HHRA ST

Program Project Description:

The EPA's Human Health Risk Assessment (HHRA) research program is focused on the science of assessments that inform decisions made by the EPA and its partners, including states and tribes. These assessments provide the scientific basis for decisions under an array of environmental laws, including the Clean Air Act, Clean Water Act, Safe Drinking Water Act, Toxic Substances Control Act (TSCA) and Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). The current portfolio of HHRA products include:

- ***Integrated Risk Information System (IRIS):*** IRIS assessments identify the potential for a chemical to cause cancer or adverse non-cancer health effects in people, and, when appropriate, include quantitative estimates of toxicity based on routes of exposure. IRIS is the only federal program to provide toxicity values for both cancer and non-cancer effects. IRIS assessments are not risk assessments. They are the top tier source of toxicity information used by the EPA and other health agencies to inform national standards, clean-up levels at local sites, and set advisory levels. IRIS assessments inform decisions under the Clean Air Act, Safe Drinking Water Act, CERCLA/Superfund, and TSCA.

- ***Integrated Science Assessments (ISAs):*** Provide a concise evaluation and synthesis of science necessary to support decisions to retain or revise the National Ambient Air Quality Standards (NAAQS) for six criteria air pollutants (particulate matter, ozone, lead, sulfur oxides, nitrogen oxides, and carbon monoxide) as required every five years by sections 108(a)(2) and 109(d)(1) of the Clean Air Act. ISAs also inform the benefit-cost analyses that support the regulations designed to allow states and local areas to meet the NAAQS.

- ***Community and Site-specific Risk*:** Develops Provisional Peer-Reviewed Toxicity Values (PPRTVs) and exposure assessment tools to help inform the EPA's timely response to contaminated Superfund and hazardous waste sites, as required by the CERCLA. PPRTVs are typically developed for data poor chemicals for which no IRIS value exists.

- ***Research to Advance Risk Assessment Methods:*** Develops tools and methods that support the scientific advances in assessments. This includes research to incorporate non-animal testing data into assessments. It also includes research on assessment methods for emerging contaminants such as nanomaterials or biotechnologies.

Recent accomplishments include:

Final IRIS assessments for Ethylene Oxide and Benzo(a)pyrene were completed, and draft IRIS assessments for Ethyl tert-Butyl Ether (ETBE), and tert-Butyl Alcohol (TBA) were released to the Science Advisory Board (SAB) for independent, external peer review. Scoping and problem formulation packages for three IRIS chemicals were prepared to be released by the end of FY 2017.

ISA chapters were developed for 2 final Integrated Review Plans (IRPs) – one to support the primary and secondary NAAQS review for particulate matter (PM) and another to support the

secondary NAAQS review for oxides of nitrogen and sulfur. Recent releases include the second draft ISA for Oxides of Sulfur – Health Criteria to support the primary NAAQS for SO2 and the first draft ISA for Oxides of Nitrogen and Sulfur-Ecological Criteria to support the secondary NAAQS for NO2 and SO2.

HHRA continues to provide ongoing technical support for human health and ecological risk assessment to Superfund and is on track to deliver 12 high priority PPRTV assessments by the end of FY17.

FY 2019 Activities and Performance Plan:

HHRA is dedicated to sustaining EPA's focus and commitment to transparent and robust research and scientific analysis to inform policy making. In FY 2019 and beyond, HHRA will provide the research and technical support needed to ensure safety of chemicals in the marketplace; to clean up, revitalize and return land back to communities; to provide clean and safe water; and to work with EPA and states to improve air quality. Specifically, HHRA will continue to do the following:

- Develop a portfolio of Chemical Evaluation products that optimize the application of best available science and technology. These products will be shaped for use by several partners, including the states, tribes, other federal agencies, and the EPA's national and regional program offices.
- Through a more proactive pipeline with the EPA's Office of Chemical Safety and Pollution Prevention, provide scientific products and support required for TSCA implementation.
- Develop assessment products such as Integrated Risk Information System (IRIS), Provisional Peer-Reviewed Toxicity Values (PPRTVs), and advanced exposure assessment tools as well as provide technical support to help inform the EPA's clean-up decisions at contaminated Superfund, Brownfields, and hazardous waste sites, as required by RCRA and CERCLA.
- Provide the scientific products and support to the EPA's Office of Air and Radiation to conduct Risk and Technology Reviews under Title III of the Clean Air Act.
- Provide Integrated Science Assessments (ISAs) to support decisions to retain or revise the National Ambient Air Quality Standards (NAAQS) for six criteria air pollutants (particulate matter, ozone, lead, sulfur oxides, nitrogen oxides, and carbon monoxide) as required every five years by the Clean Air Act. ISAs also inform analyses by state and local officials, including benefit-cost analyses, to support implementation of air quality management programs.
- Provide research and technical support to the Office of Water for sustainable water resources management to ensure that waters are clean under the Clean Water Act, and to help deliver safe drinking water under the Safe Drinking Water Act. Specifically, Efforts under the Clean Water Act will address the required exposure and health assessments at various stages of the water cycle. Additionally, HHRA will focus on evaluating health

impacts from exposure to known and emerging, chemical and biological contaminants under the authorities of the Safe Drinking Water Act.
- Provide localized technical assistance and scientific expertise on human and ecological risk assessments to states, tribes, regions and programs. This includes direct support in cases of emergencies and other rapid response situations.

The EPA has established a standing subcommittee under the EPA's Board of Scientific Counselors (BOSC) for the Chemical Safety for Sustainability and Human Health Risk Assessment National Research Programs that will be utilized to evaluate the HHRA program as part of its performance and provide feedback to the agency. The EPA will meet regularly with both the BOSC and Science Advisory Board (SAB) to seek their input on topics related to research program design, science quality, innovation, relevance and impact. This includes advising the EPA on developing its strategic research direction and Strategic Research Action Plans for FY 19-22.

The EPA collaborates with several science agencies and the research community to assess our research performance. For instance, the EPA is partnering with the National Institutes of Health, the National Science Foundation, the DOE, and the USDA. The agency also will work with the White House's Office of Science and Technology Policy. The EPA supports the interagency Science and Technology in America's Reinvestment—Measuring the Effect of Research on Innovation, Competitiveness and Science (STAR METRICS) effort. This interagency effort is helping the EPA to more effectively measure the impact federal science investments have on society, the environment, and the economy.[1]

A list of FY 2019 performance measures and targets is located in the FY 2019 Performance Measures tab.

FY 2019 Change from FY 2018 President's Budget (Dollars in Thousands):

- (+/-) This change to fixed and other costs is and increase/decrease due to the recalculation of base workforce costs for existing FTE due to adjustments in salary, essential workforce support, and benefit costs.

Statutory Authority:

CAA Amendments, 42 U.S.C. 7403 et seq. - Sections 103, 108, 109, and 112; CERCLA (Superfund, 1980) Section 209(a) of Public Law 99-499; CWA Title I, Sec. 101(a)(6) 33 U.S.C. 1254 – Sec 104 (a) and (c) and Sec. 105; ERDDA 33 U.S.C. 1251 – Section 2(a); FIFRA (7 U.S.C. s/s 136 et seq. (1996), as amended), Sec. 3(c)(2)(A); FQPA PL 104-170; SDWA (1996) 42 U.S.C. Section 300j-18; TSCA (Public Law 94-469): 15 U.S.C. s/s 2601 et seq. (1976), Sec. 4(b)(1)(B), Sec. 4(b)(2)(B).

[1] STAR METRICS, https://www.starmetrics.nih.gov/.