Association of Idaho Cities

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April 8, 2015

Paula Wilson
Idaho Department of Environmental Quality
1410 N. Hilton
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filed by email to paula.wilson@deq.idaho.gov

RE: Association of Idaho Cities Comments on Idaho Fish Consumption Rate Rulemaking

Dear Ms. Wilson,

The Association of Idaho Cities (AIC) was founded in 1947 and is a nonpartisan, nonprofit corporation owned, organized, and operated by Idaho's city governments. The organization serves to advance the interests of the cities of Idaho through legislative advocacy, technical assistance, training and research. AIC is actively engaged in water quality issues through the work of our Environment Committee, chaired by Boise City Councilmember Elaine Clegg.

Idaho cities play an important role as the primary implementers of the Clean Water Act and have a significant interest in the development of the Fish Consumption Rule and the associated water quality criterion and implementation measures for toxic pollutants. AIC recognizes that water quality standards development is a non-discretionary State activity under the Clean Water Act and is pleased to participate with Idaho Department of Environmental Quality (IDEQ), the Environmental Protection Agency (EPA), tribes, and other stakeholders to develop water quality criteria for toxics that are appropriately protective of human health and implementation tools. AIC has developed comments that are attached for consideration by the Idaho Department of Environmental Quality.

AIC appreciates the opportunity to comment on various components of the Fish Consumption Rule and looks forward to working with our state and federal partners to implement the toxics criterion to protect the environment and human health. Should you have questions concerning our comments, please feel free to contact me.

Sincerely,

Seth Grigg

Executive Director

Cc: Elaine Clegg, AIC Environment Committee Chair

Association of Idaho Cities Comments on Idaho's Fish Consumption Rulemaking

April 8, 2015

AIC commends IDEQ for the open, inclusive, transparent, and well documented process it has conducted throughout this rulemaking since the rulemaking inception in October 2012.

The Association of Idaho Cities (AIC) has been a participant in all of the Idaho Fish Consumption Rate (FCR) rulemaking meetings, but has filed only two sets of comments to date in the rulemaking process. The lack of comments over the late 2014 and early 2015 was due to the retirement of long time AIC Executive Director Ken Harward and the subsequent recruitment, selection, hiring, and transition of a new Executive Director, Seth Grigg.

AIC appreciates the opportunity to comment on this important rulemaking and hopes our comments are helpful to the State as it crafts the draft toxics criterion for public review at the April 21, 2015 meeting.

Policy Discussion #4: Market (All) or Local Fish.

Comment #1: AIC recommends that the State make the policy decision to follow EPA guidance and use a Fish Consumption Rate (FCR) that includes fish caught in Idaho and neighboring state freshwaters, aquaculture, and estuarine waters and excludes fish consumed from marine waters, as Idaho water quality standards have no effect on marine species.

Policy Discussion #4 asks the question: should we use local caught or market purchased fish in the development of the Idaho water quality criterion? To better understand the question, it is helpful to understand the source of the fish we consume. According to the National Marine Fisheries Service (NMFS), in 2013, salmon was the second most commonly consumed fish in the United States, 91% of seafood consumed in the United States is imported, and only half is wild-caught[1].

The purpose of the rulemaking is to develop water quality criterion for Idaho waters for the protection of human health. The Idaho specific nature of the rulemaking logically leads one to choose local caught fish because that is what matters for human health exposure and Idaho water quality criterion.

EPA Frequently Asked Questions on the Human Health Criteria Method guidance[2] arrives at the same conclusion, stating:

> EPA's recommended 304(a) water quality criteria to protect these "fishable" designated uses, and accompanying risk assessment methodologies, reflect the longstanding interpretation that a

[1] NOAA (National Oceanic and Atmospheric Administration). 2014. "FishWatch: U.S. Seafood Facts." http://www.aboutseafood.com/about/about-seafood/top-10-consumed-seafoods
[2] EPA, 2000, Methodology for Deriving Ambient Water Quality Criteria for the Protection of Human Health, Frequently Asked Questions, page 2, http://water.epa.gov/scitech/swguidance/standards/criteria/health/methodology/upload/hhfaqs.pdf

designated use consistent with the goals of the Act means that State and Tribal waters should support safe consumption of fish and shellfish. EPA has consistently implemented the Clean Water Act to ensure that the total rate of consumption of freshwater and estuarine fish and shellfish (including estuarine species harvested in near coastal waters) reflects consumption rates demonstrated by the population of concern.

The FCR [fish consumption rate] indicates the amount of fish and shellfish in kilograms consumed by a person each day. For the purposes of human health ambient water quality criteria, the fish and shellfish to be reflected in the FCR include all of the fish and shellfish consumed that are species found in fresh and estuarine waters (including estuarine species harvested in near coastal waters). Because the overall goal of the criteria is to allow for a consumer to safely consume from local waters the amount of fish they would normally consume from all fresh and estuarine waters, the FCR **does** include fish and shellfish from local, commercial, aquaculture, interstate, and international sources. **It is not necessary for the FCR to include fish and shellfish species designated as marine species, as that exposure is addressed by relative source contribution (see question 4 for more detail).** However, partitioning of fish and shellfish into the different habitats in order to develop a FCR can only be done where sufficient data are available for this to be done in a scientifically defensible manner.

For example, if a State were to determine through scientifically collected data that its citizens consumed 25 grams of fish and shellfish per day where 5 grams came from marine fish, 5 grams came from a local fresh water stream, 5 grams came from a neighboring state's fresh waters, 5 grams came from international imports of estuarine shellfish, and 5 grams came from aquaculture of a freshwater species, then the FCR would be 20 grams per day. Only the marine fish component would be excluded from the FCR (see discussion below on relative source contribution). All of the other components represent the amount of fish and shellfish that could be taken and consumed from local waters if the consumer chose to do so.

Comment #2: Relative Source Contribution

AIC recommends that the state carefully review the Relative Source Contributions (RSCs) for non-carcinogens and use:

1. RSCs developed with scientifically valid methods for non-carcinogens,
2. RSC of 1 for methylmercury and other non-carcinogens, where essentially all exposure is through water and fish consumption, and,
3. Default RSCs of 0.8, which is substantially more conservative than the RSCs EPA approved for Oregon in 2011 and is within the draft EPA Human Health Methodology recommended range.

RSC is used in the calculation of non-carcinogens to account for non-water/fish sources of exposure. The RSC identifies the proportion of a person's total exposure attributed to water and fish consumption. RSCs are established at 1 or less. An RSC of 1 means that exposure from drinking water and eating fish and shellfish is the only exposure of concern. An RSC of less than 1 means significant exposure from other sources is anticipated so the human health criteria must be lowered to account for those other exposures.

EPA draft Human Health Methodology guidance[3] recommends an RSC of 0.2 unless scientifically valid data exist that show it should be higher, with a recommended maximum RSC of 0.8. This is a significant change from EPA's current guidance that recommends an RSC of 1.[4] EPA recently calculated RSCs for 17 non-carcinogens and California has calculated RSCs for 70 non-carcinogens[5]. In 2011, Oregon used (and EPA approved) EPA calculated RSCs for 16 non-carcinogens, which included a proposed RSC of 0.8 for Endrin based on local data, and used 1 for all other non-carcinogens, and did not propose an RSC for methylmercury.

Policy Discussion #5: Anadromous Fish.

Comment #1: AIC recommends that, since Idaho has no marine waters, and because of EPA's Guidance[6] to states, that IDEQ exercise the policy choices of:

- using only fresh and estuarine species (e.g. exclude marine species, including salmon and steelhead) in the determination of freshwater quality criterion,

- accounting for marine species consumption using RSC, and

- not double count marine species consumption.

Policy Discussion #5 addresses the fish consumption policy question of including or not including anadromous fish in the development of Idaho water quality criteria for toxics. Anadromous salmon and steelhead are an important species in Idaho and throughout the Pacific Northwest.

The purpose of the rulemaking is to develop water quality criterion for Idaho waters for the protection of human health. Anadromous species harvested and consumed in Idaho spend the vast majority of their lifecycle and acquire essentially all of their body mass and pollutant load (97-99%) from marine waters[7]. The toxics of concern for human health that these fish bring back to Idaho are not related to the water column concentrations of toxics in Idaho waters. Marine waters and pollutants are beyond any regulatory control that the State of Idaho could exercise. The level of

[3] EPA, 2014, Human Health Ambient Water Quality Criteria Factsheet, http://water.epa.gov/scitech/swguidance/standards/criteria/current/upload/Human-Health-Ambient-Water-Quality-Criteria-Draft-2014-Update-Factsheet.pdf
[4] EPA, 2000, Methodology for Deriving Ambient Water Quality Criteria for the Protection of Human Health, http://water.epa.gov/scitech/swguidance/standards/upload/2005_05_06_criteria_humanhealth_method_complete.pdf
[5] A summary table of RSC values in California that compares values to EPA guidelines can be found at: http://oehha.ca.gov/water/reports/RSCPoster2.pdf and the detailed public health guidelines for each constituent can be found at: http://www.oehha.ca.gov/water/phg/allphgs.html.
[6] EPA, 2000, Methodology for Deriving Ambient Water Quality Criteria for the Protection of Human Health, http://water.epa.gov/scitech/swguidance/standards/upload/2005_05_06_criteria_humanhealth_method_complete.pdf
[7] O'Neill S.M., G.M. Ylitalo, J.E. West., J. Bolton, C.A. Sloan, and M.M. Krahn. 2006. *Regional patterns of persistent organic pollutants in five Pacific salmon species (*Oncorhynchus spp.*) and their contributions to contaminant levels in northern and southern resident killer whales (*Orcinus orca*).* Presentation at 2006 Southern Resident Killer Whale Symposium. Seattle, WA.

toxics in anadromous species appear to be more informative of the concentration and criterion necessary for marine waters in which these fish spend the vast majority of their lifecycle than they are for Idaho waters. EPA guidance[8] recognizes this and recommends for the development of human health criteria, that states and tribes:

- "…evaluate fish intake from fresh and estuarine species only."

- "…to protect humans who additionally consume marine species of fish the marine portion should be considered an *other source of exposure* when calculating an RSC for dietary intake."

- "States and Tribes need to ensure that when evaluating overall exposure to a contaminant, marine fish intake is not double-counted with the other dietary intake estimate used."

Policy Discussion #6: Suppression.

AIC appreciates IDEQ including the suppression issue on the agenda and the presentations made by the tribes concerning this important issue. The information presented by the tribes on this issue was very helpful and provided an excellent perspective for the human health criteria development effort.

Policy Discussion #7: Risk Management and Protection of Human Health.

Comment #1: Risk Level Policy Decisions. AIC recommends IDEQ use Probabilistic Risk Assessment (PRA) for human health criteria development as it is the most powerful and best available science, provided that information, data, time, and resources are available. If PRA is not an available tool for some reason, the deterministic method is the default method.

AIC recommends use of the best available science for the fish consumption rates, including the actual tribal consumption rate rather than the heritage or aspirational rates because it relates most directly to the criterion that are necessary to meet the Clean Water Act goal of protection of human health. Use of aspirational or heritage rates could over or under protect bias the criterion up or down, potentially not achieving Clean Water Act goals. The Clean Water Act requires water quality standards to be updated every three years, so as additional consumption data become available in the future from general and critical sub-populations, there is a Clean Water Act required process to adjust the criteria to the level necessary to satisfy the actual fish consumption rate.

AIC also recommends the use of best risk level policy, which is identified by EPA in the Human Health Criteria Development guidance to states, including:

- for carcinogens, $10^{-6 \text{ or } -5}$ for general population provided that a minimum of 10^{-4} risk level is provided for highly exposed populations;

[8] EPA, 2000, Methodology for Deriving Ambient Water Quality Criteria for the Protection of Human Health, http://water.epa.gov/scitech/swguidance/standards/upload/2005_05_06_criteria_humanhealth_method_complete.pdf

- for non-carcinogens, contaminant concentrations such that exposed populations or sensitive sub-populations will not experience adverse effects during part or all of a lifetime; and

- for the fish consumption rate necessary to protect the entire population, the arithmetic average or 50th% for the entire population

IDEQ will be required to make many science and risk management policy decisions in the development of water quality criterion for the protection of human health, including criteria development method (PRA or Deterministic); fish consumption rate for the selected population (e.g. 50th, 90th, or 95th %); risk level for carcinogens for general and selected populations (e.g. $10^{-6 \text{ to } -4}$); reference doses (RfDs), cancer slope factors (CSFs), relative source contributions (RSCs), and bioconcentration factors (BCFs).

EPA guidance[9] and Policy Discussion #7 are clear on the policy options available to the state on each science or risk management decision. Additionally, EPA guidance provides the option for States and authorized Tribes to use "other scientifically defensible methods."

Concerning the protected population(s), EPA guidance is clear that the general and high fish consuming sub-populations are to be protected for non-carcinogens to avoid short term and lifetime effects, and for carcinogens, at different risk levels. For carcinogens, it is impossible to protect all fish consumers at the same risk level because high fish consumers always will bear more risk as the result of higher fish consumption than low or no fish consumers. Or put more simply, the State is required to protect both the general and high fish consuming populations, however at different risk levels for carcinogens and all populations from adverse effects for non-carcinogens.

Concerning Fish Consumption Rate, EPA guidance provide states the choice of choosing 50th, 90th, or 95% consumption rates for the protection of the general and high end fish consumers. EPA guidance suggests that selection of the arithmetic mean for the entire population is acceptable at a 10^{-6} level for carcinogens provided high fish consumers are protected at least at 10^{-4} or that selection of the 90th fish consumption rate and 10^{-6} or 10^{-5} for carcinogens may be acceptable, provided high end consumers are protected at least at 10^{-4}. Science and risk policy options available to states appear to fall into three basic options:

1. Entire population FCR at 50th% and 10^{-6} risk level provided that high end consumers are protected at 10^{-4};

2. Upper end of general population, FCR at 90 or 95%, and choice of $10^{-6 \text{ or } -5}$ provided highest end consumers are protected at 10^{-4} (e.g. EPA's national default fish consumption value was 90th% for the general adult population with a 10^{-6} carcinogen risk level); or

3. States also have the option to provide additional protection that is more stringent than Clean Water Act minimum protection level for human health (e.g. Oregon approach).

[9] Ibid

EPA guidance recommends a deterministic method for determination of Human Health criteria, which includes selection of multiple factors, each with their own level of safety factor (e.g. fish consumption rate, reference dose, cancer slope, relative source contribution, body weights, water intake…). As the result of each factor having a safety factor, deterministic methods are recognized to have large intrinsic safety factors. EPA guidance also provides States the option to use other scientifically defensible methods, for example Probabilistic Risk Assessment presented in Policy Discussion #3. PRA has the ability to more accurately determine the risk for specific types or groups of fish and water consumers that simply is not available using deterministic methods. PRA therefore appears to be the most current and best available science for determination of human health criterion; however application of PRA requires significantly greater level of effort, information, and data to generate criteria that may not be available to the State given the Idaho rulemaking schedule.

AIC encouraged IDEQ to use the best available science in our initial comment letter. IDEQ has a choice of using PRA or deterministic methods.

The best available science also includes use of the best available data for multiple inputs, including: updated fish consumption rates for the general public from the Idaho Fish Consumption Survey; updated current fish consumption rates for the high end consumers (presumably the tribes) from the tribal fish consumption surveys; updated Reference Doses (RfDs), cancer slope factors (CSFs), relative source contributions (RSCs), bioconcentration factors (BCFs), and water intake rate.

Policy Discussion #8: Implementation Tools.

AIC appreciates the effort, content, and analysis that went into development of Policy Discussion Paper #8, Implementation Tools. IDEQ did a very good job of identifying and describing many of the likely outcomes of the fish consumption rate rulemaking (multiple criterion becoming more stringent, likely at levels that will be difficult or impossible to attain) and the associated implementation challenges that will occur upon adoption and EPA approval of these criterion.

AIC agrees that the likely outcome of this rulemaking will be more stringent human health criterion for a number of carcinogens and non-carcinogens, with some criterion at levels that will be so low that they will be extremely difficult, if not impossible, to meet or even reliably measure in the short, medium, and potentially very long term, if ever. The list of pollutants we anticipate will fall into this category include, but is not limited to: mercury, arsenic, multiple legacy pollutants (e.g. PCBs, DDT, DDE, dioxin…), and some organic chemicals.

The pollution control measures for point and nonpoint sources control or treatment for some pollutants (e.g. mercury, PCBs…) simply do not exist, nor is anticipated to any time in the near future. Additionally, the sources of some of these pollutants are atmospheric deposition from regional, national, or global sources (e.g. mercury, PCBs…); legacy pollutants; legacy mining; natural geologic background (e.g. arsenic, selenium, and mercury); or purposeful use of consumer products. The combination of global atmospheric sources, legacy pollutants, natural background and the lack of suitable and adequate control technologies require that a robust suite of implementation tools be

adopted concurrent with the new human health criterion, similar to the tools adopted by Oregon concurrent with the new human health criterion.

AIC strongly endorses inclusion of a wide range of implementation tools; however, some tools are of much greater practical use than others as we describe below. The appropriateness and application of the tool is also dictated by the local, regional, national, and international nature of the pollutant sources; treatability; cost of treatment; and timeframe/likelihood of meeting the standard. The eight tools included in the policy paper, their limitations and potential improvements are provided below.

- **Compliance Schedules**: Compliance schedules are authorized in NPDES permits, generally for construction or improvement related actions of limited time and duration (one or two permit cycles) based on attainment of a final limit as soon as possible. Toxics reductions for some pollutants (e.g. mercury or PCBs) are possible, however for mercury and PCBs, point sources generally are an extremely small portion of the load and reductions to best level of control/performance will not result in attainment of standards. In most cases, control technology to reduce these pollutants do not exist or are so costly as to not be affordable for Clean Water Act purposes, leaving best management practices and pollution prevention as the most appropriate actions for some pollutants. Compliance schedules often are conditioned on "progress toward achieving" the final limit (e.g. water quality standard) and at a certain point, facilities may have implemented everything they can and may not be able to reduce the load or concentration further. Compliance schedules generally have not been used for legacy toxics that may require decades or centuries to attain compliance with the numeric criterion because of atmospheric deposition and global use and circulation of certain pollutants that are unrelated to the permittee actions. If Compliance Schedules are to be used, significant additional elements will need to be added (e.g. longer timeframes; implementation of BMPs as the final compliance measure; recognition that progress might be limited, or discharge levels will be variable and potentially driven by rainfall (particularly for MS4 permits or other influences…)) for them to be useful tools.

- **Variances:** Variances temporarily relax a water quality standard, are subject to public review every three years, and may be extended upon expiration. A variance may specify an interim water quality criterion that is applicable for the duration of the variance. Variances can help to assure that further progress toward improving water quality is achieved. Like the Schedules of Compliance discussion above, variances were not anticipated to be long term or address issues that may take decades, centuries, or longer to attain for certain bioaccumulative pollutants like mercury and PCBs.

  Variances also generally are issued permit by permit, which creates significant permitting workload for pollutants that have large (e.g. watershed, geologic province, statewide) geographical distribution (e.g. mercury). The need for permitting efficiency and scalability to a watershed or statewide scale is necessary for some pollutants, so we are very supportive of the state including multi-discharger variances as implementation tools. We suggest that variances

be considered one tool that can work at multiple scales (e.g. permit specific, watershed based, statewide, or other geographical/geologic area) to address legacy mining, natural geologic background, bioaccumulative (mercury, PCB…), and organic pollutants.

- **Multiple Discharger Variances:** (watershed or statewide variances for pollutants with associated geographic scale). This will provide efficiency in permitting for pollutants with broad geographic effect like mercury and PCBs at statewide scale and legacy mining metals/pesticides/natural background at the watershed scale.

- **Intake Credits:** Traditionally limited only to water withdrawn from the receiving water. In Idaho, municipalities and industry use primarily groundwater (>90%), limiting the application of this tool to a select few facilities. IDEQ should expand the intake credits concept to include municipal and industrial sources using ground or surface waters to make this tool more applicable and effective.

- **Trading:** AIC supports the use of trading programs, which are generally confined to non-toxics (e.g. sediment, temperature, phosphorus…) and is interested in the IDEQ and EPA further developing the concept as it may apply to human health criteria.

- **Site Specific Background Pollutant Criteria:** AIC understands that site specific background pollutant criteria (SSBPC) are based on background pollutant concentrations of the source/receiving water, are performance based, facility specific, limited to carcinogenic human health pollutants, and additional conditions. SSBPCs, like intake credits, appear to contain similar "same water body" provisions that significantly limit applicability in Idaho, where many permitted municipal and industrial dischargers are supplied by groundwater. That would need to be addressed, along with other limitations (non-carcinogens) to be a useful and effective implementation tool. AIC supports the concept of SSBPCs but recognizes an Idaho specific approach would need to be used for this to become a useful implementation tool. AIC would be glad to work with IDEQ and other stakeholders to develop intake credit and SSBPC implementation tools that are useful to a larger number of Idaho permittees while still providing an appropriate level of environmental protection.

- **Restoration Standards:** Restoration standards appear to be the best tool for a number of likely human health pollutants in Idaho, particularly for those pollutants that are not expected to meet water quality standards "for a long period of time due to the magnitude of the exceedance, the source of the pollutants, and the availability of treatment." Using this tool, a state would adopt a lesser designated use in the interim and incrementally improve to achieve the longer-term water quality standard.

  The limitations are that this is a relatively new tool (one proposed, but not yet approved example in the U.S.) that is data and time intensive and has never been applied to human health criterion. AIC believes that this is a better alternative than refining or downgrading the use (e.g. fishable, but with only limited fish consumption) and is a long term solution that is far superior to the available short term fixes (e.g. variances, Schedule of Compliance) to address these very

difficult pollutants (mercury…). AIC believes that IDEQ should include this as an implementation tool and further explore the potential applicability with EPA for a limited group of the most difficult water quality standards criterion (e.g. mercury, PCBs…).

- **Delayed Implementation of Rulemaking:** AIC agrees with IDEQ and ODEQ that delayed implementation on the rulemaking is not an implementation tool that should be included in the Idaho implementation approach.

In addition, IDEQ should examine how the following implementation tools might be used, and include them in the list of implementation tools for use in addressing human health criterion as appropriate:

- **Refined Use:** Federal water quality standards guidance provides states the flexibility to refine and establish subcategories of use. Subcategories of use could be refined to an attainable use (e.g. fishable, but consumable only at prescribed safe fish consumption rate to protect human health). For certain waters and a small group of chemicals, this may be a very reasonable approach for the state to pursue and should be one of the implementation tools that IDEQ considers including in the implementation package.

- **Development and Implementation of Watershed or Statewide Toxics Reduction Strategies by IDEQ**: Many pollutants have local, regional, national, and global sources that need to be identified so the state, point and nonpoint sources, and the public know what the reduction potential is and the state or EPA can craft NPDES permits that contain appropriate and achievable actions to address the point source portion of the load reduction and identify what portion of the reduction needs to occur at the larger regional, national or international scale (e.g. UNEP Global Mercury Assessment[10] and Minamata Convention/Treaty[11] on mercury) to meet water quality standards.

[10] UNEP Global Mercury Assessment, http://www.unep.org/PDF/PressReleases/GlobalMercuryAssessment2013.pdf.
[11] UNEP Minamata Convention on Mercury, http://www.mercuryconvention.org/