Statement by Kevin Conole, Alternate U.S. Head of Delegation to the 66th Session of UN Committee on the Peaceful Uses of Outer Space, on Agenda Agenda Item 10
"Space and Water"
June 6, 2023

Thank you, Chair.

The U.S. Delegation is pleased to provide a statement on U.S. efforts related to the use of space-derived data to improve water management.

Critical decisions in water resources management are dependent on data – accessible and actionable data. That is why the United States is making significant investments in the collection of water-related Earth observations and enabling access to and utilization of that data. NASA, the National Oceanic and Atmospheric Administration (NOAA), the U.S. Agency for International Development (USAID), the U.S. Army Corps of Engineers, the U.S. Department of Agriculture, and the U.S. Geological Survey leverage the investment of space-based remote sensing for national and global applications and work together to provide actionable data, build the capacity to access and utilize the data, and enable impactful benefits of Earth observations through informed decision-making.

Using observations from satellites and instruments on the International Space Station, space-based missions help us to understand our planet's interconnected systems, from a global scale down to minute processes. Earth observations from NASA and other agency satellites and instruments can provide critical information for water resource managers, including data from NASA's Soil Moisture Active Passive (SMAP) mission, the Global Precipitation Measurement (GPM) mission, GRACE – Follow On mission, and the joint NASA-U.S. Geological Survey Landsat mission. Recently launched in 2022, the Surface Water Ocean Topography (SWOT) mission marks a breakthrough in our ability to establish the first-ever global survey of Earth's surface water. The SWOT mission will help to close several critical climate-relevant data gaps, including observations of sea surface height and coastal sea levels, and will record measurements of 95% of Earth's lakes, rivers, and reservoirs. These measurements are key to understanding surface water availability and in preparing for important water-related hazards such as

floods and droughts. Leveraging SWOT, Landsat and NASA/ESA Sentinel data, the Observational Products for End-Users from Remote Sensing Analysis (OPERA) project team is producing a near-global Surface Water Extent product suite to address interagency requests for Earth observation information.

The NASA-ISRO SAR (NISAR) Mission, slated for launch in 2024, will measure Earth's changing ecosystems, dynamic surfaces, and ice masses providing information about biomass, natural hazards, sea level rise, and groundwater. One initial output will be a high-resolution product providing soil moisture information at the 200 meters scale.

However, this volume of data is fruitless without the ability to access and use the information. That is why NASA is making a long-term commitment to building an inclusive open science community over the next decade. To help build a culture of open science, NASA is championing a new initiative: the Open-Source Science Initiative (OSSI)**.** Open-source science is a commitment to the open sharing of software, data, and knowledge as early as possible in the scientific process to make publicly funded scientific research transparent, inclusive, accessible, and reproducible.

An example of accessible and actionable science data includes NASA's new Earth Information System (EIS), which delivers analysis-ready products for use by scientists and non-scientists alike. Using 20+ years of Earth observation data and novel modeling capabilities, it aims to support near-term and long-range analysis and decision making in support of preparation, mitigation, and resilience in the face of climate change.

U.S. agencies collaboratively work with international entities and foreign governments to enable the access and use of Earth observation data and information. As an example, SERVIR is a partnership between NASA and the U.S. Agency for International Development, working with over 50 countries in Asia, Africa, and the Americas to use satellite data to address critical challenges in food security, water resources, weather and climate, land use, and water-related disasters. In 2023, SERVIR will deliver at least four water-related deliverables, including flood extent mapping in Southeast Asia, small water-body volume estimation tool for pastoralists in West Africa, and an evaluation of the use of

commercial cloud provider as a sustainable delivery mechanism for flood forecasts.

In addition, NOAA is proud to co-chair the Group on Earth Observations (GEO) Global Water Sustainability (GEOGloWS) together with our French colleagues at CNES. GEOGloWS Streamflow Forecasting tool aims to tool provide water data for every river in the world. Currently, streamflow forecast information is available in 21 countries across South America, Africa and the Americas. In 2022, GEOGloWS partnered with Amazon Web Services to provide cloud computing resources to customize GEOGlOWS at regional and national levels.

Through its Strategic Hydrologic and Agricultural Remote-sensing for Environments (SHARE) program, NASA has partnered with the U.S. Department of State to provide advanced remote-sensing, modeling, and capacity building activities to end-users in multiple transboundary water basins, including the Lower Mekong River Basin and the La Plata River Basin. This initiative rapidly brings Earth observation data and technical resources to end-users in some of the most complex hydrologic domains in the world.

The NASA Applied Sciences Program funds the research, development, and deployment of applications using Earth observations, including 30 projects for water resources management and five water relevant projects focusing on equity and environmental justice. These new projects will collaborate directly with water resource managers, government agencies, and other community decision makers to customize the use of Earth observations for decision making around the world. Topic areas include supporting farmers' irrigation decisions for crops, developing seasonal forecasts to prepare for climate change-related weather extremes, using Earth observations to track and monitor water quality indicators, and forecasting drought conditions to inform water resource management in water-scarce states and countries.

Chair, these are a few examples of how the United States and our partners are working to integrate valuable space-based observations in the decision-making process to address a range of water resource management challenges in the United States and abroad.

Thank you, Chair.