PRIORITIZING UTAH'S 303(D) LIST

3/14/2016

Utah's 303(d) Vision

The Utah Division of Water Quality (the Division) is committed to engaging the public in establishing priorities for water quality restoration through Total Maximum Daily Load determinations or alternative strategies and protection of existing high quality waters. The process for soliciting public input and how it was used to define the Division's priorities is provided herein.

Prioritizing Utah's 303(d) List

BACKGROUND

In 2013, EPA announced a new framework for implementing the Clean Water Act (CWA) Section 303(d) Program. The new Program Vision is informed by the experience gained over the past two decades in assessing and reporting on water quality and in developing approximately 65,000 TMDLs nationwide. It enhances overall efficiency of the CWA 303(d) Program, encourages focusing on priority waters, and provides States flexibility in using tools in addition to TMDLs to restore and protect water quality.

With the recognition that there is not a "one size fits all" approach to restoring and protecting water resources, Utah has developed tailored strategies to implement its CWA 303(d) Program responsibilities in the context of our water quality goals. While the Vision provides a new framework for implementing the CWA 303(d) Program, it does not alter Utah's responsibilities or authorities under the CWA 303(d) regulations.

SOLICITING INPUT

The intent of soliciting input is to provide an open forum for dialog and involvement among DEQ, other agencies, public, stakeholders, and the regulated community.

The prioritization process has been guided by the Division's mission statement:

"Protect, maintain and enhance the quality of Utah's surface and underground waters for appropriate beneficial uses; and protect the public health through eliminating and preventing water related health hazards which can occur as a result of improper disposal of human, animal or industrial wastes while giving reasonable consideration to the economic impact."

Types of Input

There are many factors to consider in prioritizing waters for restoration and protection including specific waterbodies and/or watersheds, types of water quality impairments, the severity of their impact on beneficial uses, and the different beneficial uses themselves. As a governmental agency responsible to the public for protecting and improving water quality the Division must consider providing the greatest service to the greatest number. Given that time, staff, and funding are limited, the number who can be served is constrained by the availability of these resources. These constraints can be overcome however through partnerships with other governmental agencies and non-governmental organizations to share the work load and move forward to better protect and restore water quality.

The Division must also consider the magnitude of risks to public health and the environment in establishing priorities for protection and restoration. As specifically mentioned in the mission statement above, protecting public health will continue to be a top priority for the Division. This priority translates into many different aspects of Utah's water quality program, including specific designated uses such as drinking source water and recreational use, and specific pollutants that cause impairment such as *E. coli* and heavy metals. Not coincidentally, many water quality problems that threaten public health also impact the ecological health of Utah's waters. Priority for restoration and/or protection should be given where a specific pollutant of concern affects multiple uses to achieve the greatest benefit for the public and the environment.

Finally, priority should be given to water quality concerns that can be addressed with the resources, technologies, and policies available. This can be defined as the "Recovery Potential" for that issue to be corrected.

Outreach

Utah's Watershed Management Program is focused on protecting and restoring the water quality of our streams, lakes and reservoirs and is guided by the direction and feedback received from the Utah Water Quality Taskforce, made up of key stakeholder and partner agency representatives. Since the majority of water quality improvement efforts are driven by the establishment of TMDLs, this group was selected as the most appropriate entity for reviewing draft criteria and waterbodies identified as high priority for TMDL development.

Updates on the 303(d) Vision were provided to the Taskforce throughout the latter part of 2013 into 2014 and a presentation was given on October 7, 2015. Taskforce members, including representatives from the Utah Department of Agriculture and Food, US Forest Service, and Utah State University, provided valuable feedback on how draft priorities are likely to affect their respective programs and were supportive of the criteria used and waterbodies identified for TMDL development by 2022.

Other outreach opportunities included presentations on the 303(d) Vision and prioritization process at the 2014 and 2015 Salt Lake County Watershed Symposium and Utah Watershed Coordinating Council meetings. This document was also posted on DWQ's website and public comment accepted for 30 days during the month of January 2016. Comments were received from Dan Potts with the Salt Lake County Fish and Game Association and Robert Hougaard with the Utah Department of Agriculture and Food. Their comments and responses to them are included at the end of this document in Appendix B. Ongoing outreach on Utah's 303(d) Vision will be through the inclusion of this document in the State of Utah's 2016 Integrated Report.

Stakeholder Survey

DWQ conducted an online survey in April 2015 that was distributed among DWQ's partner agencies, the regulated community, and other stakeholders (Appendix A – Survey Results). A series of questions were posed to gauge respondents' values associated with the uses, benefits, and threats to Utah's surface waters. Feedback was received from 427 respondents with good representation from rural, suburban and urban areas. Survey results however should not be interpreted to reflect the opinions of Utahans as a whole.

Concern about prioritizing beneficial uses was expressed from some respondents who commented that all uses are important (domestic, recreational, wildlife and agricultural) and should receive equal consideration in prioritization. Survey results however indicated that domestic use received the highest ranking, followed by wildlife, agricultural and recreational uses.

Please rank the following uses in order of importance for protection and improvement.

	Most Important	Important	Less Important	Least Important	Total	Weighted Average
Home uses / Drinking water	**71.47%** 278	**20.57%** 80	**6.17%** 24	**1.80%** 7	389	3.62
Wildlife / fisheries uses	**27.14%** 108	**31.91%** 127	**32.91%** 131	**8.04%** 32	398	2.78
Agricultural uses (irrigation and livestock watering)	**6.10%** 23	**33.95%** 128	**27.32%** 103	**32.63%** 123	377	2.14
Recreational uses (swimming, boating, wading)	**2.42%** 10	**18.60%** 77	**31.88%** 132	**47.10%** 195	414	1.76

When asked what other issues should be considered regarding priorities, water conservation and/or de-watering of streams and reservoirs was mentioned more than any other issue. Other concerns raised include endangered species, climate change, protection of headwaters, and grazing.

When asked about specific uses of water, drinking water sources were ranked as very important followed by recreational areas, unique ecosystems, and scenic areas.

How important are the following to you?

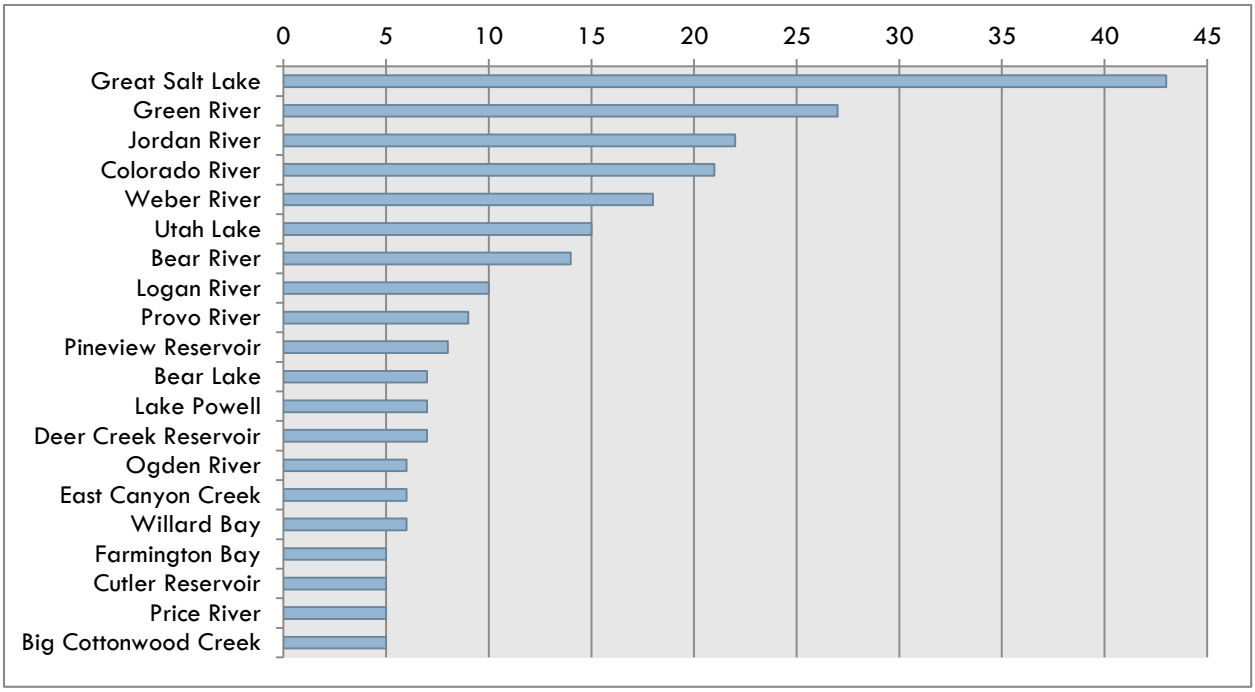
	Very Important	Important	Less Important	Not Important	No opinion	Total	Weighted Average
Sources of Drinking Water	**88.03%** 375	**9.86%** 42	**1.88%** 8	**0.00%** 0	**0.23%** 1	426	3.86
Recreational Areas (State Parks, National Parks, Trails, etc.)	**52.26%** 220	**39.43%** 166	**6.89%** 29	**1.43%** 6	**0.00%** 0	421	3.43
Unique ecosystem (e.g. Great Salt Lake)	**43.74%** 185	**35.93%** 152	**16.31%** 69	**3.78%** 16	**0.24%** 1	423	3.20
Scenic quality	**41.98%** 178	**43.63%** 185	**12.74%** 54	**1.42%** 6	**0.24%** 1	424	3.26
Important Bird Areas (defined by National Audobon Society)	**37.12%** 157	**35.46%** 150	**21.51%** 91	**5.67%** 24	**0.24%** 1	423	3.04
Blue Ribbon Fisheries (see http://wildlife.utah.gov/hotspots/blueribbon.php)	**27.86%** 117	**37.86%** 159	**22.62%** 95	**7.14%** 30	**4.52%** 19	420	2.91
Use of the water for industry and/or agriculture	**26.02%** 108	**41.93%** 174	**24.34%** 101	**6.99%** 29	**0.72%** 3	415	2.88

When asked about specific water quality concerns, toxics and heavy metals were ranked the highest followed by invasive species, litter/debris, bacteria/pathogens and nutrients. Excess algae, salts, and sediment fell within the second tier of somewhat concerned.

How concerned are you about the following types of water quality issues?

	Very concerned	Somewhat concerned	Not concerned	Don't know	Total	Weighted Average
Toxics and heavy metals (e.g. Mercury, Selenium)	**69.25%** 295	**27.23%** 116	**3.05%** 13	**0.47%** 2	426	2.67
Invasive species (e.g. quagga mussel)	**65.80%** 279	**29.48%** 125	**4.01%** 17	**0.71%** 3	424	2.62
Bacteria / Pathogens (E. coli, Giardia)	**58.69%** 250	**34.98%** 149	**5.40%** 23	**0.94%** 4	426	2.54
Litter, debris, trash	**58.73%** 249	**33.96%** 144	**7.08%** 30	**0.24%** 1	424	2.52
Nutrients / low dissolved oxygen (affects fish and other organisms)	**55.16%** 235	**39.91%** 170	**3.52%** 15	**1.41%** 6	426	2.52
Temperature of a stream or lake (affects aquatic life)	**46.59%** 198	**43.29%** 184	**8.71%** 37	**1.41%** 6	425	2.38
Silt / muck (sediment / stream bank erosion)	**38.97%** 166	**49.30%** 210	**10.33%** 44	**1.41%** 6	426	2.29
Salt (affects growth of irrigated plants such as grass, alfalfa, vegetables, etc.)	**35.78%** 151	**52.37%** 221	**10.90%** 46	**0.95%** 4	422	2.25
Pond scum / green slime (Excessive Algae Growth)	**31.60%** 134	**52.83%** 224	**12.74%** 54	**2.83%** 12	424	2.19

Roughly half of those who completed the survey also provided feedback on specific streams, lakes or reservoirs that they had concerns about or felt deserve special consideration. The following chart provides the number of respondents who independently identified each of the listed waterbodies based on their unique ecological, recreational, and/or economic importance.



Finally, respondents were asked to indicate their level of agreement or disagreement with a series of statements designed to help inform the setting of priorities for improvement and protection. Improvement efforts that provide benefits to wildlife and watersheds were strongly favored as well as protection of existing high quality waters. Also supported for consideration in setting priorities was the cost associated with improving water quality and the level of public support.

Please indicate your level of agreement or disagreement with the following statements

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Total	Weighted Average
A water quality project that provides additional benefits to wildlife and watersheds should be considered in prioritizing improvement efforts.	**51.89%** 220	**38.92%** 165	**7.08%** 30	**1.89%** 8	**0.24%** 1	424	4.40
Protecting high quality streams, lakes, and reservoirs should receive the same priority as improving those with problems.	**48.82%** 206	**38.63%** 163	**6.64%** 28	**4.98%** 21	**0.95%** 4	422	4.29
The cost of improving water quality should be considered in prioritizing improvement efforts.	**19.29%** 81	**46.90%** 197	**15.00%** 63	**13.81%** 58	**5.00%** 21	420	3.62
The popularity of a stream, lake, reservoir, etc. should be considered in determining the State's priority for improvement and protection.	**17.37%** 74	**39.44%** 168	**23.71%** 101	**16.20%** 69	**3.29%** 14	426	3.51
A natural water quality issue should be ranked lower in priority than an issue caused by humans.	**16.98%** 72	**40.09%** 170	**20.52%** 87	**16.51%** 70	**5.90%** 25	424	3.46
The amount of public support should be considered in prioritizing improvement efforts.	**8.98%** 38	**43.03%** 182	**30.02%** 127	**15.13%** 64	**2.84%** 12	423	3.40

Summary of Stakeholder Opinion Survey

Survey results were representative of well-educated, citizen stakeholders who are concerned about water quality with a good distribution from urban, suburban and rural areas. However, individuals who identified themselves as associated with agricultural production, commercial/retail, construction/real estate, or manufacturing/industry were not well represented in the survey. Water quality issues that directly affect

these interests were generally identified by respondents as a secondary concern such as the effect of salts on irrigated crops and use of water for industry.

Pollutants and uses that directly affect human health were strongly supported as a priority, particularly toxics, heavy metals, drinking water sources, and important recreational areas. Agricultural uses and wildlife/fisheries uses were also identified as important. Other significant water quality concerns identified by respondents include invasive aquatic species (e.g., Quagga mussel), litter/trash, bacteria/pathogens, and nutrients.

These survey results are helpful in directing the Division of Water Quality's restoration efforts on uses and concerns that most directly affect the health and quality of citizen's lives. Respondents strongly supported the prioritization of projects that benefit multiple uses and broader watershed areas as well as protecting existing high quality waters.

Water Quality Board review and input

The Utah Water Quality Board guides the development of water quality policy and regulations within the state and played an important role in reviewing the 303(d) Vision approach. The Utah Division of Water Quality is the administrative arm of the board. The Board's makeup is defined by statute in the Utah Code, Section 19-5-103, and is designed to represent various interest groups of the water quality community.

Presentations of the 303(d) Vision were provided to the Board on January 28, 2015 and September 23, 2015. The first presentation focused on providing background information on what the 303(d) program is and its history in regard to TMDL development. The second presentation focused on the considerations and criteria used to define Utah's priority impaired waters for TMDL study.

The Board was supportive of the approach presented, particularly with the linkage of priorities to the Division's mission to "… protect the public health through eliminating and preventing water related health hazards…" The draft list of priority waters was provided at the September meeting (included below) with no comments or concerns raised by Board members.

SELECTING AND APPLYING CRITERIA

Priority was given foremost to impaired waters on the 303(d) list that have the potential to negatively affect human health. Consideration was also given to specially designated waters with impairments that directly affect their use. Drinking water sources and high use recreational areas such as state and federal parks were factored in evaluating the potential for an impaired waterbody to affect human health. Toxic pollutants, metals (arsenic and cadmium), and the bacterium *E. coli* were identified as a particular concern for human health.

Excess nutrients and the attendant water quality problems they cause were also considered a priority for TMDL study due to their long term and widespread impact to downstream waters, including ecological degradation and human health risks associated with harmful algal blooms. If aquatic life impairment occurs in a waterbody designated as a Blue-Ribbon Fishery by the Utah Blue Ribbon Fisheries Advisory Council or Important Bird Area it would also receive priority status for study.

Finally, considering critical permitting issues and ongoing TMDL study efforts, several impaired waters were identified as a priority for development and completion within the next seven years.

High Priority Factors			
Waterbody Characteristics	**Pollutants**	**Impaired Uses**	**Pollutant Sources**
Drinking Water Source National Park or State Park High Recreational Use Blue Ribbon Fishery Important Bird Areas Permit Administration Ongoing study	Toxics Metals Bacteria DO Nutrients linked to harmful algal blooms	Drinking Water Recreation Aquatic Life	Combination of Point and Nonpoint sources

All remaining waterbodies that were not identified as a high priority for TMDL development were then placed in the low priority category by default. Causes of impairments associated with this category are generally associated with habitat degradation and hydrologic modifications, natural sources, or diffuse watershed-scale issues. These are typically very difficult to quantify and best addressed initially through locally-led watershed planning and restoration efforts.

Aquatic life beneficial uses established to protect fisheries and waterfowl habitat are affected by exceedances of criteria set for temperature, pH, and sediment. Elevated pH levels are often associated with nutrient enrichment due to algal consumption of carbon dioxide from the water column. If elevated pH levels are not associated with excess nutrients and algal production it is considered a low priority for TMDL development. While these issues are difficult to address, the Division of Water Quality and its many partner organizations and agencies are committed to continually improving watershed health using adaptive management principles.

Low Priority Factors		
Waterbody Characteristics	**Pollutants**	**Pollutant Sources**
Habitat Degraded Hydrologically Modified Best addressed initially through locally-led watershed restoration efforts	Temperature pH Sediment	Nonpoint and/or natural sources only

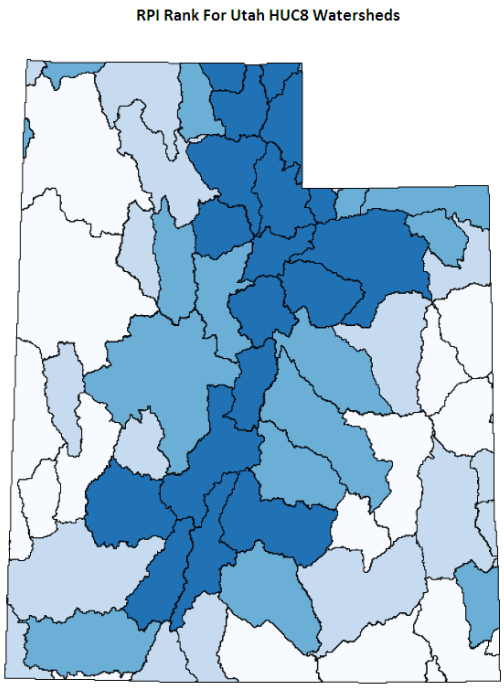
Finally, alternatives to TMDL development were identified for those waterbodies that have: previously been identified as candidates for Category 4C designation as defined under 40 CFR 131.10(g); where an existing or related TMDL is already in place; where natural sources of pollutants warrant developing site specific critiera; where implementation is already taking place to address the pollutant of concern; and where the source of pollutants is, or has the potential to be, addressed through other programs such as the Salinity Control Program within the Colorado River basin. The effectiveness of these large scale and long term efforts has recently been observed in decreasing salt concentrations in the lower Duchesne River. The Division expects to see the same improvements in other areas that have more recently implemented Salinity Control projects and are very supportive of continuing this important program for the benefit of Utah and its downstream neighbors.

Alternative Factors			
Watebody Characteristic	**Pollutant**	**Impaired Use**	**Pollutant Sources**
Source addressed by other program (e.g., Salinity Control Forum, CERCLA, etc.)	TDS Metals / CERCLA	Agriculture	Nonpoint and/or natural sources only

Recovery Potential

A Recovery Potential tool was developed to evaluate several different social and environmental factors and determine the potential for correcting or preventing a water quality problem (see http://www.epa.gov/rps for details). The tool was useful in identifying the opportunities and challenges for restoring water quality on a statewide scale but the results are too coarse to reliably factor into priority setting for specific impaired waters. While this tool is helpful for discerning broad scale attributes it is currently limited by the number and type of ranking factors available to select from within the tool.

An initial application of this tool on Hydrologic Unit Code 8 watersheds (HUC8) is shown on the map below using: the number of days with measurable precipitation; percent of watershed classified as unstable; percent of impaired waters within the watershed; soil erosion potential; acre feet of diversions; population; drinking water sources; recreational waters; and number of Total Maximum Daily Load studies completed. The darker color HUC8 watersheds on the map are those that have a higher recovery potential score based on these factors. These scores were then transferred into the priority ranking spreadsheet described below.



Recovery Potential for HUC8 watersheds in Utah

This tool can be easily expanded in the future to include new sources of data and modified to evaluate alternative scenarios. For more information please see

http://www.epa.gov/rps

Applying Criteria

All of the criteria for prioritizing impaired waters described above were combined into a spreadsheet using the results of GIS analysis including land uses, special management designations, location of permitted facilities, the Recovery Potential tool, and other sources of publicly available information. A weight of evidence approach was then used to identify impaired waterbodies as a priority for TMDL study. For example, if a waterbody was identified as having a human health impairment within a high recreational use area, as is the case for *E. coli* in the North Fork of the Virgin River, it would rank higher than an *E. coli* impairment on a waterbody that does not fall within or above a high recreational use area such as the Duchesne River below Myton. The following table includes the priority waterbodies along with a brief rationale on why it was designated as such. This list is subject to change based on new information collected or provided to the Division of Water Quality.

HIGH PRIORITY IMPAIRED WATERS FOR TMDL DEVELOPMENT BY 2022

WATERBODY NAME	IMPAIRMENT	RATIONALE FOR PRIORITY DESIGNATION
Nine Mile Creek	Temperature	TMDL in Progress
Jordan River-1, 2, and 3	Diss. Oxygen	TMDL in Progress; Important Fishery
Jordan River-1, 2, 3, 4 and 5	*E. coli*	High recreational use
Utah Lake	Phosphorus	History of Harmful Algal Blooms; High recreational

WATERBODY NAME	IMPAIRMENT	RATIONALE FOR PRIORITY DESIGNATION
		use; Important Fishery; Tributary to Jordan River
Mill Creek-1 and 3 (SL City)	*E. coli*	Tributary to Jordan River *E. coli* impairment; High recreational use
Big Cottonwood Creek-1	*E. coli*	Tributary to Jordan River *E. coli* impairment; High recreational use
Little Cottonwood Creek-1	*E. coli*, TDS	Tributary to Jordan River *E. coli* impairment; High recreational use
Emigration Creek Lower	*E. coli*	Tributary to Jordan River *E. coli* impairment; High recreational use
Parleys Canyon Creek-1	*E. coli*	Tributary to Jordan River *E. coli* impairment; High recreational use
Butterfield Creek	*E. coli*	Tributary to Jordan River *E. coli* impairment
Rose Creek	*E. coli*	Tributary to Jordan River *E. coli* impairment
Fremont River-3	*E. coli*	Drinking water source; High recreational use (Capitol Reef NP)
North Fork Virgin River-1 and 2	*E. coli*	Drinking water source; High recreational use (Zion NP)
Jordan River-8	Arsenic	Drinking water source
Silver Creek	TDS	Impairment significantly affects construction design of new Silver Creek Water Reclamation Facility
Provo River-4	*E. coli*	Drinking water source; High recreational use
Provo River-6	Aluminum, Zinc	Drinking water source
Snake Creek-1	Arsenic	Drinking water source
City Creek-2	Cadmium	Drinking water source; High Quality Category 1 Water
Starvation Reservoir	Diss. Oxygen	History of Harmful Algal Blooms; Drinking Water source; Important Fishery
Lower Bowns Reservoir	Diss. Oxygen, Phosphorus	High Quality Category 1 Water

Resource evaluation

Completion of the 32 waterbody/pollutant combination TMDL studies identified as a priority by 2022 will require significant staff and contractual resources. While several of these studies are anticipated to be developed by Division staff only, contractual assistance will be needed to provide specialized technical expertise and analyses not available through existing resources. These costs will be budgeted on an annual basis based on need and the amount of funding assistance provided from local, state, and federal partners.

ALTERNATIVE APPROACHES FOR ADDRESSING IMPAIRED WATERS

The 303(d) Program Vision promotes the identification of alternative approaches to TMDL development for impaired waters where these approaches would result in a more rapid attainment of water quality standards. The alternatives identified below include: "4C candidates," waterbodies impaired by causes that cannot be addressed by a TMDL such as hydrologic and habitat modification as defined under 40 CFR 131.10(g); waterbodies impaired by Total Dissolved Solids that fall within the auspices of the Colorado River Basin Salinity Control Program; impaired waters that have existing TMDLs in place for related parameters and are thus already being addressed; impairments that are the result of natural uncontrollable pollutant sources and hence require development of site specific standards; and impaired waters that have taken a straight to implementation approach through ongoing watershed implementation activities.

WATERBODY NAME	IMPAIRMENT	ALTERNATIVE APPROACH
Manning Meadow Reservoir	Oxygen, Dissolved	4C candidate
Manning Meadow Reservoir	Phosphorus (Total)	4C candidate
Tony Grove Lake	Oxygen, Dissolved	4C candidate
Mill Hollow Reservoir	Phosphorus (Total)	4C candidate
Big East Lake	Oxygen, Dissolved	4C candidate
Big East Lake	Phosphorus (Total)	4C candidate
Lower Gooseberry Reservoir	Oxygen, Dissolved	4C candidate
Lower Gooseberry Reservoir	Phosphorus (Total)	4C candidate
Navajo Lake	Oxygen, Dissolved	4C candidate
Bridger Lake	Oxygen, Dissolved	4C candidate
China Lake	Oxygen, Dissolved	4C candidate
Lyman Lake	Oxygen, Dissolved	4C candidate
Yankee Meadow Reservoir	Oxygen, Dissolved	4C candidate

WATERBODY NAME	IMPAIRMENT	ALTERNATIVE APPROACH
Green River-2 Tribs	Total Dissolved Solids	Colorado River Salinity Control Program
Price River-3	Total Dissolved Solids	Colorado River Salinity Control Program
Fremont River-3	Total Dissolved Solids	Colorado River Salinity Control Program
Ashley Creek Lower	Total Dissolved Solids	Colorado River Salinity Control Program
Middle Ashley Creek	Total Dissolved Solids	Colorado River Salinity Control Program
Gordon Creek	Total Dissolved Solids	Colorado River Salinity Control Program
Birch Spring Draw	Total Dissolved Solids	Colorado River Salinity Control Program
Huntington Creek-2	Total Dissolved Solids	Colorado River Salinity Control Program
Virgin River-2	Total Dissolved Solids	Colorado River Salinity Control Program
Pack Creek	Total Dissolved Solids	Colorado River Salinity Control Program
Professor Creek	Total Dissolved Solids	Colorado River Salinity Control Program
Muddy Creek Upper	Total Dissolved Solids	Colorado River Salinity Control Program
Ivie Creek Upper	Total Dissolved Solids	Colorado River Salinity Control Program
Johnson Wash-1	Total Dissolved Solids	Colorado River Salinity Control Program
Johnson Wash-2	Total Dissolved Solids	Colorado River Salinity Control Program
Paria River-1	Total Dissolved Solids	Colorado River Salinity Control Program
Virgin River-1	Total Dissolved Solids	Colorado River Salinity Control Program
San Juan River-1 Tributaries	Total Dissolved Solids	Colorado River Salinity Control Program
Weber River-8	Oxygen, Dissolved	Existing or Related TMDL in place (Rockport Reservoir TMDL)
Clay Slough	Oxygen, Dissolved	Existing or Related TMDL in place (Middle Bear River TMDL)
Clay Slough	pH	Existing or Related TMDL in place (Middle Bear River TMDL)
Chalk Creek3-Coalville	Direct Habitat Alterations	Existing or Related TMDL in place (Chalk Creek TMDL)
Otter Creek-2	Oxygen, Dissolved	Existing or Related TMDL in place (Otter

WATERBODY NAME	IMPAIRMENT	ALTERNATIVE APPROACH
		Creek TMDL)
East Canyon Creek-2	Bioassessments	Existing or Related TMDL in place (East Canyon Creek TMDL)
East Canyon Creek-2	Temperature, water	Existing or Related TMDL in place (East Canyon Creek TMDL)
Otter Creek Reservoir	pH	Existing or Related TMDL in place (Otter Creek Reservoir TMDL)
East Fork Sevier-2	Bioassessments	Existing or Related TMDL in place (East Fork Sevier River TMDL)
Fort Pearce Wash	Total Dissolved Solids	Existing or Related TMDL in place (Virgin River TMDL)
Kanab Creek-1 and 2	Total Dissolved Solids	Site Specific Standard Development
Indian Canyon Creek	Total Dissolved Solids	Site Specific Standard Development
Antelope Creek	Total Dissolved Solids	Site Specific Standard Development
Kane Spring Wash	Total Dissolved Solids	Site Specific Standard Development
Quitchipah Creek Lower	Total Dissolved Solids	Site Specific Standard Development
Saleratus Creek-Emery	Total Dissolved Solids	Site Specific Standard Development
Westwater Creek	Total Dissolved Solids	Site Specific Standard Development
Comb Wash	Total Dissolved Solids	Site Specific Standard Development
Paria River-2	Total Dissolved Solids	Site Specific Standard Development
Paria River-3	Total Dissolved Solids	Site Specific Standard Development
Bitter Creek Lower	Total Dissolved Solids	Site Specific Standard Development
Bitter Creek Upper	Total Dissolved Solids	Site Specific Standard Development
Evacuation Creek	Total Dissolved Solids	Site Specific Standard Development
Wahweap Creek	Total Dissolved Solids	Site Specific Standard Development
Chance Creek	Total Dissolved Solids	Site Specific Standard Development
San Pitch-1	Total Dissolved Solids	Site Specific Standard Development

WATERBODY NAME	IMPAIRMENT	ALTERNATIVE APPROACH
Blue Creek-Golden Spike	Total Dissolved Solids	Site Specific Standard Development
Lost Creek1-Salina	Total Dissolved Solids	Site Specific Standard Development
Jordan River-4	Total Dissolved Solids	Site Specific Standard Development
Jordan River-5	Total Dissolved Solids	Site Specific Standard Development
Jordan River-6	Total Dissolved Solids	Site Specific Standard Development
Butterfield Creek	Selenium	Site Specific Standard Development
Butterfield Creek	Total Dissolved Solids	Site Specific Standard Development
Utah Lake	Total Dissolved Solids	Site Specific Standard Development
Jordan River-8	Total Dissolved Solids	Site Specific Standard Development
Chicken Creek-2	Total Dissolved Solids	Site Specific Standard Development
Ivie Creek Lower	Total Dissolved Solids	Site Specific Standard Complete, new assessment required
Huntington Creek-1	Selenium	Straight to implementation (Colorado Salinity Control Program)
Dolores River	Total Dissolved Solids	Straight to implementation (Colorado Salinity Control Program – Paradox Valley, CO)
Strawberry River-3	Bioassessments	Straight to implementation (Blue Ribbon Fishery)
Kimball Creek	Bioassessments	Existing or Related TMDL in place (East Canyon Creek TMDL)
Silver Creek	Oxygen, Dissolved	Straight to implementation (Silver Creek Natural Resource Damage Assessment and Restoration Program)
Silver Creek	Nitrate/Nitrite (Nitrite + Nitrate as N)	Straight to implementation (Silver Creek NRDA and Restoration Program)
Main Creek-1	Escherichia coli	Straight to implementation (Wallsburg Coordinated Resource Management Plan)
Pelican Lake	Phosphorus (Total)	Straight to implementation (Pelican Lake Fishery Management Plan)
Pelican Lake	pH	Straight to implementation (Pelican Lake

WATERBODY NAME	IMPAIRMENT	ALTERNATIVE APPROACH
		Fishery Management Plan)

IMPLEMENTATION PRIORITIES

Priority for implementation planning and funding are where TMDLs have been completed and/or detailed watershed plans have been developed that incorporate all nine elements of a watershed plan. The Division has also instituted a targeted funding cycle approach to focus limited funding on watershed management units that coincides with the six year intensive monitoring cycle to allow for pre- and post-project data collection. The combination of prioritization criteria and targeted funding has greatly improved the quality and effectiveness of water quality improvement projects and has facilitated the involvement of partner agencies in dedicating financial and technical resources to watershed restoration efforts. The following list of impaired waters listed in geographic order from north to south are where implementation efforts are ongoing or planned in the near future to reduce pollutant loading from nonpoint sources. It should be noted this is not a definitive list of all impaired waters or the only areas where nonpoint source implementation efforts are anticipated to occur. As additional watershed restoration efforts get underway and plans are completed the list of ongoing and planned implementation efforts will grow as well.

IMPAIRED WATER	WATERSHED UNIT
Upper Bear River and tributaries	Bear River
Middle Bear River and tributaries including Cutler Reservoir	Bear River
Lower Bear River and tributaries including Mantua Reservoir	Bear River
Upper Ogden River and tributaries including Pineview Reservoir	Weber River
Upper Weber River and tributaries including Rockport, Echo, and East Canyon Reservoirs	Weber River
Jordan River and tributaries	Jordan River/Utah Lake
Upper Provo River and tributaries including Deer Creek Reservoir	Jordan River/Utah Lake
Utah Lake and tributaries	Jordan River/Utah Lake
Duchesne River and tributaries including Strawberry Reservoir	Uinta Basin
Matt Warner Reservoir and tributaries	Uinta Basin
Nine Mile Creek and tributaries	Uinta Basin
Price River and tributaries including Scofield Reservoir	West Colorado
San Rafael River and tributaries including Huntington Creek	West Colorado

IMPAIRED WATER	WATERSHED UNIT
Middle Sevier River and tributaries including San Pitch River	Sevier
Mill Creek, Pack Creek, and Montezuma Creek	Southeast Colorado
Upper Sevier River and tributaries including Otter Creek, Otter Creek Reservoir, and Koosharem Reservoir	Sevier
Fremont River and tributaries including Johnson Valley Reservoir, Mill Meadow Reservoir, and Forsyth Reservoir	West Colorado
Beaver River and tributaries including Minersville Reservoir	Cedar/Beaver
Pinto Creek including Newcastle Reservoir	Cedar/Beaver
Virgin River and tributaries	Lower Colorado

PROTECTION

Protection of existing high quality waterbodies from future impairments is a priority for Utah. Due to physiography of the state, the majority of perennial streams and natural lakes are found within Utah's National Forests the Uinta/Wasatch/Cache, Ashley, Manti-LaSal, Fishlake, and Dixie. All waters within the outer boundaries of National Forests are designated as anti-degradation Category 1 where point source discharges of wastewater are prohibited (UAC R317-2-3). Protections from pathogens associated with septic systems are addressed in rules for Onsite Wastewater Disposal Systems (R317-4) and other nonpoint sources shall be controlled to the extent feasible through implementation of best management practices.

The Division works closely with the U.S. Forest Service to ensure management practices align with water quality protection goals through a cooperative monitoring program and annual consistency reviews conducted in the field. In addition, Division staff regularly provides technical review of projects through 401 certifications and resource concerns in consultation with forest hydrologists and other federal staff.

Source water protection zones identified by the Division of Drinking Water are also a high priority for protection. Given the protected status of their location and critical importance to the local communities they serve, protection efforts are conducted primarily at the local level through watershed planning efforts in coordination with drinking water providers and other local, state, and federal partners. The Division leads one of these efforts that serves a large proportion of the state's population in the Provo River watershed and actively participates in several other watershed committees focused on protecting source water protection zones within the Weber and Jordan River watersheds.

The Great Salt Lake is also identified as a priority for protection due in part to its critical ecological importance to the millions of birds who depend on the Lake's resources and its vital economic importance, contributing over $1billion to Utah's economy each year from industry and recreation. The Division developed *A Great Salt Lake Water Quality Strategy* that reflects the lake's unique characteristics and special importance to Utah (http://www.deq.utah.gov/locations/G/greatsaltlake/gslstrategy/docs/2014/09Sep/Overview_GSL_WQ_Strategy.pdf). The strategy for protection for the lake includes developing numeric water quality criteria for

the protection of the aquatic life and recreational designated uses, improving water quality monitoring and prioritizing research, implementing a plan to monitor and assess the Lake's wetland water quality, and implementing a plan to assess nutrients.

NEXT STEPS

Putting Utah's 303(d) Vision into action will require the continued leadership of the Division and coordination of efforts among many local interests and partner agencies. Utah's Watershed Approach for planning, improvement and protection efforts has worked well in fostering local leadership and partner participation for water quality and will continue to guide how the Division administers its Nonpoint Source and TMDL programs. Financial and technical resource limitations will periodically require temporary shifts in assignments among staff within the Division but it will be important to maintain existing relationships with local committees and partner agencies to the extent possible.

Engaging key stakeholders, the Utah Water Quality Board, and other water quality partners on 303(d) priorities has been fruitful in communicating the challenges and opportunities Utah has for improving and protecting water quality. There are water quality issues on the 303(d) list that we cannot address through existing regulatory and voluntary programs due to unalterable natural conditions. Identifying and communicating which issues can be addressed and those that cannot has been very beneficial in setting realistic expectations and in ensuring resources are invested where benefits are most likely to be achieved. As more information is gathered through monitoring, implementation, and site specific studies the alternative approaches identified above are subject to change and will be updated during each Integrated Report cycle.

The priority waters identified for TMDL development will be grouped together based on location and impairment and scheduled based on the need for additional data and analysis as follows:

WATERSHED TMDL	IMPAIRMENTS	WATERBODIES	YEAR OF TMDL COMPLETION
Nine Mile Creek	Temperature	Nine Mile Creek	2016
Fremont River	*E. coli*	Fremont River-3	2017
Silver Creek	Total Dissolved Solids	Silver Creek	2018
Provo River	Aluminum, Zinc	Provo River-6	2018
	Arsenic	Snake Creek-1	
	Dissolved Oxygen	Provo River-3	
	E. coli	Provo River-4	
North Fork Virgin River	*E. coli*	North Fk Virgin River-1, 2	2019
Starvation Reservoir	Dissolved Oxygen	Starvation Reservoir	2019
Jordan River	Arsenic	Jordan River-8	2019
	Cadmium	City Creek-2	

WATERSHED TMDL	IMPAIRMENTS	WATERBODIES	YEAR OF TMDL COMPLETION
Jordan River	Dissolved Oxygen	Jordan River-1, 2, 3	2020
Lower Bowns Reservoir	Dissolved Oxygen, pH	Lower Bowns Reservoir	2021
Utah Lake	Phosphorus	Utah Lake	2022
Jordan River	*E. coli*	Jordan River-1, 2, 3, 4, 5 Mill Creek 1, 2 Big Cottonwood Creek-1 Little Cottonwood Creek-1 Emigration Creek Lower Parleys Canyon Creek-1 Butterfield Creek Rose Creek	2022

APPENDIX A – SURVEY RESULTS

Utah's Surface Water Quality Priorities

Monday, February 29, 2016

427

Total Responses

Date Created: Wednesday, April 22, 2015

Complete Responses: 427

Q1: How important are the following to you?

	Very Important	Important	Less Important	Not Important	No opinion	Total	Weighted Average
Sources of Drinking Water	**88.03%** 375	**9.86%** 42	**1.88%** 8	**0.00%** 0	**0.23%** 1	426	3.86
Recreational Areas (State Parks, National Parks, Trails, etc.)	**52.26%** 220	**39.43%** 166	**6.89%** 29	**1.43%** 6	**0.00%** 0	421	3.43
Unique ecosystem (e.g. Great Salt Lake)	**43.74%** 185	**35.93%** 152	**16.31%** 69	**3.78%** 16	**0.24%** 1	423	3.20
Scenic quality	**41.98%** 178	**43.63%** 185	**12.74%** 54	**1.42%** 6	**0.24%** 1	424	3.26
Important Bird Areas (defined by National Audobon Society)	**37.12%** 157	**35.46%** 150	**21.51%** 91	**5.67%** 24	**0.24%** 1	423	3.04
Blue Ribbon Fisheries (see http://wildlife.utah.gov/hotspots/blueribbon.php)	**27.86%** 117	**37.86%** 159	**22.62%** 95	**7.14%** 30	**4.52%** 19	420	2.91
Use of the water for industry and/or agriculture	**26.02%** 108	**41.93%** 174	**24.34%** 101	**6.99%** 29	**0.72%** 3	415	2.88

Q2: How concerned are you about the following types of water quality issues?

	Very concerned	Somewhat concerned	Not concerned	Don't know	Total	Weighted Average
Toxics and heavy metals (e.g. Mercury, Selenium)	**69.25%** 295	**27.23%** 116	**3.05%** 13	**0.47%** 2	426	2.67
Invasive species (e.g. quagga mussel)	**65.80%** 279	**29.48%** 125	**4.01%** 17	**0.71%** 3	424	2.62
Bacteria / Pathogens (E. coli, Giardia)	**58.69%** 250	**34.98%** 149	**5.40%** 23	**0.94%** 4	426	2.54
Litter, debris, trash	**58.73%** 249	**33.96%** 144	**7.08%** 30	**0.24%** 1	424	2.52
Nutrients / low dissolved oxygen (affects fish and other organisms)	**55.16%** 235	**39.91%** 170	**3.52%** 15	**1.41%** 6	426	2.52
Temperature of a stream or lake (affects aquatic life)	**46.59%** 198	**43.29%** 184	**8.71%** 37	**1.41%** 6	425	2.38
Silt / muck (sediment / stream bank erosion)	**38.97%** 166	**49.30%** 210	**10.33%** 44	**1.41%** 6	426	2.29
Salt (affects growth of irrigated plants such as grass, alfalfa, vegetables, etc.)	**35.78%** 151	**52.37%** 221	**10.90%** 46	**0.95%** 4	422	2.25
Pond scum / green slime (Excessive Algae Growth)	**31.60%** 134	**52.83%** 224	**12.74%** 54	**2.83%** 12	424	2.19

Q3: Which of the following have you visited and/or used within the last 5 years? Please check all that apply.

Answer Choices	Responses	
Lakes and Reservoirs	**96.94%**	412
Rivers and Streams	**97.41%**	414
Canals / Ditches	**62.59%**	266
Marshes / Springs / Wet Meadows	**76.47%**	325
Great Salt Lake	**65.18%**	277
None	**0.71%**	3
Total Respondents: 425		

Q4: Are there specific streams, lakes, or reservoirs that deserve special consideration? Please be as specific as possible including nearby landmarks, road crossings, etc.

Q5: Please indicate your level of agreement or disagreement with the following statements:

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Total	Weighted Average
A water quality project that provides additional benefits to wildlife and watersheds should be considered in prioritizing improvement efforts.	**51.89%** 220	**38.92%** 165	**7.08%** 30	**1.89%** 8	**0.24%** 1	424	4.40
Protecting high quality streams, lakes, and reservoirs should receive the same priority as improving those with problems.	**48.82%** 206	**38.63%** 163	**6.64%** 28	**4.98%** 21	**0.95%** 4	422	4.29
The cost of improving water quality should be considered in prioritizing improvement efforts.	**19.29%** 81	**46.90%** 197	**15.00%** 63	**13.81%** 58	**5.00%** 21	420	3.62
The popularity of a stream, lake, reservoir, etc. should be considered in determining the State's priority for improvement and protection.	**17.37%** 74	**39.44%** 168	**23.71%** 101	**16.20%** 69	**3.29%** 14	426	3.51
A natural water quality issue should be ranked lower in priority than an issue caused by humans.	**16.98%** 72	**40.09%** 170	**20.52%** 87	**16.51%** 70	**5.90%** 25	424	3.46
The amount of public support should be considered in prioritizing improvement efforts.	**8.98%** 38	**43.03%** 182	**30.02%** 127	**15.13%** 64	**2.84%** 12	423	3.40

Q6: Please rank the following uses in order of importance for protection and improvement.

	Most Important	Important	Less Important	Least Important	Total	Weighted Average
Home uses / Drinking water	**71.47%** 278	**20.57%** 80	**6.17%** 24	**1.80%** 7	389	3.62
Wildlife / fisheries uses	**27.14%** 108	**31.91%** 127	**32.91%** 131	**8.04%** 32	398	2.78
Agricultural uses (irrigation and livestock watering)	**6.10%** 23	**33.95%** 128	**27.32%** 103	**32.63%** 123	377	2.14
Recreational uses (swimming, boating, wading)	**2.42%** 10	**18.60%** 77	**31.88%** 132	**47.10%** 195	414	1.76

Q7: Are there other issues that the State should consider regarding priorities?

Q8: Which group(s) do you associate yourself with?

Answer Choices	Responses	
Advocacy group	**11.27%**	47
Concerned Citizen	**58.75%**	245
Education	**21.58%**	90
Federal agency	**10.55%**	44
Municipality or other local government	**22.78%**	95
Private sector business interest	**11.51%**	48
Research	**17.75%**	74
State agency	**24.22%**	101
Total Respondents: 417		

Q9: What's your role with that group?

Answer Choices	Responses	
Agricultural producer	**4.24%**	16
Advocacy	**12.73%**	48
Commercial / Retail	**2.92%**	11
Construction / Real Estate	**2.92%**	11
Consulting	**10.34%**	39
Engaged community member	**34.48%**	130
Manufacturing / Industry	**1.59%**	6
Natural Resource Management	**32.36%**	122
Permitting / Regulatory	**14.85%**	56
Planning	**15.38%**	58
Recreational Water User	**28.38%**	107
Scientific Research	**26.26%**	99
Teacher	**13.53%**	51
Total Respondents: 377		

Q10: If your group has a water quality permit please indicate which. Mark "Not Applicable" if this doesn't apply to you.

Answer Choices	Responses	
Not Applicable	**77.78%**	294
CAFO (general permit)	**0.00%**	0
Construction UPDES permit	**4.50%**	17
Groundwater	**4.23%**	16
Individual Municipal UPDES permit	**8.47%**	32
Individual Industrial UPDES permit	**2.38%**	9
Operating Permit	**4.23%**	16
Other general permit	**3.44%**	13
Pesticide (general permit)	**1.32%**	5
Stormwater (MS4) UPDES permit	**10.85%**	41
Underground Injection Control	**1.85%**	7
401 Water Quality Certification	**1.59%**	6
Total Respondents: 378		

Q11: Which of the following best describes the area you live in?

Answer Choices	Responses	
Rural	**26.24%**	111
Suburban	**39.95%**	169
Urban	**32.15%**	136
Would rather not say	**1.65%**	7
Total		**423**

Q12: What is your 5 digit zip code? If you'd rather not say please leave the field blank.

Q13: What is the highest level of school you've completed?

Answer Choices	Responses	
Some high school, no diploma	**0.24%**	1
High school graduate, diploma or the equivalent (for example: GED)	**1.89%**	8
Trade/technical/vocational training	**3.78%**	16
Associate degree	**4.73%**	20
Bachelor's degree	**39.24%**	166
Post-graduate degree	**47.52%**	201
Would rather not say	**2.60%**	11
Total		**423**

APPENDIX B – RESPONSE TO COMMENTS

Comment received from Mr. Dan Potts, Salt Lake County Fish and Game Association

Mr. Adams,

In short the SLCF&GA, again, thinks that water quality has missed the boat on the whole relationship of beneficial use versus the edibility of Utah's freshwater food fish. Your survey did NOT allow for comments relating to the relationship between (mostly) phosphorus and resulting off-flavor in our fish. Most people get the whole drinking water thing, but few understand why the taste and texture of the fish they catch is as good as is should be. They are often confused because sometimes the fish they catch out a specific water sometimes taste great, and other times not.

We were unable to locate any real reference to what we think is a VERY important issue, the relationship between phosphorus and off-flavor in fish. Anglers can easily detect off-flavors (usually geosmyn), which not only give fish a musty-muddy flavor, but can also make the flesh mushy; not something anyone wants to eat! It is notable that by late summer/fall that most of the fish in Utah's lakes have some degree of off-flavor. It is also notable that most anglers in the state harvest fish for food, especially those fishing in lakes where off-flavor is most likely to be a problem. Just because we might be able to keep fish alive through appropriate temperatures, oxygen, pH, e-coli, etc., those parameter alone ONLY become valuable for mandatory "catch-and-release" fisheries, otherwise, high levels of phosphorus can generate algal blooms that cause off-flavor issues from year to year in the vast majority of Utah's fisheries. We think this lack of proper focus on this issue can result in a SIGNIFICANT reduction in the beneficial (angling) use of many valuable fisheries.

We think that TMDL successes (reductions in fish off-flavors) for the likes of Deer Creek and Strawberry reservoirs clearly demonstrate just how effective reductions in phosphorus can be. Both water bodies experienced higher rates of off-flavor previous to efforts to reduce phosphorus inputs. As a contrast, even though Utah Lake's total (and stored) phosphorus is literally "off-the-chart", we have not seen that reflected in off-flavor for decades. We suspect that the phosphorus, regardless of its concentrations in this EXTREMELY large, shallow, windswept lake, are not being realized as algal blooms due to some relationship with the lake's constant turbidity. Because the phosphorus "sink" in Utah Lake is so huge we see little point in expending large amounts of resources (=money) to attempt to reduce "unreducable" phosphorus that only rarely compromises the lake's beneficial uses, which is not reflected in the Water Quality's current high priority list. We think the real problem is more of a perception than a reality, and that other waters that have greater compromised beneficial uses should be higher on the list.

Bottom line: We do not agree with the characterization of beneficial uses relative to off-flavor/phosphorus issues, and that the public really does not understand that relationship well enough to adequately respond to your previous survey, upon which the draft document is largely based.

Division of Water Quality Response

Dear Mr. Potts, thank you for your comments and insight into a water quality related problem that the Division of Water Quality recognizes and relies on the public to identify and bring to our attention. While there are several analytical methods for evaluating the effects of nutrient enrichment on water quality, palatability is a qualitative measure for assessing its effect on an important beneficial use. Per Utah's 303(d) Assessment Methodology, complaints and comments from the public are one of the types of information used for making assessment decisions. Salt Lake County Fish and Game Association and others engaged in angling are encouraged to formally submit concerns associated with off-flavor on specific waterbodies during DWQ's bi-ennial call for data and information from the public.

Comment received from Mr. Robert L. Hougaard, Utah Department of Agriculture and Food

State of Utah

GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

Department of Agriculture and Food

LUANN ADAMS
Commissioner

SCOTT ERICSON
Deputy Commissioner

February 5, 2016

Division of Water Quality
Attn: Erica Gaddis
Multi Agency State Office Building
195 North 1950
Salt Lake City, Utah

Subject- Prioritizing Utah's 303(D) List

Dear Ms. Gaddis:

The Utah Department of Agriculture and Food (UDAF) has reviewed the Prioritizing Utah's 303(d) List. We appreciate the opportunity to be involved in the process. UDAF is a partner with DWQ in helping to protect the state's water. UDAF is uniquely qualified to assist in this effort. UDAF has members serving on the Water Quality Taskforce. We also direct the efforts of the 38 conservation districts and the Utah Conservation Commission. Furthermore, UDAF has responsibility for the management of the Colorado River Basin Salinity Control Program which is vital to helping certain waterbodies. UDAF recognizes the limited resources the division has available and the need to prioritize those resources. After careful review of DWQ Prioritizing Utah's 303(D) List we have the following suggestions and comments.

UDAF question the validity of the survey used to prioritize the water bodies. The purpose of the survey was to take an unbiased cross section of stakeholders in the state.[1] The results were then used to create this list of priorities. The document states that there was a good representation from rural Utah; however, there are no numbers showing the breakdown of participants.[2] UDAF believes that the survey was targeted towards people who supported environmental issues with very limited representation by rural Utah and the agriculture community. This bias is shown in the list of priority waterbodies selected and how DWQ prioritized beneficial uses. It would be beneficial to show the demographics of those who took the survey and then weight the information accordingly.

UDAF understands the need to address waterbodies which are impaired. We further understand that DWQ is required to do a TMDL within 12 years after a waterbody is listed.

[1] Prioritizing Utah's 303(d) List, Soliciting Input, pg. 1.
[2] Prioritizing Utah's 303(d) List, Summary of Stakeholder Opinion Survey, pg. 6.

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While TMDL's are a useful tool which should be used to improve water quality, UDAF supports the alternative approach discussed in the vision. The approach would involve the community partners as well as other agencies to assist in the development of priorities as well as to propose solutions. This approach has been shown to overcome many of the obstacles which prevent the repair of impaired waterbodies. DWQ shares this view as stated in the document, "these constraints can be overcome however through partnerships with other governmental agencies and non-governmental organizations to share the work load and move forward to better protect and restore water quality."[3] UDAF is ready to help expedite this approach. The best way to do this is to involve or partner with local stakeholders such as producer groups, conservation districts, and community representatives. UDAF is uniquely qualified to aid in this process by facilitating the interaction between the other stakeholders and DWQ to improve the partnerships that help all water users improve water quality. UDAF has existing working relations with these groups the DWQ could use to help bring partners to the table.

UDAF feels strongly that the state would be better served postponing the listing of certain water bodies, or only listing a portion of the water body affected by the impairment, until the end of the next 303(d) cycle. This would give the state time to evaluate the data in greater depth, reach out to other governmental agencies and non-governmental groups to gain support, and start implementing alternative approaches or best management practices rather than increasing the level of work that goes along with working on a listed water body. This would allow for more monitoring. This monitoring would allow for the measurement of whether the practices being implemented are working and track the progress to prevent the water body from being listed. Using this approach would improve the relationship DWQ has with its constituents and also reduce cost, which would provide more resources for other water quality needs. Once a water body is listed it takes several 303(d) cycles and intensive monitoring to remove a water body from the 303(d) list. This approach would help to reduce the numbers listed while at the same time improving water quality.

An example of a project that is listed and is currently in the process of TMDL development which could have benefitted from waiting for a listing is Nine Mile Creek. Nine Mile Creek is listed for temperature impairment. Its beneficial use is listed as a cold water fishery. This stream is located in a sage step desert climate with very little possibility of maintaining a riparian system to support a cold water fishery. Naturally this stream supports chubs and suckers which are present in a warm water fishery. A reclassification should be considered because of the natural conditions. We understand that currently reclassification will require a Use Attainability Analysis, but it would be worth our time to do so. It is important to realize that not all waterbodies in the state have been assigned a beneficial use that can be met because of natural conditions. Since the settlement of Utah, we have been trying to make all water bodies supportive of cold water fish and non-native species such as rainbow trout. That has created two problems. First, due to the lack of water, it has been necessary to divert at least partial flows from natural channels traditionally used for irrigation and municipal and industrial

[3] Prioritizing Utah's 303(D) List, Types of Input, pg. 1.

uses. Second, the introduction of non-native species has had devastating effects on native species and is currently costing the tax payers to remove non-native species and reintroduce native species back into their natural habitat.

There is a large number of water bodies listed for E. coli in the 303(d) vision, with the majority of them along the Wasatch Front. With very little agriculture in this area, it would appear that the sources are either wildlife- or human-caused from people, pets, and storm water. UDAF question what can be done to change any of these sources, other than storm water mitigation and not allowing pets or people to access water bodies, which is not possible. It might be beneficial to reevaluate the current standards and make necessary changes to the numeric thresholds based on science and human health criteria. We are concerned that it may be insurmountable to manage surface waters for drinking water standards.

Those waters in the Colorado River Basin listed in Utah's 303d list for TDS have listed as a source of remediation the Colorado River Basin Salinity Control Program (CRBSCP). An understanding of the CRBSCP is needed as the program may not, and in many cases, will not reduce the TDS of listed water bodies. The CRBSCP focuses on the reduction of salinity in the Colorado River main stem. Reduction of TDS in water bodies where the program has reduced ground water flow through more efficient irrigation is an appreciated side benefit (Duchesne and Ashley Creek). To think and plan that such improvements can and will be made on all water bodies in the drainage is an error.

Currently, the program uses irrigation improvement as a treatment. Many of the listed water bodies have no opportunity for irrigation improvements because there is no irrigation or the irrigated land area is insignificant. Some listed bodies are already treated such as the Escalante and Paria by state programs. The CRBSCP is looking at ways to reduce salinity from the non-irrigated grazing or natural sites. It appears that years will pass before efforts are taken to treat these large areas. Currently, BLM does do some salinity control work in these vast areas. However, the sheer magnitude of the land area makes differential measurement impractical. It would be prudent to examine other methods to delist these waters by using site specific criteria, determine whether the elevated TDS is natural, or TMDL approach.

Below is the table of 303d listed waters for the Colorado River Basin in Utah that DWQ anticipates will be mitigated for TDS by the CRBSCP. The "ALTERNATIVE APPROACH" column shows which water bodies may be affected by the CRBSCP. Those that have a '?' may have some impact because there is some irrigated land. However, in almost all cases the land is already treated with efficient irrigation systems and the area is so small that most likely there will be little measurable reduction in TDS from these treatments. Those rows that are blank have no associated agricultural lands and other mitigation will be needed or site specific criteria determined. In the "CRBSCP Project Area" column the salinity project area name is listed. Sparrow is a USGS model used to estimate salt loading into the Colorado River from agricultural sources. This model is used to identify potential sites where irrigation improvement could be made without having to perform extensive studies to determine load. Most of these areas appear

to be using improved irrigation systems. The final Column "CRBSCP Status" describes the status of the work done in the project area.

WATERBODY NAME	ALTERNATIVE APPROACH	CRBSCP Project Area	CRBSCP Status
Reen River -2 Tribs	CRBSCP	Green River Project Area	Not Started
Price River-3	CRBSCP	Price / San Rafael Project Area	Almost Complete
Fremont River-3	CRBSCP?	Sparrow	Some Treated Low Priority
Ashley Creek Lower	CRBSCP	Uintah Basin	Almost Complete
Middle Ashley Creek	CRBSCP	Uintah Basin	Almost Complete 2 Projects Piping Canals
Kane Spring Wash		No Agriculture	
Quitchipah Creek Lower	CRBSCP	Muddy Creek Area	Not Started
Ivie Creek Lower		No Agriculture	
Westwater Creek		No Agriculture	
Indian Canyon Creek		No Agriculture	
Antelope Creek	CRBSCP?	Sparrow	Minor Irrigation, All Treated
Gordon Creek	CRBSCP?	Sparrow	Minor Irrigation, All Treated
Birch Spring Draw	CRBSCP	Wahom / Manila Project Area	Almost Complete 2 Projects Piping Canals
Huntington Creek-2	CRBSCP	Price / San Rafael Project Area	HCIC Project 90%+ done
Virgin River-2	CRBSCP?	Sparrow	Studying Pah Tempe Springs
Pack Creek	CRBSCP?	Sparrow	Minor Irrigation, All Treated
Professor Creek	CRBSCP?	Sparrow	Minor Irrigation, All Treated
Dolores River	CRBSCP	Paradox Valley, Colorado	No Irrigation in Utah. Paradox injection well, Co.

WATERBODY NAME	ALTERNATIVE APPROACH	CRBSCP Project Area	CRBSCP Status
Muddy Creek Upper	CRBSCP	Muddy Creek Area	Not Started
Saleratus Creek-Emery		No Agriculture	
Ivie Creek Upper	CRBSCP?	Sparrow	Minor Irrigation, All Treated
Comb Wash		No Agriculture	
Johnson Wash-1	CRBSCP?	Sparrow	Minor Irrigation, All Treated
Johnson Wash-2	CRBSCP?	Sparrow	Minor Irrigation, All Treated
Fort Pearce Wash		No Agriculture	
Paria River-1	CRBSCP?	Sparrow	Minor Irrigation, All Treated
Paria River-2		No Agriculture	
Paria River-3		No Agriculture	
Bitter Creek Lower		No Agriculture	
Evacuation Creek		No Agriculture	
Bitter Creek Upper		No Agriculture	
Virgin River-1	CRBSCP?	Sparrow	Studying Pah Tempe Springs
San Juan River-1 Tributaries	CRBSCP?	Sparrow	Minor Irrigation, All Treated
Wahweap Creek		No Agriculture	
Chance Creek		No Agriculture	

UDAF appreciates the opportunity to address our concerns. We look to continue are working relationship with DWQ to protect the waters of the state. UDAF has many resources that can and should be used to help DWQ create plans to protect the waterbodies of the state.

Sincerely,

Robert L Hougaard
Director of Plant Industry and Conservation

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Division of Water Quality Response

Dear Mr. Hougaard,

The Division of Water Quality sincerely appreciates the thoughtful comments provided by the Utah Department of Agriculture and Food regarding prioritizing Utah's 303(d) list.

The public opinion survey was one of several pieces of information used to identify impaired waters as a high priority for TMDL development. Other sources of information included the impact of impairments to public health, specific pollutants that affect multiple uses, and the potential for reducing pollutant loads to achieve water quality standards. A detailed summary of the survey has been added as Appendix A to the document for reference.

With regard to postponement of listing decisions, DWQ's assessment methodology does not currently allow for delaying the listing of impaired waters. In the case of Nine Mile Creek, this waterbody has been listed as impaired for temperature since 2000 and has been studied intensively since 2009 to determine where the cold-watery fishery designation is appropriate. Based on this study DWQ is proposing to re-classify the lower half of the watershed as a warm water fishery. As you stated, this requires a Use-Attainability Analysis with public comment, Water Quality Board and EPA approval.

DWQ agrees that further analysis and discussion is needed on the most appropriate approach to address Total Dissolved Solids impairments on waters within the Colorado River basin. We especially appreciate the information provided on the current status of Colorado River Basin Salinity Control Program efforts throughout the state. After reviewing the list provided and verifying that no significant agricultural activities are occurring and/or the waterbody is located in areas associated with high levels of natural salinity the following waters have been moved from the Colorado River Salinity Control Program category to another alternative approach as follows:

WATERBODY NAME	IMPAIRMENT	ALTERNATIVE APPROACH
Kane Spring Wash	Total Dissolved Solids	Site Specific Standard Development
Westwater Creek	Total Dissolved Solids	Site Specific Standard Development
Dolores River	Total Dissolved Solids	Site Specific Standard Development
Saleratus Creek – Emery	Total Dissolved Solids	Site Specific Standard Development
Comb Wash	Total Dissolved Solids	Site Specific Standard Development
Paria River - 2	Total Dissolved Solids	Site Specific Standard Development
Paria River - 3	Total Dissolved Solids	Site Specific Standard Development
Bitter Creek Lower	Total Dissolved Solids	Site Specific Standard Development
Bitter Creek Upper	Total Dissolved Solids	Site Specific Standard Development
Evacuation Creek	Total Dissolved Solids	Site Specific Standard Development

WATERBODY NAME	IMPAIRMENT	ALTERNATIVE APPROACH
Wahweap Creek	Total Dissolved Solids	Site Specific Standard Development
Chance Creek	Total Dissolved Solids	Site Specific Standard Development
Indian Canyon Creek	Total Dissolved Solids	Site Specific Standard Development
Antelope Creek	Total Dissolved Solids	Site Specific Standard Development
Ivie Creek Lower	Total Dissolved Solids	Site Specific Standard Complete, new assessment required
Fort Pearce Wash	Total Dissolved Solids	Existing or Related TMDL in place (Virgin River TMDL)

The remainder of listed waters that have had irrigation improvements completed should continue to be identified with the salinity control program as it can take many years to observe the full effect of irrigation improvement efforts on water quality. DWQ looks forward to continuing our collaborative efforts to protect and improve water quality for agricultural and other beneficial uses.