 4) all statutory and regulatory requirements are
82 met in the area of the discharge. Antidegradation rules also apply for any proposed new
83 or expanded discharge that is likely to degrade water quality. ADRs require that these
84 proposed actions demonstrate that such proposed projects are necessary to
85 accommodate social and economic development, and that all reasonable alternatives to
86 minimize degradation of water quality have been explored. These implementation
87 procedures provide details about how ADRs are implemented to meet these
88 requirements.

89 **2.2 Procedures for Assigning Protection Categories**

90 The intent of Category 1 and Category 2 protection classes is to protect high quality
91 waters. Any person or DWQ may nominate a surface water to be afforded Category 1 or
92 2 protections by submitting a request to the Executive Secretary of the Water Quality
93 Board. DWQ generally considers nominations during the triennial review of surface
94 water quality standards. The nominating party has the burden of establishing the basis
95 for reclassification of surface waters, although DWQ may assist, where feasible, with
96 data collection and compilation activities.

97 *2.2.1 Material to Include with a Nomination*

98 The nomination may include a map and description of the surface water; a statement
99 in support of the nomination, including specific reference to the applicable criteria for
100 unique water classification, and available, relevant and recent water quality or biological
101 data. All data should meet the minimum quality assurance requirements used by DWQ
102 for assessing waters of the State. A description of these requirements can be found in
103 the most recent *Integrated Report Part 1 Water Quality Assessment*.

104 *2.2.2 Considerations for Appropriate Data and Information to Include with* 105 *Nominations to Increase Protection of Surface Waters*

106 The Water Quality Board may reclassify a waterbody to a more protected category,
107 following appropriate public comment. Evidence provided to substantiate any of the
108 following justifications that a waterbody warrants greater protection may be used to
109 evaluate the request:

- 110 • The location of the surface water with respect to protections already afforded to
111 waters (e.g. on federal lands such as national parks or national wildlife refuges).
- 112 • The ecological value of the surface water (e.g., biological diversity, or the
113 presence of threatened, endangered, or endemic species)
- 114 • Water quality superior to other similar waters in surrounding locales.
- 115 • The surface water is of exceptional recreational or ecological significance
116 because of its unique attributes (e.g., Blue Ribbon Fishery)
- 117 • The surface water is highly aesthetic or important for recreation and tourism.

- 118 • The surface water has significant archeological, cultural, or scientific importance.
119 • The surface water provides a special educational opportunity.
120 • Any other factors the Executive Secretary considers relevant as demonstrating
121 the surface water's value as a resource.

122 The final reclassification decision will be based on all relevant information submitted
123 to or developed by DWQ.

124 2.2.3 *Considerations for Appropriate Data and Information for Consideration to* 125 *Decrease Protection of Surface Waters*

126 The intent of Category 1 and Category 2 protections is to prevent future degradation
127 of water quality. As a result, downgrades to surface water protection categories are
128 rare. However, exceptional circumstances may exist where downgrades may be
129 permitted to accommodate a particular project. For instance, in Utah most surface
130 waters in the upper portions of National Forests are afforded Category 1 protection,
131 which may not be appropriate in specific circumstances. Project proponents may
132 request a classification with lower protection; however, it is their responsibility to
133 provide sufficient justification. Examples of situations where a reclassification with less
134 stringent protections might be appropriate follow:

- 135 • Failure to complete the project will result in significant and widespread
136 economic harm.
137 • Situations where the surface water was improperly classified as a Category 1 or
138 Category 2 water because the surface water is not a high quality water (as
139 defined by the criteria outlined in 2.2.2).
140 • Water quality is more threatened by not permitting a discharge (e.g., septic
141 systems vs. centralized water treatment).

142 Requests for downgrades to protection should provide the most complete and
143 comprehensive rationale that is feasible. The request for a reduction in protection may
144 also be considered in concert with the alternatives evaluated through an accompanying
145 Level II ADR. Proposed projects affecting high quality waters may require more
146 comprehensive analysis than projects affecting lower quality waters.

147 2.2.4 *Public Comment Process for Proposed Reclassifications*

148 All data and information submitted in support of reclassification will be made part of
149 the public record. In addition to public comment, the DWQ will hold at least one public
150 meeting in the area near the nominated water. If the issues related to reclassification
151 are regional or statewide in nature or of broader public interest, the Division will
152 consider requests for public meetings in other locations. Comments received during this
153 meeting will be compiled and considered along with the information submitted with the
154 nomination.

155 *2.2.5 Reclassification Decision Making Process*

156 The final reclassification decision will be based on all relevant information submitted
157 to or developed by the DWQ. All data will be presented and discussed with the Water
158 Quality Standards Workgroup. DWQ then submits its recommendations regarding
159 reclassifications to the Water Quality Board who makes a formal decision about
160 whether to proceed with rulemaking to reclassify the waterbody. The proposed
161 reclassification is a rule change, and as such will trigger public notice and comment
162 procedures.

163 **3.0 ANTIDegradation Review General Procedures**

164 **3.1 Overview of Antidegradation Review Procedures**

165 ADR reviews for Category 3 waters are conducted at two levels, which are referenced
166 in R317-2-3 as Level I and Level II reviews. Figure 1 provides an overview of the overall
167 ADR process.

168 Level I reviews are intended to ensure that proposed actions will not impair “existing
169 uses”. Level II ADRs assure that degradation is necessary and that the proposed activity
170 is economically and socially important. Level II ADRs are required for any activity that is
171 not temporary and limited in nature and is likely to result in degradation of water
172 quality. The central tenet of these reviews is to ensure that the discharge is necessary,
173 water quality standards will not be violated, and that alternatives to minimize
174 degradation are considered.

175 **3.2 Level I Antidegradation Reviews**

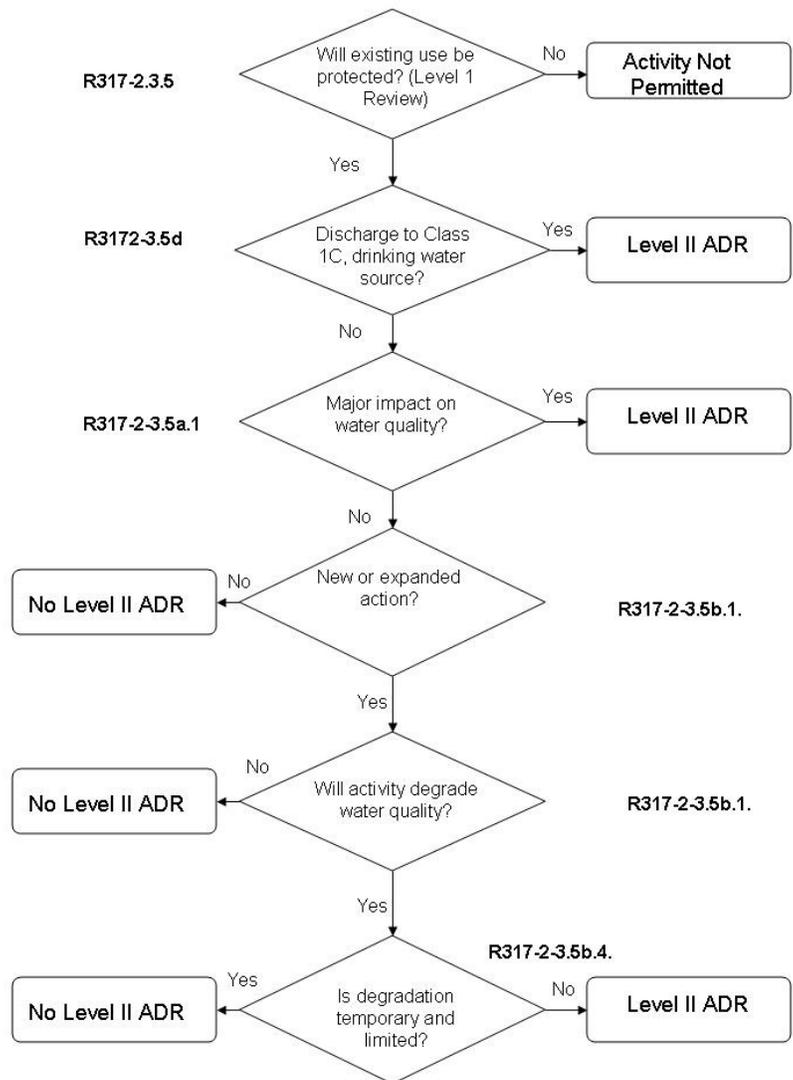
176 Level I reviews are intended to ensure that proposed actions will not impair “existing
177 uses”. Existing uses means those uses actually attained in a water body on or after
178 November 28, 1975 (UAC R317-1), whether or not they are included in the water quality
179 standards. For instance, if a stream currently only contains warm water fish species,
180 whereas it supported a trout fishery at some point after 1975, the “existing use” criteria
181 would be those for Class 3a (cold water fish and organisms in their necessary food
182 chain).

183 Neither State nor federal regulations permit impairment of an existing instream use,
184 and the Level I review simply asks whether there are existing uses with protection
185 requirements that are more stringent than the currently designated uses (R317-2-13).
186 DWQ is currently unaware of any discrepancies between the existing uses and the
187 designated beneficial use classes in R317-2-6.

188 Water quality permits will not be issued if the proposed project will impair existing
189 uses.

190 DWQ staff conduct Level I reviews as the first step in any permitting action by
191 comparing the concentration predicted by the waste load analyses after mixing to the
192 water criterion for the designated uses (R317-2-13) and more restrictive existing uses.
193 The permit applicant is responsible for submitting adequate data for DWQ to conduct
194 the Level I ADR. More information and permit applications are available at
195 http://www.waterquality.utah.gov/UPDES/updes_f.htm .

196



197 •
 198 Figure 1. The general process for determining whether a Level II ADR is required for DWQ
 199 UPDES permit. Expanded actions are increases in loads or concentrations (Section 3.3.1).
 200 Special considerations for other permits are discussed in Section 3.6.

201

202 **3.3 Level II Antidegradation Reviews**

203 A Level II ADR is required if the receiving water is designated with a 1C Drinking Water
204 Source Use or the Executive Secretary determines that the discharge may have a major
205 impact on water quality. Otherwise, all of the following conditions must apply before a
206 Level II ADR is required for a proposed activity: 1) it must be a new or expanded action,
207 2) it must be an action that is regulated by the DWQ, and 3) the action must have a
208 reasonable likelihood of degrading water quality. Additional details for each of the
209 preceding requirements are provided below.

210 *3.3.1 Activities that are Considered to be New or Expanded Actions*

211 New actions refer to facilities that are being proposed for construction, or actions that
212 are initiated for the first time. Expanded refers to a change in permitted or design
213 concentration or flow and corresponding pollutant loading. Examples of expanded
214 actions include:

- 215 • An increase in permitted concentrations;
- 216 • An increase in permitted flow;

217 New or expanded actions could include increases in discharge concentration resulting
218 from the construction of new or expanded industrial or commercial facilities. In general,
219 Level II ADRs will be conducted for POTWs based on the design basis of the facility, so
220 subsequent Level II reviews would typically only occur during facility planning and
221 design for construction. Periods when treatment systems are being designed,
222 redesigned, or expanded are often ideal opportunities for implementing new
223 technologies or evaluating long-term strategies for pollution control. The intent of this
224 provision is that any POTW capacity expansion would qualify as an action potentially
225 subject to a Level II ADR.

226 A permit authorizes a facility to discharge pollutants without explicit permit limits as
227 long as those pollutants are constituents of wastestreams, operations, or processes that
228 were clearly identified during the permit application process, regardless of whether or
229 not they were specifically identified as present in the facility discharges (see
230 memorandum from Robert Perciasepe, Assistant Administrator for Water, to Regional
231 Administrators and Regional Counsels, July 1, 1994, at Pages 2-3). These pollutants are
232 generally treated the same as pollutants with explicit permit limits with regards to ADRs,
233 *i.e.*, if a renewing permit maintains the *status quo*, no additional ADR is required.
234 However, the Executive Secretary of the Utah Water Quality Board can require a Level II
235 ADR for any project, including renewing permits, if the proposed activity could
236 potentially degrade water quality.

237 *3.3.2 Actions Regulated by the DWQ*

238 Activities subject to ADR requirement include all activities that require a permit or
239 certification under the Clean Water Act. Special considerations for General Permits,
240 §401 Certifications, and Stormwater Permits are provided below.

241 *3.3.3 Activities that are not Considered to Result in Degradation or Additional*
242 *Degradation*

243 Level II ADRs are not required for projects that are not likely to result in degradation
244 of the receiving water. Nor are Level II ADRs typically required for projects when the
245 permit is being renewed with no increase in permitted flow or concentrations. Permits
246 that are being renewed met the ADR requirements when the permit was originally
247 issued and are not required to conduct additional ADRs in the absence of an increase in
248 degradation. A regulated discharge activity may not be considered to result in
249 degradation if:

- 250 • Water quality will not be further degraded by the proposed activity (R317-2-
251 3.5.b(1)). Examples include¹:
 - 252 a. The proposed concentration-based effluent limit is less than or equal to
253 the ambient concentration in the receiving water during critical
254 conditions; or
 - 255 b. A UPDES permit is being renewed and the proposed effluent
256 concentration and loading limits are equal to or less than the
257 concentration and loading limits in the previous permit; or
 - 258 c. A UPDES permit is being renewed and new effluent limits are to be
259 added to the permit, but the new effluent limits are based on
260 maintaining or improving upon effluent concentrations and loads that
261 have been observed, including variability; or
- 262 • The activity will result in only temporary and limited degradation of water quality
263 (see Section 3.3.4); or
- 264 • Additional treatment is added to an existing discharge and the facility retains
265 their current permit limits and design capacity; or
- 266 • The activity is a thermal discharge that has been approved through a Clean
267 Water Act §316(a) demonstration.

268 For some parameters, assimilative capacity is used when concentrations in the
269 discharge are less than ambient concentrations. For instance, if the pH in a discharge is
270 6 and ambient pH is 7, assimilative capacity for pH will be used and pH may be a
271 parameter of concern for a Level II ADR.

272 *3.3.4 Activities that are Considered to be Temporary and Limited*

273 This portion of the guidance is incomplete and the reader should contact DWQ for
274 assistance in the interim to determine if the activity will be considered temporary and
275 limited. A level II review may not be required if the Executive Secretary determines
276 degradation from a discharge qualifies as temporary and limited following a review of

¹ At the time this guidance was prepared, UAC R317-2-3.5.b.1.(d) contains an additional example. This additional example was disapproved by USEPA during the standards approval process and DWQ will remedy this discrepancy in future rulemaking. If a permit was issued relying on the disapproved example, EPA could disapprove the permit. Therefore, the example in question is not included in the Implementation Guidance.

277 information provided by the applicant (R317-2-3.5b(3) and (4)). The information
278 provided by applicant should include:

- 279 • length of time during which water quality will be lowered. As a general rule of
280 thumb, temporary means days or months not years;
- 281 • percent change in ambient conditions;
- 282 • pollutants affected;
- 283 • likelihood for long-term water quality benefits to the segment (e.g., as may
284 result from dredging of contaminated sediments);
- 285 • whether fish spawning, or survival and development of aquatic fauna will be
286 affected (excluding fish removal efforts);
- 287 • degree to which achieving the applicable Water Quality Standards during the
288 proposed activity may be at risk; and
- 289 • potential for any residual long-term influences on existing uses.

290 U.S. Fish and Wildlife Service and the Utah Division of Wildlife Resources should be
291 consulted to determine if the timing of the project potentially will affect fish spawning.
292 Clean Water Act Section 402 general permits, CWA Section 404 nationwide and general
293 permits, or activities of short duration may be deemed to have temporary and limited
294 effects on water quality. See Section 3.6 for additional detail.

295 **3.4 Responsibilityies for Completing Level II ADR Documentation**

296 ~~Early and frequent communication should occur between applicants and DWQ staff.~~
297 The applicant (owner), or owner's representative, is responsible for compiling the
298 information required for the selection of Parameters of Concern (Section 4.0),
299 Alternatives Analysis (Section 5.0), and the Statement of Social, Environmental, and
300 Economic Importance (Section 6.0) ~~and selecting the preferred option.~~ The applicant is
301 ~~also~~ responsible for recommending the parameters of concern and the preferred
302 alternative to DWQ. ~~However,~~ DWQ staff will assist where possible and provide timely
303 comments to draft material to avoid delays in the permitting process. Much of this
304 information is ~~compiled~~ prepared for other purposes such as a Facility Plan. The
305 suggested process for conducting Level II ADRs is shown in Figure 2.

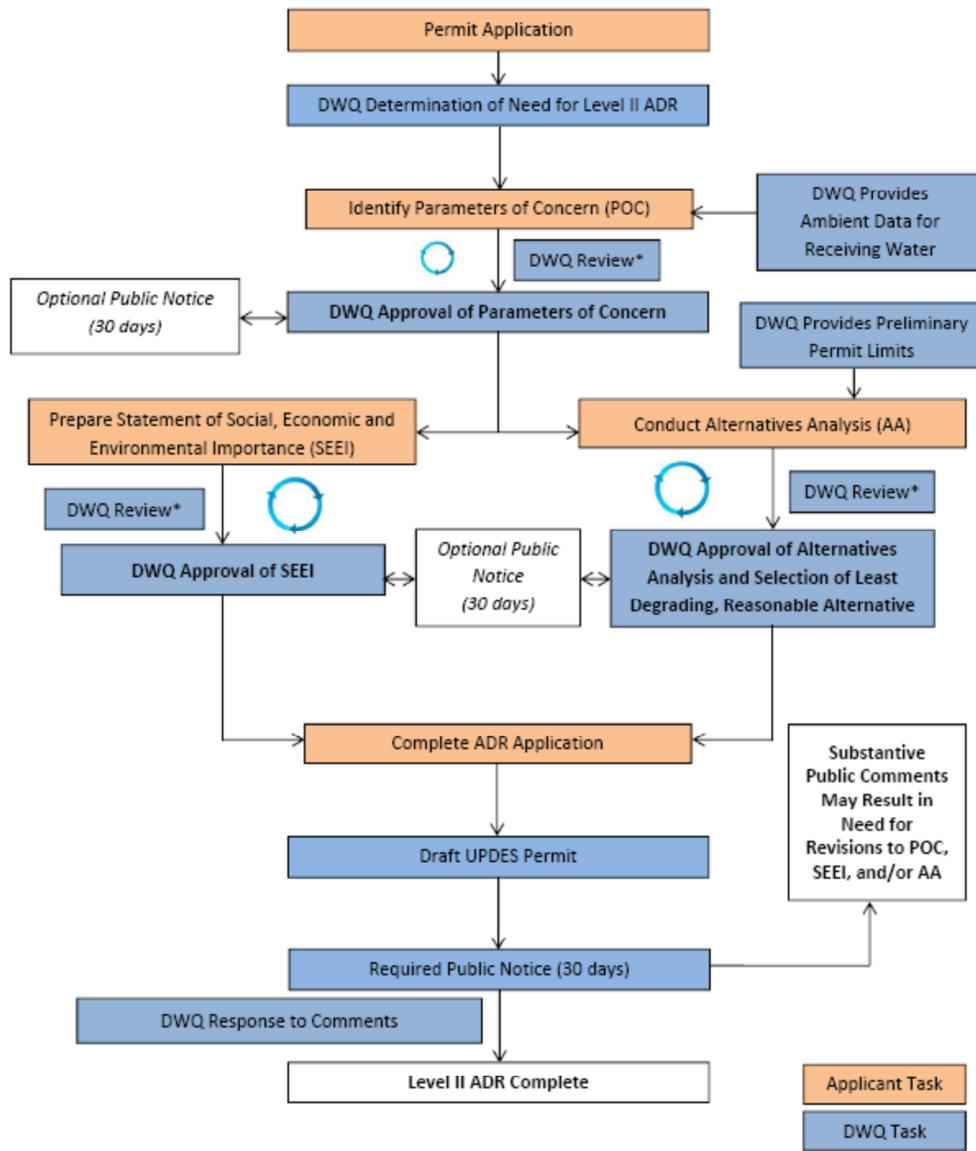
306 For new and expanded discharges, the Alternatives Analysis must be prepared under
307 the supervision of and stamped by a Professional Engineer registered with the State of
308 Utah.

309 **3.5 Timing of Level II ADRs and Interim Submittals**

310 ADR issues should be considered as early in the permitting or design process as
311 possible. Properly timed Level II ADRs are the most efficient use of time and resources.
312 For instance, many discharges already consider many of the requirements of Level II
313 alternative analyses (Section 5.0) while planning for construction of new facilities or

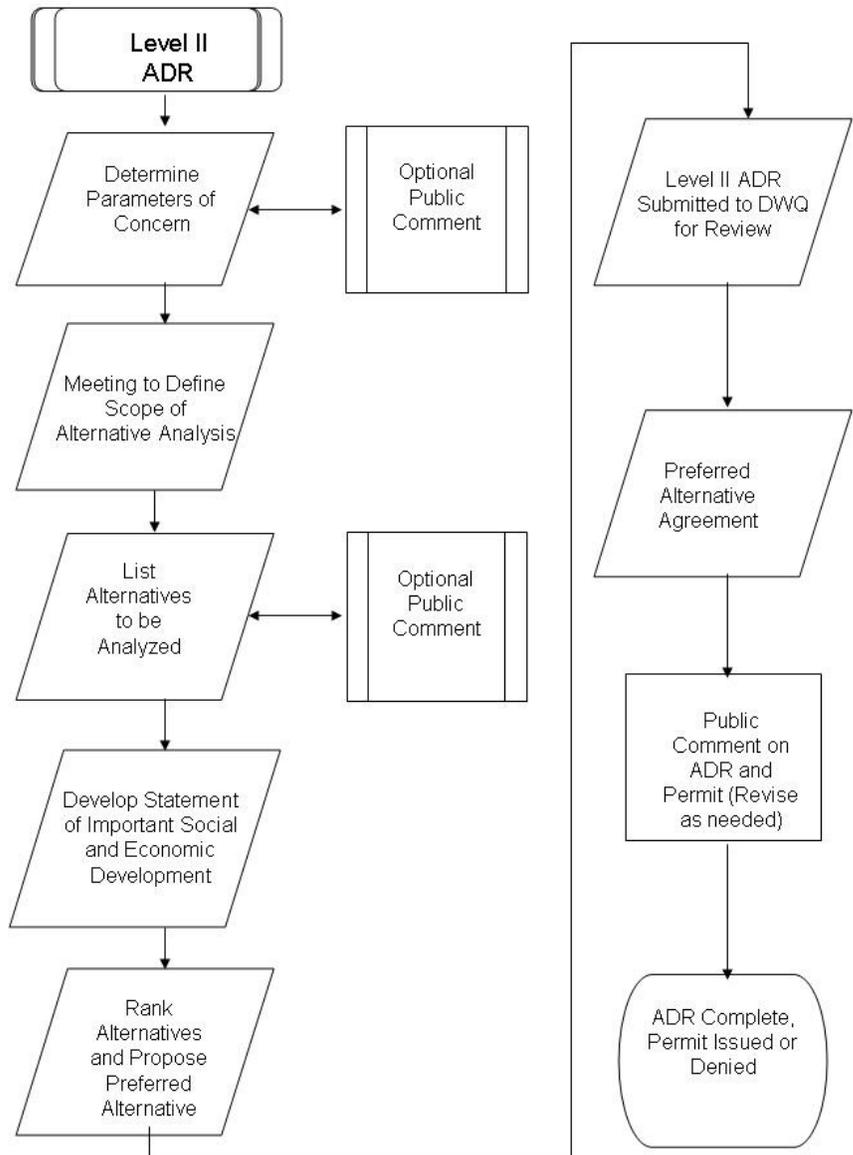
314 upgrades/expansion to existing facilities. Early planning also allows time to develop an
315 optional work plan which clearly defines a scope of work for developing alternatives.
316 The work plan minimizes miscommunication between DWQ staff and applicants and
317 documents decision points critical to the ADR. The work plan may be put out for public
318 comment, at the applicant's discretion, so that stakeholder concerns can be addressed
319 early in the process, which is much easier and less time consuming than addressing
320 concerns at the end of the permitting process. Finally, early notification provides
321 sufficient time for the DWQ and applicants to work together to ensure that sufficient
322 data are available to generate defensible permit limits. The DWQ suggests that
323 whenever possible applicants initiate ADR processes one year or longer prior to the
324 desired date of a permit. The actual time required to complete the ADR is dependent
325 | on the complexity of the ADR.

326



327
328

Figure 2. Process for completing a Level II Antidegradation Review (ADR).



329
 330
 331

Figure 2. Suggested process for completing a Level II Antidegradation Review (ADR).

332 **3.6 Public and Interagency Participation in ADRs**

333 Public participation is ~~an important~~ required part of the ADR process. Public notice
334 of antidegradation review findings, solicitations of public comment and maintenance of
335 antidegradation review documents as part of the public record help ensure that
336 interested parties can be engaged and involved throughout the review process. In
337 addition, intergovernmental coordination and review is required prior to any action that
338 allows degradation of water quality of a surface water.

339 **3.6.1 Required Public Notification-Process**

340 ~~Ultimately, the~~ completed and signed ADR and associated documentation will be
341 made available for public comment through the processes required for UPDES permits
342 (Figure 2). Typically, the required public notice will occur with the draft UPDES permit
343 just prior to issuance. For POTWs that obtain funding from DWQ for construction, the
344 ADR will be public noticed with the Environmental Assessment document and
345 determination.

346 DWQ is responsible for responding to comments from the mandatory public comment
347 period. The applicant may be required to conduct additional evaluation if substantive
348 comments are received.

349 **3.6.2 Optional Public Notification**

350 ~~If~~ However, the applicant may opt for earlier reviews upon completion of a work plan
351 that defines the parameters of concern and the alternatives to be considered for the
352 Level II ADR alternatives analysis. The primary purpose of these optional early reviews is
353 to identify stakeholder project concerns early in the permitting process when the
354 comments can be addressed most efficiently. If an early review is conducted, concerned
355 members of the public should use this work plan comment period to identify general
356 concerns with the proposed activity, additional parameters of concern that warrant
357 consideration, or additional treatment alternatives that should be considered. Figure 2
358 identifies decision points in the process when DWQ recommends that the applicant
359 solicit optional public comments.

360 DWQ will facilitate any optional public comment opportunities by making the
361 documents available on DWQ's website and the State's Public Notice website.
362 ~~Responding to comments for any optional public comment opportunities is the~~
363 ~~responsibility of the applicant.~~ For the optional public comment periods, DWQ can be
364 the recipient of the comments but the applicant has the responsibility of addressing the
365 comments. A comment response document is not required, but DWQ recommends that
366 the applicant respond to the comments in writing. If DWQ is not the recipient of the
367 comments, the applicant should share the comments received with DWQ in a timely
368 manner. DWQ responds to comments for the mandatory public comment period prior
369 to issuing the permit.

370 | 3.6.23 *Intergovernmental Coordination and Review*

371 Intergovernmental coordination is required prior to approving a regulated activity
372 that would degrade a surface water. This coordination will be conducted at a level
373 deemed appropriate by the Executive Secretary and will include any governmental
374 agency requesting involvement with the ADR.

375 **4.0 IDENTIFICATION OF THE PARAMETERS OF CONCERN**

376 | Parameters of concern (POC) are evaluated in the Level II ADR. ~~Only p~~Parameters in
377 the discharge that exceed, or potentially exceed, ambient concentrations in the
378 receiving water should be considered in selecting the parameters of concern.

379 **4.1 Determination of the Parameters of Concern**

380 The initial starting point should be the priority pollutants (EPA Form 2c
381 <http://www.waterquality.utah.gov/UPDES/EPAForm2C.pdf>), but other parameters may
382 be added or removed depending on the nature of the proposed project and the
383 | characteristics of the receiving water (UAC R317-2-3.5.b). The following are
384 considerations for selecting parameters of concern:

- 385 1. Are there any parameters in the effluent or expected to be in the effluent
386 that exceed ambient concentrations in the receiving water?

387 Ambient concentrations are determined by DWQ at critical conditions
388 and provided to the applicant. Typically, ambient conditions are based
389 on the most recent 10 years of data. Critical condition for
390 bioaccumulative toxics is considered the 80th percentile concentration
391 and for conventional pollutants and non-bioaccumulative toxics the
392 average concentration. The applicant may elect to collect water quality
393 data to reduce uncertainty and assist DWQ in determining existing
394 ambient concentrations.

395 The effluent concentrations are the permitted effluent limits or discharge
396 concentration of the baseline treatment alternative. For parameters that
397 do not warrant permit effluent limits based on DWQ's reasonable
398 potential analysis, the 80th percentile of the effluent concentrations
399 | should be used. If no discharge data ~~is-are~~ available for the baseline
400 treatment alternative, the concentration should be estimated based on
401 pilot studies, literature values, manufacturers guidelines and/or best
402 | professional ~~judgement~~judgment.

403 In cases when the available data are limited, comparisons between
404 effluent/permitted and ambient concentrations may be conducted using
405 methods that minimize type II errors, *i.e.*, erroneously concluding that a
406 pollutant will not degrade water quality.

- 407 2. Is the parameter already included in an existing permit?
- 408 3. Are parameter concentrations and/or loads exceeding or projected to
409 exceed the current permitted load or design basis?

410 4. Are there any parameters that are considered to be important by DWQ
411 or the general public? For instance, nutrients or bioaccumulative
412 compounds may be of concern for some surface waters. For discharges
413 to Class 1C drinking water sources, any substances potentially deleterious
414 to human health may be considered.

415 5. Are there parameters in the effluent that are known to potentially
416 degrade the existing beneficial uses of the receiving water?

417 6. Is the receiving water listed as impaired for any parameters? Parameters
418 for which the receiving water is listed as impaired and have an ongoing or
419 approved TMDL are not considered as part of the ADR and are addressed
420 through the TMDL program.

421 7. Is the discharge of the parameter temporary and limited? Refer to
422 Section 3.3.4 for guidance on what qualifies as temporary and limited.
423 Parameters that are determined to be temporary and limited are not
424 considered parameters of concern.

425 6-8. Special consideration for discharges to the Great Salt Lake. The Great Salt
426 Lake is a terminal lake and the only outflow is through
427 evapotranspiration, which has the effect of concentrating conservative
428 pollutants. If the pollutant does not degrade or degrades slowly in the
429 environment of the Great Salt Lake, and is potentially harmful to aquatic
430 life use of the Great Salt Lake, it may be considered a parameter of
431 concern even if the discharge concentration is lower than ambient
432 condition.

433 The applicant, working with DWQ, should review all available data, from the discharge
434 and the receiving water, and prepare a list of parameters which will be evaluated. DWQ
435 will provide any available data from the receiving water to the applicant. The list of
436 parameters of concern and supporting rationale should be submitted to DWQ. DWQ
437 will review the list and provide preliminary approval pending public comment. Meetings
438 between the applicant and DWQ are anticipated to be the most efficient way to resolve
439 differences regarding parameters to be considered in the Level II ADR.

440 Once the list of parameters of concern has been agreed to between DWQ and the
441 applicant, the list could be made available to the public by DWQ for an optional
442 comment period (see Section 3.7.1). After a 30-day comment period, the list may be
443 refined or approved. This list and associated rankings will form the basis for further
444 activities of the ADR and will ultimately be used to select the least degrading project
445 alternative (Section 5).

446 **4.21 Ranking and Weighting the Parameters of Concern**

447 If there is more than one parameter of concern, the parameters of concern may
448 need to be ranked, ~~or~~ and weighted, in order to determine overall water quality

449 degradation of a given treatment alternative. Ranking and weighting factor
 450 considerations are provided below. The basis of the ranking and weighting should be
 451 developed in consultation with DWQ and be documented in the ADR application.

- 452 1. For toxic POCs, using the EPA’s toxic weighting factors (TWF) ~~to calculate toxic~~
 453 ~~weighted pound equivalents (TWPE)~~ for the POCs may be appropriate. EPA
 454 derives TWFs from chronic aquatic life criteria (or toxic effect levels) and
 455 human health criteria (or toxic effect levels) established for the consumption
 456 of fish in order to account for differences in toxicity across pollutants and to
 457 provide the means to compare mass loadings of different pollutants. Other
 458 factors may be more appropriate for ranking toxic POCs than TWF on a case-
 459 by-case basis depending on site specific considerations such as the available
 460 assimilative capacity for each toxicant or downstream impacts associated with
 461 a particular toxicant. The TWFs can be obtained from multiple sources from
 462 EPA, including EPA’s DMR Pollutant Loading Tool (<http://cfpub.epa.gov/dmr/>).
 463 An example of ranked and weighted non-toxic POCs is provided in Table 4-1.
 464 The TWFs can be used to calculate toxic weighted pound equivalents (TWPE)
 465 of pollutant removed as described in Section 5.3.
- 466 2. For non-toxic POCs, ranking and weighting factors should reflect the relative
 467 potential impact of the POC on the beneficial uses of the receiving water. As
 468 this determination involves application of best professional judgment, the
 469 weighting factors will need to be developed in consultation with DWQ. An
 470 example of ranked and weighted non-toxic POCs is provided in Table 4-1.
 471 ~~— In the case where both toxic and non-toxic POCs are identified, ranking and~~
 472 ~~weighting will be based on best professional judgment based on site specific~~
 473 ~~considerations.~~

474 Table 4-1: Example Ranking and Weighting of Toxic Parameters of Concern

<u>Parameter</u>	<u>Rank</u>	<u>Toxic Weighting Factor</u>
<u>Cadmium</u>	<u>1</u>	<u>23.1</u>
<u>Arsenic</u>	<u>2</u>	<u>4.04</u>
<u>Copper</u>	<u>3</u>	<u>0.63</u>
<u>Ammonia</u>	<u>4</u>	<u>0.0014</u>

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476 An example of a table of ranked and weighted POCs is provided below.

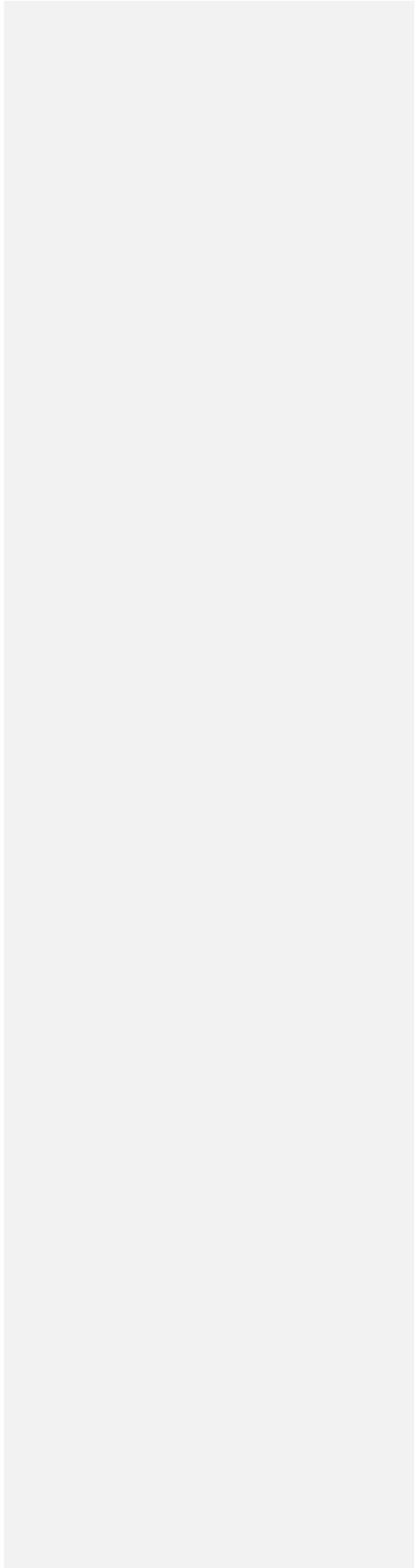
477 Table 4-24: Example Ranking and Weighting of Non-Toxic Parameters of Concern

<u>Parameter</u>	<u>Rank</u>	<u>Weight</u>
<u>Total Phosphorus</u>	<u>1</u>	<u>40%</u>
<u>BOD</u>	<u>2</u>	<u>30%</u>
<u>TSS</u>	<u>3</u>	<u>20%</u>
<u>Total Nitrogen</u>	<u>4</u>	<u>10%</u>

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480
481

		<u>100%</u>
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482 **5.0 ALTERNATIVES ANALYSIS ~~OF-FOR~~ LEVEL II ADRS**

483 ~~As the name suggests,~~ The alternatives analysis requires, to the extent
484 practicable/feasible, documentation of the costs and water quality benefits of alternative
485 treatment options. The purpose of ~~an~~-the alternatives analysis is to evaluate whether
486 there are any reasonable non-degrading or less degrading alternatives for the proposed
487 activity.

488 **5.1 Establishing the Baseline Treatment Alternative**

489 The Alternatives Analysis requires selecting the baseline treatment alternative, which
490 is defined as the treatment alternative that meets designated uses and associated
491 criteria through water quality based permit effluent limits established by the wasteload
492 analysis or TMDL and any other categorical limits or secondary standards. The cost of
493 the baseline treatment alternative must be estimated for the purpose of assessing the
494 cost reasonableness of less degrading alternatives.

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495 **5.2~~1~~ Development of ing a Scope of Work for ~~Level II ADR~~ Alternatives**
496 **Analysis**

497 The intent of this section is to ~~provide~~-outline a collaborative process to define the
498 scope of work for a Level II review which allows for analysis and document preparation.
499 This step is critical, as the level of effort for the alternatives analysis will depend on the
500 size and complexity of the project and the relative importance and sensitivity of the
501 receiving water.

502 **5.2.1 Collaborative Scoping**

503 The first suggested step in the scoping process will be to convene a meeting between
504 the applicant, project consultants, and DWQ to identify less degrading treatment
505 alternatives to be considered and the level of detail appropriate for the alternatives
506 analysis.

507 ~~review~~ The requirements for the scope of the alternatives analysis are found in R317-
508 2-3.5 ~~as shown below~~:

509 *"For proposed UPDES permitted discharges, the following list of alternatives should*
510 *be considered, evaluated and implemented to the extent feasible:*

- 511 (a) *innovative or alternative treatment options*
- 512 (b) *more effective treatment options or higher treatment levels*
- 513 (c) *connection to other wastewater treatment facilities*
- 514 (d) *process changes or product or raw material substitution*
- 515 (e) *seasonal or controlled discharge options to minimize discharging during*
516 *critical water quality periods*
- 517 (f) *pollutant trading*
- 518 (g) *water conservation*
- 519 (h) *water recycle and reuse*

- 520 (i) alternative discharge locations or alternative receiving waters
- 521 (j) land application
- 522 (k) total containment
- 523 (l) improved operation and maintenance of existing treatment systems
- 524 (m) other appropriate alternatives...
- 525

526 ~~An option more costly than the cheapest alternative may have to be implemented~~
527 ~~if a substantial benefit to the stream can be realized. Alternatives would generally be~~
528 ~~considered feasible where costs are no more than 20% higher than the cost of the~~
529 ~~discharging alternative, and (for POTWs) where the projected per connection service~~
530 ~~fees are not greater than 1.4% of MAGI (median adjusted gross household income),~~
531 ~~the current affordability criterion now being used by the Water Quality Board in the~~
532 ~~wastewater revolving loan program. Alternatives within these cost ranges should be~~
533 ~~carefully considered by the discharger. Where State financing is appropriate, a~~
534 ~~financial assistance package may be influenced by this evaluation, i.e., a less~~
535 ~~polluting alternative may receive a more favorable funding arrangement in order to~~
536 ~~make it a more financially attractive alternative."~~

537 **5.2 Establishing the Baseline Treatment Alternative**

538 ~~The Alternatives Analysis requires selecting the baseline treatment alternative, which~~
539 ~~is defined as the treatment alternative that meets water quality standards and water~~
540 ~~quality based permit effluent limits established by the wasteload analysis. The cost of~~
541 ~~the baseline treatment alternative must be estimated for the purpose of assessing the~~
542 ~~cost reasonableness of less degrading alternatives.~~

543 **5.2.23 General Considerations for Selecting Treatment Alternatives for** 544 **Consideration/Evaluation**

545 The number of alternatives to be considered and the extent of planning details for
546 alternative analyses may depend on the nature of the facility, size of the proposed
547 discharge, the magnitude of degradation, and the characteristics of the receiving water.
548 This section outlines screening procedures for determining reasonable alternatives that
549 are appropriately scaled to the proposed project. The alternatives specified here are
550 guidelines and may be modified from public comments or at the Executive Secretary's
551 discretion.

552 ~~For many projects, the Facility Plan documents the selection of the preferred~~
553 ~~treatment option and may be sufficient to meet the alternatives analysis requirement of~~
554 ~~the ADR depending on the specific parameters of concern.~~ The following guidelines
555 should be considered when defining the scope of work for the alternatives analysis:

- 556 1. The feasibility of all alternatives should be examined before inclusion in the
557 options to be reviewed in more detail. If an option is initially determined not to
558 be feasible, it ~~should~~ does not need to be considered further. ~~As an example,~~

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559 | ~~before pollutant trading is considered, willing partners in such trading should be~~
560 | ~~identified or the potential for trading should exist.~~

561 | 2. Innovative or alternative treatment options should be limited to proven or
562 | successfully piloted processes.

563 | 3. The treatment options subject to review should focus on those which have the
564 | greatest potential for water quality improvement for the parameters of concern.
565 | Flexibility to modify the treatment process to address potential future changes in
566 | waste streams or treatment requirements should also be considered.

567 | 4. When an instream need for the discharge water is deemed by the Executive
568 | Secretary to be of significant importance to the beneficial use (i.e., if removal of
569 | the discharge would result in a detrimental loss of stream flow), evaluation of
570 | reuse, land disposal or total containment may be unnecessary.

571 | 5. Alternatives may be ranked in order of potential for parameter reduction.
572 | Preference should be given to processes that have the greatest overall effect on
573 | water quality. Typically, these highest ranked processes will have the greatest
574 | reduction in pollutant load and affect the greatest number of parameters of
575 | concern.

576 | 6. Before improved operations and maintenance are considered as a way to
577 | prevent degradation, specific operation or maintenance activities should be
578 | identified. If Executive Secretary and the applicant agree, a third party may be
579 | used to assess potential for operations and maintenance improvements.

580 | **5.4 — Special Project Specific Scoping Considerations**

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581 | For many projects, the Facility Plan documents the selection of the preferred
582 | treatment option and may be sufficient to meet the alternatives analysis requirement of
583 | the ADR depending on the specific parameters of concern.

584 | ~~The number of alternatives to be considered and the extent of planning details for~~
585 | ~~alternative analyses may depend on the nature of the facility, size of the proposed~~
586 | ~~discharge, the magnitude of degradation, and the characteristics of the receiving water.~~
587 | ~~This section outlines screening procedures for determining reasonable alternatives that~~
588 | ~~are appropriately scaled to the proposed project. The alternatives specified here are~~
589 | ~~guidelines and may be modified from public comments or at the Executive Secretary's~~
590 | ~~discretion.~~

591 | All discharges requiring a permit must be provided with a level of treatment equal to
592 | or exceeding the requirements in R317-3 for technology based effluent limitations. As
593 | provided in R317-32, minimum technology based treatment requirements for POTWs
594 | consist of secondary treatment and applicable limitations and standards. The
595 | technology based review for POTWs in the Clean Water State Revolving Fund (SRF)
596 | process is accomplished through the Facility's Plan and Environmental Assessment. The

597 requirements of the process include an investigation of project need, alternatives,
598 effluent limitations, future conditions, and an Environmental Assessment. The
599 technology based review for POTWs subject to the SRF process generally is satisfied on
600 completion of the Facility Plan, Environmental Assessment, public participation, and
601 DWQ approval. -The technology based review for POTWs that are not in the SRF process
602 is conducted through the UPDES permitting process.

603 The technology based review for non-POTW facilities likewise is conducted during the
604 UPDES permitting and technology based requirements are applied when the permit is
605 drafted. DWQ has adopted categorical standards for discharges from various types of
606 industries. Existing industrial discharges are required to achieve the best conventional
607 pollutant control technology for conventional pollutants and the best available
608 technology for nonconventional and toxic pollutants. Certain new industrial discharges
609 are required to comply with new source performance standards based on the best
610 available demonstrated control technology. Effluent limitations for parameters or
611 industries not covered by the categorical standards and limitations are established on a
612 case-by-case basis, based on best professional judgment. The technology review is
613 complete when the Executive Secretary approves the draft permit.

614 If a Level II review was conducted for the facility for a previous renewal and a Level II
615 review is required for permit reissuance, and if the previous Level II review was based
616 on the design basis of the facility, the applicant should include a written statement
617 certifying that: 1) all alternative treatment processes remain applicable and that the
618 applicant is not aware of alternatives that were not previously considered, 2) that
619 reasonable alternative operation and maintenance procedures are not available that
620 would reduce degradation of the receiving water if implemented.

621 5.2.35 Finalizing the Alternatives ~~Work Plan~~ *Analysis Scope of Work*

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622 Once a scope of work is agreed to between DWQ and the applicant, the applicant can
623 proceed with completing the alternatives analysis.

624 The applicant may wish to public notice the scope of work for the alternatives
625 analysis. In this case, the scope of work should be documented in a work plan. The
626 work plan can be made available to the public and can be published on the State Public
627 Notice website at the applicant's discretion. ~~The scope of work may be modified in~~
628 ~~response to public comments, at the applicant's discretion.~~ This public comment period
629 may be held concurrent with the comment period for the parameters of concern, both
630 of which are at the applicant's discretion optional.

631 ~~For the optional public comment periods, DWQ can be the recipient of the comments~~
632 ~~but the applicant has the responsibility of addressing the comments. A comment~~
633 ~~response document is not required, but DWQ recommends that the applicant respond~~
634 ~~to the comments in writing. If DWQ is not the recipient of the comments, the applicant~~
635 ~~should share the comments received with DWQ in a timely manner.~~

636 Additional alternatives may be identified during the public comment period or during
637 evaluation of the alternatives. These possible changes to the scope ~~to of the~~

638 alternatives analyses should be reviewed by the Applicant and DWQ for inclusion in the
639 work plan, as needed.

640 **5.3.7 Procedures for ~~Evaluating~~ Selecting the Preferred Alternative**

641 ~~5.6 — Materials to be Submitted with Alternative Analyses~~

642 ~~For the DWQ to fairly evaluate alternative treatments, the following information~~
643 ~~should be provided for each alternative process:~~

- 644 ~~1. A technical description of the treatment process, including construction costs~~
645 ~~and continued operation and maintenance expenses.~~
- 646 ~~2. The mass and concentration of discharge constituents, and a description of the~~
647 ~~discharge location.~~
- 648 ~~3. A description of the reliability of the system.~~
- 649 ~~4. A ranking of each alternative in terms of its relative ability to minimize~~
650 ~~degradation to the receiving water (see Section 5.6).~~
- 651 ~~5. A ranking of each alternative as to how adaptable it would be to potentially~~
652 ~~changing regulatory requirements.~~

653 The procedures presented in this section are intended to be applied to those
654 alternatives that pass initial screening for feasibility. The more detailed quantitative
655 ranking of alternatives by ~~degradation~~ degradation and cost effectiveness may be
656 required depending on the size and complexity of the project and importance and
657 sensitivity of the receiving water.

658

659 ~~5.7 — Procedures for Evaluating the Preferred Alternative~~

660 ~~5.3.17.1 Applicant Ranking of Treatment Alternatives by Degradation~~

661 The alternatives should be ranked from the least-degrading to the most-degrading
662 alternative, as determined from the ~~established and~~ ranked and weighted pollutants of
663 concern and the treatment effectiveness of each alternative. Creating a ranked
664 hierarchy of alternatives helps to simplify the applicant's selection of a "preferred" the
665 least degrading, reasonable alternative. The applicant will need to estimate the mass of
666 each parameter removed by each treatment alternative based on the best available
667 information. ~~By ranking alternatives in this way, the applicant can avoid having to~~
668 ~~perform a detailed economic analysis on the universe of available alternatives, instead~~
669 ~~focusing efforts on only the "top" or least-degrading alternative. In a following step the~~
670 ~~applicant either selects the "top" alternative as the "preferred" alternative or conducts~~
671 ~~a more detailed review to justify eliminating that alternative from further consideration~~
672 ~~(e.g., the option would be too costly).~~

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673 A method for ranking the alternatives suitable for less complex reviews is to
 674 qualitatively rate the water quality improvement anticipated for each POC under each
 675 treatment alternative. Also, below is an example scale for determining the benefit of
 676 each alternative for the given parameter of concern.

677 Table 5-1: Example Water Quality Improvement Ratings

<u>Water Quality Improvement</u>	<u>Rating</u>
<u>Minor Improvement</u>	<u>1</u>
<u>Fair Improvement</u>	<u>2</u>
<u>Good Improvement</u>	<u>3</u>
<u>Excellent Improvement</u>	<u>4</u>
<u>No Degradation</u>	<u>5</u>

678

679 Table 5-2: Example Qualitative Alternative Rankings by Degradation (from least to most)

<u>Alternatives</u>	<u>POCA</u>		<u>POC B</u>		<u>POCC</u>		<u>Weighted Rating</u>	<u>Rank</u>
	<u>Rating</u>	<u>Weight¹</u>	<u>Rating</u>	<u>Weight¹</u>	<u>Rating</u>	<u>Weight¹</u>		
<u>Alternative 4</u>	<u>5</u>	<u>50%</u>	<u>4</u>	<u>30%</u>	<u>4</u>	<u>20%</u>	<u>4.5</u>	<u>1</u>
<u>Alternative 5</u>	<u>3</u>	<u>50%</u>	<u>5</u>	<u>30%</u>	<u>5</u>	<u>20%</u>	<u>4</u>	<u>2</u>
<u>Alternative 2</u>	<u>4</u>	<u>50%</u>	<u>2</u>	<u>30%</u>	<u>3</u>	<u>20%</u>	<u>3.2</u>	<u>3</u>
<u>Alternative 1</u>	<u>2</u>	<u>50%</u>	<u>3</u>	<u>30%</u>	<u>4</u>	<u>20%</u>	<u>2.7</u>	<u>4</u>
<u>Alternative 3</u>	<u>2</u>	<u>50%</u>	<u>3</u>	<u>30%</u>	<u>2</u>	<u>20%</u>	<u>2.3</u>	<u>5</u>

1: Weighting factor from the ranking and weighting of POCs.

680 ~~The applicant should identify situations in which different alternatives are more or~~
 681 ~~less degrading for individual pollutants. In these cases, the applicant should identify and~~
 682 ~~document its rationale regarding the alternative that — on the whole — is least~~
 683 ~~degrading. For example, alternative A might be least degrading for TDS, but result in a~~
 684 ~~more degradation than alternative B for selenium. If there were a downstream~~
 685 ~~impairment for TDS, that might influence a decision that the overall least degrading~~
 686 ~~alternative in our example was alternative A. On the other hand, if there was no~~
 687 ~~impairment downstream and the assimilative capacity reduction for TDS was 10 percent~~
 688 ~~and the selenium reduction in assimilative capacity was 75 percent, the preferred~~
 689 ~~alternative might be alternative B.~~

690 For more complex evaluations of alternatives, the ranking of alternatives ~~es~~ should be
 691 based on the development of a matrix giving the weighting of each parameter of
 692 concern ~~against each other~~ and the ~~rating of benefit the alternative has for the~~
 693 ~~individual parameter of concern~~ mass of pollutant removed by each alternative. The
 694 applicant will need to estimate the mass of each parameter removed by each treatment
 695 alternative based on the best available information. Toxic and non-toxic pollutants
 696 should be evaluated separately. ~~The rankings and a description of the rationale for~~
 697 ~~parameter weightings and overall rankings should be compiled and submitted to the~~
 698 ~~DWQ. The following is an example rating matrix that could be used in this process to~~
 699 ~~rank alternatives from least degrading to more degrading:~~

700 [Because toxic pollutants differ in their toxicity, the reductions in pollutant discharges](#)
 701 [need to be adjusted for toxicity by multiplying the estimated removal quantity for each](#)
 702 [pollutant by a normalizing weight, called a toxic weighting factor \(TWF\). The TWF for](#)
 703 [each pollutant measures its toxicity relative to copper, with more toxic pollutants having](#)
 704 [higher TWFs. The TWFs can be obtained from multiple sources from EPA, including](#)
 705 [EPA's DMR Pollutant Loading Tool \(http://cfpub.epa.gov/dmr/\). The use of toxic](#)
 706 [weights allows the removals of different pollutants to be expressed on a constant](#)
 707 [toxicity basis as toxic **weighted** pound-equivalents \(TWPE, lb-eq\) and summed to yield](#)
 708 [an aggregate measure of the reduction in pollutant discharge that is achieved by a](#)
 709 [treatment alternative \(Table 5-3\). The treatment alternatives can then be ranked by](#)
 710 [toxic pollutant removal \(Table 5-4\).](#)

711

712 [Table 5-3: Example Toxic Pollutant Removal Estimation for a Treatment Alternative](#)

Toxic Parameter	Influent		Effluent		Removal		Toxic Weighting Factor	TWPE Removal (lb-eq/yr)
	(mg/L)	(lb/day)	(mg/L)	(lb/day)	(lb/yr)	(%)		
Ammonia	<u>1</u>	<u>3.61</u>	<u>0.1</u>	<u>0.36</u>	<u>1,184.3</u>	<u>90%</u>	<u>0.0014</u>	<u>1.7</u>
Arsenic	<u>0.05</u>	<u>0.18</u>	<u>0.005</u>	<u>0.02</u>	<u>59.2</u>	<u>90%</u>	<u>4.04</u>	<u>239.2</u>
Cadmium	<u>0.02</u>	<u>0.07</u>	<u>0.005</u>	<u>0.02</u>	<u>19.7</u>	<u>75%</u>	<u>23.1</u>	<u>456.0</u>
Copper	<u>0.05</u>	<u>0.18</u>	<u>0.005</u>	<u>0.02</u>	<u>59.2</u>	<u>90%</u>	<u>0.63</u>	<u>37.3</u>
Hexavalent chromium	<u>0.05</u>	<u>0.18</u>	<u>0.005</u>	<u>0.02</u>	<u>59.2</u>	<u>90%</u>	<u>0.51</u>	<u>30.2</u>
Iron	<u>0.07</u>	<u>0.25</u>	<u>0.01</u>	<u>0.04</u>	<u>79.0</u>	<u>86%</u>	<u>0.0056</u>	<u>0.4</u>
Lead	<u>0.05</u>	<u>0.18</u>	<u>0.005</u>	<u>0.02</u>	<u>59.2</u>	<u>90%</u>	<u>2.24</u>	<u>132.6</u>
Mercury	<u>0.0001</u>	<u>0.00036</u>	<u>0.0001</u>	<u>0.00036</u>	<u>-</u>	<u>0%</u>	<u>120</u>	<u>0.0</u>
Selenium	<u>0.05</u>	<u>0.18</u>	<u>0.05</u>	<u>0.18</u>	<u>-</u>	<u>0%</u>	<u>1.1</u>	<u>0.0</u>
Silver	<u>0.01</u>	<u>0.04</u>	<u>0.004</u>	<u>0.01</u>	<u>7.9</u>	<u>60%</u>	<u>16.5</u>	<u>130.3</u>
Total chromium	<u>0.05</u>	<u>0.18</u>	<u>0.005</u>	<u>0.02</u>	<u>59.2</u>	<u>90%</u>	<u>0.076</u>	<u>4.5</u>
Total residual chlorine	<u>0.5</u>	<u>1.80</u>	<u>0.01</u>	<u>0.04</u>	<u>644.8</u>	<u>98%</u>	<u>0.509</u>	<u>328.2</u>
Zinc	<u>0.04</u>	<u>0.14</u>	<u>0.005</u>	<u>0.02</u>	<u>46.1</u>	<u>88%</u>	<u>0.047</u>	<u>2.2</u>
Total								<u>1,362.6</u>

713

714 [Table 5-4: Example Alternatives Ranking by Pollutant Removal for Toxic Pollutants](#)

Alternative	Removal (lb-eq/yr)	Rank
Alternative 4	<u>1,333</u>	<u>1</u>
Alternative 5	<u>1,012</u>	<u>2</u>
Alternative 2	<u>957</u>	<u>3</u>
Alternative 3	<u>886</u>	<u>4</u>
Alternative 1	<u>759</u>	<u>5</u>

715 | [For non-toxic pollutants such as TSS, BOD, TN, and TP, due to the varying mass of each](#)
716 | [pollutant observed in the discharge, the amount removed needs to be normalized. The](#)
717 | [suggested approach is to calculate a unitless removal ratio of pollutant removal for each](#)
718 | [alternative to the maximum pollutant removal amongst all of the alternatives \(Table 5-](#)
719 | [5\); however, other normalization methods could be appropriate.](#)

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Table 5-5: Example Alternatives Ranking by Pollutant Removal for Non-Toxic Pollutants

Alternatives	POC A			POC B			POC C			Weighted Removal Ratio	Rank
	Removal (lb)	Removal Ratio ¹	Weight ²	Removal (lb)	Removal Ratio ¹	Weight ²	Removal (lb)	Removal Ratio ¹	Weight ²		
Alternative 4	15	0.75	50%	15	0.50	30%	20	1.00	20%	0.73	1
Alternative 2	15	0.75	50%	10	0.33	30%	20	1.00	20%	0.68	2
Alternative 3	20	1.00	50%	5	0.17	30%	10	0.50	20%	0.65	3
Alternative 1	10	0.50	50%	20	0.67	30%	15	0.75	20%	0.60	4
Alternative 5	8	0.40	50%	30	1.00	30%	10	0.50	20%	0.60	5
Baseline	10	0.50	50%	8	0.27	30%	15	0.75	20%	0.48	6
Maximum	20	-	-	30	-	-	20	-	-	-	-
<p>1: POC removal normalized to maximum removal of all treatment alternatives, i.e. ratio of removal from alternative to max. removal of all alternatives.</p> <p>2: Weighting factor from the ranking and weighting of POCs.</p>											

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<u>Parameters of Concern Removed (Pounds/Year)</u>								
<u>Alternatives</u>	<u>P-1</u>	<u>Weight</u>	<u>P-2</u>	<u>Weight</u>	<u>P-3</u>	<u>Weight</u>	<u>Total Weighted</u>	<u>Ranking</u>
<u>Alternative 4</u>	<u>15</u>	<u>50%</u>	<u>15</u>	<u>30%</u>	<u>20</u>	<u>20%</u>	<u>16.0</u>	<u>1</u>
<u>Alternative 5</u>	<u>8</u>	<u>50%</u>	<u>30</u>	<u>30%</u>	<u>10</u>	<u>20%</u>	<u>15.0</u>	<u>2</u>
<u>Alternative 2</u>	<u>15</u>	<u>50%</u>	<u>10</u>	<u>30%</u>	<u>20</u>	<u>20%</u>	<u>14.5</u>	<u>3</u>
<u>Alternative 1</u>	<u>10</u>	<u>50%</u>	<u>20</u>	<u>30%</u>	<u>15</u>	<u>20%</u>	<u>14.0</u>	<u>4</u>
<u>Alternative 3</u>	<u>20</u>	<u>50%</u>	<u>5</u>	<u>30%</u>	<u>10</u>	<u>20%</u>	<u>13.5</u>	<u>5</u>
<u>Baseline</u>	<u>10</u>	<u>50%</u>	<u>8</u>	<u>30%</u>	<u>15</u>	<u>20%</u>	<u>10.4</u>	<u>6</u>

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Also, below is an example scale for determining the benefit of each alternative for the given parameter of concern:

<u>Ratings</u>	<u>=</u>
<u>Minor Improvement</u>	<u>1</u>
<u>Modest Improvement</u>	<u>2</u>
<u>Reasonable Improvement</u>	<u>3</u>
<u>Good Improvement</u>	<u>4</u>
<u>Excellent Improvement</u>	<u>5</u>

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5.3.27-2 Review-Evaluation and Selection of the Preferred of Feasibility of Alternatives

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After ranking the alternatives by degradation, the applicant will need to evaluate whether it would be reasonable to select a less degrading alternative. The factors that determine if an alternative is reasonable are cost effectiveness and affordability. Cost effectiveness and affordability are addressed in the rule (R317-2-3.5.c), which states:

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"An option more costly than the cheapest alternative may have to be implemented if a substantial benefit to the stream can be realized. Alternatives would generally be considered feasible where costs are no more than 20% higher than the cost of the discharging alternative, and (for POTWs) where the projected per connection service fees are not greater than 1.4% of MAGI (median adjusted gross household income), the current affordability criterion now being used by the Water Quality Board in the wastewater revolving loan program. Alternatives within these cost ranges should be carefully considered by the discharger. Where State financing is appropriate, a financial assistance package

745 may be influenced by this evaluation, i.e., a less polluting alternative may receive
 746 a more favorable funding arrangement in order to make it a more financially
 747 attractive alternative.”

748 Additional guidance on how to evaluate cost effectiveness and affordability are
 749 provided in the sections below.

750 5.3.2.1 Evaluation of Cost Effectiveness

751 An alternative must be cost effective to be considered reasonable. Cost effectiveness
 752 should be evaluated in two ways: overall cost increase and unit cost of pollutant
 753 removal in comparison to the baseline treatment alternative.

754 The total cost increase of each alternative needs to be estimated. The cost estimate is
 755 typically based on a concept level design with limited engineering; sufficient detail in the
 756 cost estimate should be provided so that the basis can be verified. The estimate should
 757 be the Net Present Value (NPV) of the 20-year life-cycle cost including land acquisition,
 758 capital cost, and operation and maintenance (O&M) costs. For simplicity, it is assumed
 759 that the discount rate equals the inflation rate in order to estimate operation and
 760 maintenance costs in today’s dollars, i.e. NPV of O&M equals 20 times O&M annual
 761 cost. For upgrades to existing facilities, only the cost basis for the upgrade should be
 762 considered, i.e. additional capital and O&M costs.

763 In some cases, the applicant will be requested to calculate unit costs for pollutant
 764 removal to provide additional information to evaluate the relative cost effectiveness of
 765 each of the treatment alternatives. The unit cost of toxic pollutant removal is calculated
 766 using the total cost of the alternative and the equivalent pollutant mass removed that
 767 was previously determined. An example table is provided below:

768 Table 5-6: Example Cost Effectiveness of Treatment Alternatives for Toxic Pollutant
 769 Removal

<u>Alternative</u>	<u>Total Cost</u>	<u>Total Cost Increase</u>	<u>Pollutant Removal (lb-eq)</u>	<u>Unit Cost (\$/lb-eq/yr)</u>	<u>Unit Cost Increase</u>
<u>Alt 1</u>	<u>\$1,100</u>	<u>10%</u>	<u>14</u>	<u>\$78.57</u>	<u>-18.3%</u>
<u>Alt 2</u>	<u>\$1,400</u>	<u>40%</u>	<u>14.5</u>	<u>\$96.55</u>	<u>0.4%</u>
<u>Alt 3</u>	<u>\$1,300</u>	<u>30%</u>	<u>13.5</u>	<u>\$96.30</u>	<u>0.1%</u>
<u>Alt 4</u>	<u>\$2,000</u>	<u>100%</u>	<u>16</u>	<u>\$125.00</u>	<u>30.0%</u>
<u>Alt 5</u>	<u>\$1,500</u>	<u>50%</u>	<u>15</u>	<u>\$100.00</u>	<u>4.0%</u>
<u>Baseline</u>	<u>\$1,000</u>		<u>10.4</u>	<u>\$96.15</u>	

770

771 Since it is not possible to determine an equivalent mass of removal for non-toxic
 772 pollutants, the unit cost should be presented for each non-toxic pollutant under each
 773 treatment alternative.

774 5.3.2.2 Evaluation of Affordability

775 Although a 20% total cost increase is generally considered the threshold for both cost
776 effectiveness and affordability, less degrading alternatives that are determined to be
777 cost effective may be evaluated for affordability.

778 For public sector discharges, alternatives where the projected per connection service
779 fees are not greater than 1.4% of the median adjusted gross household income are
780 generally considered affordable. This is the affordability criterion currently being used
781 by the Water Quality Board for the wastewater revolving loan program. Secondary
782 socioeconomic factors that can be considered to evaluate affordability for public-sector
783 discharges include debt indicators (such as bond rating and overall net debt),
784 socioeconomic indicators (such as unemployment rate), and financial management
785 indicators (such as property tax revenue and property tax collection rate).

786 For private sector discharges, the determination of the affordability of less degrading
787 alternatives will be based on an evaluation of the effect on profitability, liquidity,
788 solvency and leverage of the entity in comparison to industry benchmarks.

789 Worksheets to assist with the calculation of these economic indicators are available
790 by request from EPA (<http://water.epa.gov/scitech/swguidance/standards/economics/>).

791 ~~The applicant will recommend the preferred alternative to DWQ. DWQ will review~~
792 ~~the ratings developed by the applicant or their consultant. The Alternatives should be~~
793 ~~listed from the one showing the most improvement to the one showing the least~~
794 ~~improvement for water quality from the scores in the matrix. The costs for each~~
795 ~~alternative should be listed with its ranking and the rankings should then be evaluated.~~

796 5.3.2.3 Other Considerations

797 In ~~determining the selected~~selecting the preferred alternative, the following
798 additional items should be considered and evaluated:

799 1. Alternative Operations and Maintenance (O&M) scenarios should be considered
800 in the ranking process. An Alternative O&M scenario will generally be considered
801 feasible if -the annual cost increase is no more than 10% of the annual operating
802 cost or 20% of the 20-year ~~present worth~~NPV, whichever is less.

803 2. In ~~considering~~evaluating the feasibility of alternatives, the review should
804 consider the current zoning ~~requirement surrounding the facility being evaluated~~
805 for the community surrounding the facility.

806 3. The review of the selected alternative should also include factors such as
807 reliability, maintainability, operability, sustainability, and adaptability to
808 potentially changing discharge requirements.

809 ~~4.~~—When different alternatives have similar potential to reduce degradation of
810 water quality, other ancillary water quality benefits should be considered such as
811 maintenance or enhancement of instream flow or habitat.

812 4.

813 | ~~5.~~ Optional mitigation projects may also be included with any selected alternative
814 | when it is deemed to be cost effective and environmentally beneficial. If the
815 | discharger includes a mitigation project with an alternative, consideration should
816 | be given to the expected net benefits to water quality of both the discharge and
817 | mitigations when ranking project alternatives.

818 | 5.

819 | ~~7. The review of the selected alternative should also include factors such as~~
820 | ~~reliability, maintainability, operability, sustainability, and adaptability to~~
821 | ~~potentially changing discharge requirements.~~

822 | ~~6. Also included in the review should be consideration of the sensitivity of receiving~~
823 | ~~water and its potential for overall improvement.~~

824 | 5.3.3 Selecting the Preferred Alternative

825 | Based on all of the factors considered, the applicant will recommend the preferred
826 | alternative to DWQ for review and approval.

827 | For the DWQ to fairly evaluate treatment alternatives, the following information
828 | should be provided for each alternative process:

- 829 | 1. A technical description of the treatment process.
- 830 | 2. Rank alternatives from least degrading to most degrading based on the mass of
831 | pollutants removed.
- 832 | 3. Evaluation of cost effectiveness, including estimation of total cost and unit cost
833 | for pollutant removal.
- 834 | 4. Evaluation of affordability, if necessary.
- 835 | 5. Evaluation of the reliability, maintainability, operability, sustainability, and
836 | adaptability of each alternative.

837 | 5.4 Opportunity for Public Comment and Review Optional Public Notice 838 | of the Preferred Alternatives Analysis

839 | Once the preferred alternative is selected, an optional public comment period may be
840 | conducted by being posted on the DWQ website and being noticed in the State of Utah
841 | Public Notice Website (see Section 3.7.16.2). If no optional reviews are conducted, the
842 | public has an opportunity to comment during the mandatory UPDES public comment
843 | period.

844 |

Comment [NvS1]: Proposing to delete this consideration for the following reasons: 1) it is unreasonable to expect the applicant and DWQ to assess overall receiving water health and potential for improvement for individual ADRs, which would essentially require a watershed plan and 2) presumably the selected treatment alternative is cost effective/affordable and therefore could be argued should be implemented regardless of overall health.

845 | **6.0 ~~IMPLEMENTATION PROCEDURES FOR~~ DEVELOPMENT OF A**
846 **STATEMENT OF SOCIAL, ENVIRONMENTAL, AND ECONOMIC**
847 **IMPORTANCE (SEEI)**

848 Beyond the alternatives analysis, the second key component of a Level II ADR is a
849 Statement of Social, Environmental, and Economic Importance (SEEI). The SEEI
850 evaluates the societal benefits of the proposed activity by documenting factors such as:
851 employment, production, tax revenues, housing, and correction of other societal
852 concerns (i.e., health or environmental concerns). This portion of the ADR provides the
853 project proponent the opportunity to document that the overall benefits of the project
854 outweigh any negative consequences to water quality. As a result, the project
855 proponent is best served by making this portion of the ADR as thorough as possible. At
856 a minimum this portion of the review should contain the following:

- 857 1. A description of the communities directly affected by the proposed project,
858 including factors such as: rate of employment, personal or household
859 income, poverty level, population trends, increasing production, community
860 tax base, etc.
- 861 2. An estimate of important social and economic benefits that would be
862 realized by the project, including the number and nature of jobs created and
863 projected tax revenues generated.
- 864 3. An estimate of any social and economic costs of the project, including any
865 impacts on commercial or recreational uses.
- 866 4. A description of environmental benefits of the project and associated
867 mitigation efforts (if any). For instance, if a project would result in an
868 increase in stream flow that would provide additional habitat and a net
869 benefit to stream biota, this benefit would be documented in this section of
870 the review.
- 871 5. Documentation of local government support.

872 As with the Alternatives Analysis portion of the ADR, the size and scope of the SEEI
873 should be commensurate with the size of the proposed project. The applicant may
874 reference existing documents that address alternatives such as Environmental Impact
875 Statements. Also, it is in the best interest of the project proponent to make the SEEI as
876 thorough as possible if the project is likely to be controversial.

877

878 **6.1 Regulatory Framework**

879 The need for SEEs comes from 40 CFR 131.12(a)(2), which states, “Where the quality
880 of waters exceeds levels necessary to support fish, shellfish, and wild life and recreation
881 in and on the water, the quality shall be maintained and protected unless the State find,
882 ..., that allowing lower water quality is necessary to accommodate social or economic
883 development in the area in which the waters are located...” (emphasis added).

884 Accordingly, UAC R317-2-3.5(c)4 specifically calls for SEEI demonstrations:

885 *“Although it is recognized that any activity resulting in a discharge to surface*
886 *waters will have positive and negative aspects, information must be submitted by*
887 *the applicant that any discharge or increased discharge will be of economic or*
888 *social importance in the area.*

889 *The factors addressed in such a demonstration may include, but are not limited*
890 *to, the following:*

891 *(a) employment (i.e., increasing, maintaining, or avoiding a reduction in*
892 *employment);*

893 *(b) increased production;*

894 *(c) improved community tax base;*

895 *(d) housing;*

896 *(e) correction of an environmental or public health problem; and*

897 *(f) other information that may be necessary to determine the social and*
898 *economic importance of the proposed surface water discharge.”*

899

900

901

902 **6.2 Important Considerations in developing SEEs**

903 The DWQ anticipates that the specific information provided in the SEEI will vary
904 depending on the nature of the project and the community or communities that will be
905 affected by the proposed activity. Nonetheless, this section provides guidance for some
906 of the social and economic considerations that the applicant may want to include with
907 the SEEI portion of the Level II ADR. Many of the decisions relating to the social and
908 economic considerations are local in nature and the local government agencies should
909 be consulted to determine directions that are appropriate.

910 The SEEI is about demonstrating that the degradation will support important social
911 and economic development in the local area. The SEEI is not about the economic
912 benefits to an individual or corporation. Instead, the SEEI is intended to support an
913 informed public discussion and decision about the pros and cons of allowing water
914 quality degradation. If the lowering of water quality resulting from the preferred
915 alternative is not in the overriding public interest, then a less-degrading alternative must
916 be selected or the permit may be denied. If the lowering of water quality is found to be
917 in the overriding public interest, this finding is documented and submitted for public
918 comment along with the draft permit incorporating the preferred alternative.

919 *6.2.1 Effects on Public Need/Social Services*

920 Identify any public services, including social services that will be provided to or
921 required of the communities in the affected area as a result of the proposed project.
922 Explain any benefits that will be provided to enhance health/nursing care, police/fire
923 protection, infrastructure, housing, public education, etc.

924 *6.2.2 Effects on Public Health/Safety*

925 Identify any health and safety services that will be provided to or required of the
926 communities in the affected area as a result of the proposed project. Explain any
927 benefits that will be provided to enhance food/drinking water quality, control disease
928 vectors, or to improve air quality, industrial hygiene, occupational health or public
929 safety. One example is the construction of a central treatment plant to correct
930 problems with failing septic systems. Another example might be removal or additions of
931 toxic or bacteriological pollutants, which reduce life expectancy and increased illness
932 rates.

933 *6.2.3. Effect on Quality of Life*

934 Describe the impacts of the proposed project on the quality of life for residents of the
935 affected area with respect to educational, cultural and recreational opportunities, daily
936 life experience (dust, noise, traffic, etc.) and aesthetics (viewscape).

937 *6.2.4. Effect on Employment*

938 Explain the impacts of the proposed project on employment practices in the affected
939 area. Identify the number and type of jobs projected to be gained or lost as a result of

940 the proposed project. Will the proposed project improve employment or mean
941 household income in the affected area?

942 *6.2.5 Effect on Tax Revenues*

943 Explain the impact of the proposed project on tax revenues and local or county
944 government expenditures in the affected area. Will the project change property values
945 or the tax status of properties? If yes, explain whether that change is a beneficial or
946 detrimental to residents/businesses in the affected area.

947 *6.2.6 Effect on Tourism*

948 Discuss the effects the proposed project may have on the economy of the affected
949 area by creating new or enhancing existing tourist attractions. Conversely, describe any
950 impacts resulting from the elimination of or reduction in existing attractions.

951 *6.2.7 Preservation of assimilative capacity*

952 Review the pros and cons of preserving assimilative capacity for future industry and
953 development. Applicants are encouraged to talk with local stakeholders such as
954 planning, zoning, and economic development officials about their development plans,
955 and should summarize the communities' position on utilizing assimilative capacity for
956 the proposed project versus future plans or needs.

957 *6.2.8 Other Factors*

958 Provide any other information that would explain why it is necessary to lower water
959 quality to accommodate this proposed project. This category should be used to address
960 any social or economic factors not considered above.

961 **6.3 Review and Approval of SEEIs**

962 Important social, economic or environmental activity refers to an activity that is in the
963 overriding public interest. The Executive Secretary will generally consider public
964 projects to be necessary to accommodate social and economic growth unless
965 compelling information exists to the contrary. DWQ may consult with local and State
966 planning and zoning agencies to determine whether or not the project is consistent with
967 the long-term plans of affected communities. Information obtained from local planning
968 groups may be compiled with other material obtained through the ADR process. The
969 Executive Secretary will make a determination. Appeals to the Executive Secretary's
970 decision may be made consistent with the procedures for administrative appeals.

971 **6.4 Public Comment Procedures**

972 At a minimum the SEEI material will be submitted for public comment, along with all
973 other Level II ADR materials, through the required public comment processes used for
974 permit applications and renewals. However, as described in Section 3.5, the applicant
975 may include a cursory, or preliminary, SEEI with the work plan, because much of the

976 information described in SEEI reports help explain the greater socioeconomic context
977 within which the project takes place.
978

979 **7.0 SPECIAL PERMIT CONSIDERATIONS**

980 Most of the implementation procedures discussed in this document are clearly
981 applicable to UPDES permitting procedures. However, the DWQ also issues other types
982 of permits, which have special ADR considerations. This portion of the guidance is
983 incomplete and the reader should contact DWQ for assistance regarding these permits
984 in the interim.

985 **7.1 Individual Stormwater Permits**

986 This portion of the guidance is incomplete and the reader should contact DWQ for
987 assistance in the interim. Stormwater permits are subject to an ADR unless the impact
988 to water quality is temporary and limited.

989 **7.2 General Permits**

990 A number of discharges to surface waters are authorized under general UPDES
991 permits issued by the DWQ:

- 992 • Concentrated Animal Feeding Operations (CAFOs)
- 993 • Concentrated aquatic animal feeding operations
- 994 • Construction dewatering or hydrostatic testing
- 995 • Construction site stormwater
- 996 • Municipal stormwater
- 997 • Industrial stormwater
- 998 • Drinking water treatment plants
- 999 • Private on-site wastewater treatment systems
- 1000 • ~~Construction sites one acre or larger~~
- 1001 • Coal mining operations
- 1002 • Discharge of treated groundwater
- 1003 • Application of pesticides
- 1004

1005 New and reissued General Permits will be reviewed for compliance with
1006 antidegradation provisions as described in this section. The Executive Secretary will
1007 determine the need for a Level II ADR for General Permits on a case-by-case basis until
1008 this implementation guidance is updated to fully address General Permits. New and
1009 reissued General Permits may require evaluation of the potential for degradation as a
1010 result of the permitted discharges if the discharges are not temporary and limited.
1011 DWQ anticipates expanding and revising the ADR guidance for general permits in future
1012 iterations.

1013 Individual regulated activities authorized under General Permits through Notice of
1014 Intent (NOI) procedures are covered under the antidegradation review for the General
1015 Permit and will typically not be required to conduct a Level II ADR. DWQ, after reviewing
1016 the submitted NOI, may require an eligible discharge to undergo a Level II Review if it is
1017 determined that significant degradation may occur as a result of cumulative impacts

1018 from multiple discharges to a water body, as a result of impacts from a single discharger
1019 over time, and/or due to the sensitivity of the receiving water.

1020 UPDES General Permits require that discharges authorized under the permit do not
1021 violate water quality standards and best management practices (BMP) contained in the
1022 permit are implemented. Compliance with the terms of the General Permit is required
1023 to maintain authorization to discharge.

1024 An antidegradation review will be conducted for the entire class of general permittees
1025 that are authorized under the General Permit. The antidegradation review will consist of
1026 the following activities:

1027 1) Identify the pollutants that may contribute to water quality degradation.

1028 The pollutants that are reasonably expected to occur in discharges covered under
1029 the General Permit will be identified. These pollutants will be considered to have
1030 the potential to degrade high quality waters.

1031 2) Ensure that water quality standards will be met.

1032 The discharge of pollutants must meet water quality standards as determined by
1033 the wasteload analysis. Conservative assumptions will generally be made to
1034 ensure protection of high quality waters, including designated uses of 1C, 2A, 3A
1035 and 4 of the receiving water and no dilution under critical conditions.

1036 3) Review the suite of approved BMPs that minimize the degradation from these
1037 pollutants.

1038 The suite of approved BMPs will be reviewed for conformance with
1039 antidegradation provisions. The criteria for selecting BMPs include effectiveness
1040 at minimizing the pollutants in the discharge, and cost effectiveness and
1041 reasonableness of implementation.

1042 4) Documentation and public notice of the antidegradation review.

1043 The antidegradation review will be documented and public noticed with the draft
1044 General Permit.

1045 The level of effort of the antidegradation review will depend on the nature of the
1046 General Permit, the number of dischargers anticipated to fall under the permit, and the
1047 sensitivity of the receiving waters; however, the level of effort will typically be limited
1048 since discharges with a significant potential to degrade water quality generally require
1049 individual permits.

1050 **7.3 §401 Water Quality Certifications**

1051 The Clean Water Act gives authority to each state to issue a 401 Water Quality
1052 Certification (§401 Certification) for any project that needs a Section 404 Permit. The
1053 §401 Certification is a verification by the state that the project will not violate water
1054 quality standards. DWQ works with applicants to avoid and minimize impacts to water
1055 quality and may require actions on projects to protect water quality. These required
1056 actions are called conditions.

1057 7.3.1 §404 Dredge and Fill Permits

1058 Section 404 of the Clean Water Act regulates the placement of dredged or fill material
1059 into the “waters of the United States,” ~~including small streams and wetlands adjacent~~
1060 ~~or connected to “waters of the United States.”~~ The U.S. Army Corps of Engineers
1061 (USACE) administers the §404 permit program dealing with these activities (e.g.,
1062 wetland fills, in-stream sand/gravel work, etc.) in cooperation with the EPA and in
1063 consultation with other public agencies. Nationwide general permits are issued for
1064 activities with impacts not deemed to be significant. Individual permits are issued for
1065 activities that are considered to have more than minor adverse impacts. For both
1066 individual and nationwide §404 permits, states have an obligation to certify, certify with
1067 conditions, or not certify §404 permits under §401 of the Clean Water Act.
1068 Antidegradation reviews involving the placement of dredged or fill material will be
1069 performed via the §401 Certification process.

1070 Section 73-3-29 of the Utah Code requires any person, governmental agency, or other
1071 organization wishing to alter the bed or banks of a natural stream to obtain written
1072 authorization from the State Engineer prior to beginning work. The Stream Alteration
1073 Program was implemented in 1972 in order to protect the natural resource value of the
1074 state’s streams and protect the water rights and recreational opportunities associated
1075 with them. In 1988, the U.S. Army Corps of Engineers issued Regional General Permit 40
1076 (GP-40) which allows an applicant to obtain both state approval and authorization under
1077 Section 404 of the Clean Water Act through a single application process. Although not all
1078 stream alteration activities qualify for approval under GP-40, many minimal impact
1079 projects can be approved under this joint permit agreement.

1080 These activities are subject to ADR requirements (R317-2-3.5.a.1.). ~~This portion of the~~
1081 ~~guidance is incomplete and the reader should contact DWQ for assistance regarding~~
1082 ~~ADRs for these permits in the interim.~~

1083 Antidegradation and compliance with water quality standards will be addressed and
1084 implemented through DWQ’s §401 Water Quality Certification process. Applicants who
1085 fulfill the terms and conditions of applicable §404 Permits and the terms and conditions
1086 of the corresponding §401 Water Quality Certification will have fulfilled the
1087 antidegradation requirements. Additional antidegradation considerations may be
1088 incorporated into §404 Permits and the corresponding §401 Water Quality Certifications
1089 at the time of permit issuance. DWQ will not issue a §401 Water Quality Certification
1090 where degradation resulting from the project is not necessary to accommodate
1091 important social, environmental, or economic development.

1092 The decision making process for Individual §404 Permits is contained in the §404(b)(1)
1093 guidelines (40 CFR Part 230) and contains the elements for a Level I and Level II
1094 Antidegradation Review. Prior to issuing a permit under the §404(b)(1) guidelines,
1095 USACE must: 1) make a determination that the proposed discharges are unavoidable
1096 (i.e., necessary); 2) examine alternatives to the proposed activity and authorize only the
1097 least damaging practicable alternative; and 3) require mitigation for all impacts
1098 associated with the activity. A §404(b)(1) findings document is produced as a result of

1099 this procedure and is the basis for the permit decision. Public participation is also
1100 provided for in this process. Level I and Level II Antidegradation Review will be met
1101 through §401 Water Quality Certification of Individual §404 Permits that will typically
1102 rely upon the information contained in the §404(b)(1) findings document. However, if
1103 significant water quality degradation may occur as a result of the proposed activity,
1104 DWQ will require the applicant to provide additional documentation to complete a
1105 formal Level II Review.

1106 For activities covered under a Nationwide §404 Permit, the antidegradation review
1107 will be conducted in conjunction with DWQ's review of the Nationwide Permit for §401
1108 Water Quality Certification. The antidegradation review for Nationwide Permits will be
1109 conducted by DWQ similar to the process for UPDES General Permits (Section 7.2). For
1110 minor activities covered under Nationwide Permits (e.g., road culvert installation, utility
1111 line activities, bank stabilization, etc.), antidegradation requirements will be deemed to
1112 be met if all appropriate and reasonable BMPs related to erosion and sediment control,
1113 project stabilization, and prevention of water quality degradation are applied and
1114 maintained. The §401 Water Quality Certification may place additional conditions upon
1115 the Nationwide Permit to prevent or minimize water quality degradation.

1116 7.3.2 Federal Energy Regulatory Commission Licenses

1117 The Federal Energy Regulatory Commission (FERC) licenses the operation of dams that
1118 generate hydroelectric power. Applicants for these licenses are required to obtain §401
1119 Water Quality Certification. Antidegradation and compliance with water quality
1120 standards will be addressed and implemented through DWQ's §401 Water Quality
1121 Certification process. Applicants who fulfill the terms and conditions of an applicable
1122 FERC license and the terms and conditions of the corresponding §401 Water Quality
1123 Certification will have fulfilled antidegradation requirements. DEQ will not issue a §401
1124 Water Quality Certification where degradation resulting from the project is not
1125 necessary to accommodate important social or economic development.

1126 Hydroelectric dams affect water quality in the impounded reservoir and in the
1127 downstream receiving water. The antidegradation review for the water quality
1128 certification will focus on the degradation in water quality that may result from the
1129 construction of the dam and operation of the reservoir. DWQ may place conditions on
1130 operations or require other actions to mitigate the effect on water quality.

1131 As part of the antidegradation review for the §401 Water Quality Certification for a
1132 FERC License, DWQ will require the applicant to complete a formal Level II Review if
1133 significant water quality degradation may occur.

1134 When a project undergoes relicensing with FERC, the relicensing certification process
1135 will compare the water quality under the current FERC license with projected water
1136 quality in the future under the proposed FERC license. If this comparison shows no
1137 additional degradation in water quality, then a Level II Review will not be required.

1138 **8.0 ISSUES FOR FUTURE ITERATIONS OF THE IMPLEMENTATION**
1139 **GUIDANCE**

1140 As discussed in Section 1.0, the initial versions of this guidance focus on UPDES
1141 permits with the exception of general permits. For the topics listed below in Section
1142 7.1, the guidance is incomplete. The existing guidance provided for these topics
1143 represents DWQ's current thinking but is incomplete and should be applied with
1144 caution. For activities requiring ADRs, but not yet completely addressed in guidance, the
1145 permittee should consult DWQ for assistance. These ADRs will be conducted on a case-
1146 by-case basis consistent with the requirements of R317-2-3.

1147 **8.1 Planned Future Additions to the Guidance**

- 1148 1. Glossary. A glossary of that defines important terms used in the guidance will be added
1149 to future iterations.
- 1150 2. Acronym Key. A key that identifies the acronyms used in the guidance will be added to
1151 future iterations.
- 1152 3. References. References will be added to future iterations of the guidance.
- 1153 4. Temporary and Limited. Guidance on how to determine if a discharge qualifies as
1154 temporary and limited will be added to future iterations.
- 1155 5. General permits and 401 Certifications. General Permits that are subject to ADR
1156 requirements include:
1157 Animal Feeding Operations (AFOs),
1158 Construction dewatering or hydrostatic testing,
1159 Municipal stormwater,
1160 Industrial stormwater,
1161 Drinking water treatment plants, Private on-site wastewater treatment systems
1162 Stream alteration permits,
1163 Construction sites one acre or larger,
1164 Coal mining operations and,
1165 Discharge of treated groundwater.