DOE GEOSPATIAL BASEMAP NEWSLETTER

FY21 Q1 EDITION

"GIS is waking up the world to the power of geography, this science of integration, and has the framework for creating a better future. The ongoing evolution of technology – faster computers, big data, cloud computing, smart devices, and increased capacity to measure things – is giving rise to a new pattern of GIS."

- Jack Dangermond,
Founder and President of Esri

GEOSPATIAL NEWS

Innovation Community Center (ICC)

Department of Energy (DOE) launched the Innovation Community Center (ICC) to foster enterprise-wide collaboration to explore and assess advanced and emerging technologies, and to share insights, resources, technologies, and capabilities to address mission needs. This collaboration allows DOE to leverage collective knowledge, maximize value and impact, and excel as a global leader in developing and deploying innovative solutions.

In keeping with DOE's long history and mission of advancing technologies for the betterment of society, we are introducing the ICC Geospatial Knowledgebase. Through its Innovation Exchange, the ICC Geospatial Knowledgebase is a place where the GIS Community—along with DOE's Geospatial data producers and consumers—can go to access documented key geospatial resources, policies and procedures. It also enables participants to ask their peers questions, to post useful information such as lessons learned and best practices, and to discuss and exchange research ideas—all with the goal of sparking innovative solutions to address geospatial needs and changes. Furthermore, the Innovation Exchange will create new opportunities for research in key new geospatial subject areas will be produced and exchanged.

One of the new exciting features coming out of the Innovation Exchange alongside the ICC Knowledgebase is the DOE Geospatial Interactive Glossary (DiG). The DiG is a centralized repository of key technology terms and definitions, which will help members of the geospatial community to consume and apply the definitions across their organizations and suggest improvements to definitions for consideration by the GIO and their peers. So far, the DiG contains over 60 Geospatial terms and definitions.

DOE Geospatial Data Management Insights Workshop

The DOE Geospatial Science Program Management Office (GS-PMO) is planning a workshop! We look forward to engaging with the DOE Geospatial Community to gain insights and brainstorm solutions for the DOE Geospatial Data Management Implementation Plan, which will help to address a range of major geospatial challenges, including federal requirements such as the Geospatial Data Act (GDA).

The current target dates for the workshop are February 2-4, 2021, with sessions laid out over 5-6 hours a day, and support to encourage bi-coastal participation. The workshop structure will be focused on breakout sessions to encourage communication and collectively brainstorm solutions around geospatial data management challenges and GDA requirements. Leading up to the

workshop, a series of town hall and training sessions will be offered to raise awareness of current DOE geospatial activities & data, and to start the discussion around geospatial data management needs.

RESOURCES

[ICC GEOSPATIAL KNOWLEDGEBASE]
[GEOSPATIAL DATA ACT OF 2018]
[SPENT FUEL & WASTE DISPOSITION]
[eDARS SERVICE DESK]
[GEOSPATIAL POWERPEDIA]

UPCOMING EVENTS!

12/10: Geospatial Town Hall
01/14: January GUG meeting
02/2-4: Geospatial Data Management Workshop

GEOSPATIAL HOT TOPICS

Geospatial Records Are Federal Records

The Department of Energy (DOE) Records Management Program, as part of the Records & Privacy Management Division (IM-40) within the Office of the Chief Information Officer (IM), ensures compliance with the Federal Records Act of 1950, as amended, by promoting the management of records throughout their lifecycle in an economical, efficient, and effective manner. Implementation of a sound Records Management Program facilitates decision-makers and others having the right information in support of mission accomplishment; and the creation and maintenance of records to protect the rights and interests of the Department and those served.

Geospatial information, data, reports, or other types of documents are federal records. A federal record is information recorded in any format that is created, received, or managed and that documents DOE business. Federal records provide evidence of the organization, functions, policies, decisions, procedures, operations, or other activities of the DOE and have informational value (Public Law 113-187).

All federal records must be managed in accordance with a NARA approved records disposition schedule, which is a mandatory policy approved by the National Archives and Records Administration (NARA) that tells us how long DOE will have to keep a record and when we have to transfer to NARA or destroy a record. Records without a schedule are considered unscheduled records and must be preserved (not destroyed) until a proper DOE schedule is applied or a unique records schedule is created and approved by NARA.

DOE does not have one single Geospatial Records Disposition Schedule. A Geospatial Information System (GIS) itself would be scheduled as an IT system, and the data generated by the system should be managed as a record according to the topic of the information contained within the GIS system. For example, the DOE Environmental Records Schedule requires that computer model radiation calculation records, which may result from geospatial systems data, be maintained according to the instructions outlined in a valid environmental records schedule.

For questions about your records and their records disposition schedule, please reach out to your records management contact. You can also contact DOERM@hq.doe.gov for assistance.

Nuclear Fuel and Radioactive Waste Research and Development

The Department of Energy's (DOE) Office of Nuclear Energy (NE) is responsible for ongoing research and development (R&D) related to long-term disposition of spent nuclear fuel (SNF) and high-level radioactive waste (HLW), which are managed by the Office of Spent Fuel and Waste Disposition (SFWD). SFWD has two offices that cover different aspects of this oversight: the Office of Spent Fuel & Waste Science and Technology (SFWST) and the Office Integrated of Waste Management (IWM).

The IWM office supports evaluations, planning, and preparations for transport and disposal of SNF and HLW and the possibility of interim storage for SNF. Activities include conducting system analyses to evaluate the integrated approach for transport, storage and disposal.

DOE-NE's Office of Integrated Waste Management (NE-82) has developed "unit dose factors" (UDFs) for DOE transport of commercial spent nuclear fuel (SNF) that will be integrated into DOE-NE's geospatial Stakeholder Tool for Assessing Radioactive Transportation (START) for the purpose of estimating public radiation doses for future environmental regulatory analyses. Public dose estimates will use UDF's specific to a particular SNF container-type and transport mode, and incorporate geospatial data from START on highway, railway, or waterway segment-specific travel speeds, travel distance, and population density.

General inquiries can be sent to our communications team at NEcommunications@nuclear.energy.gov

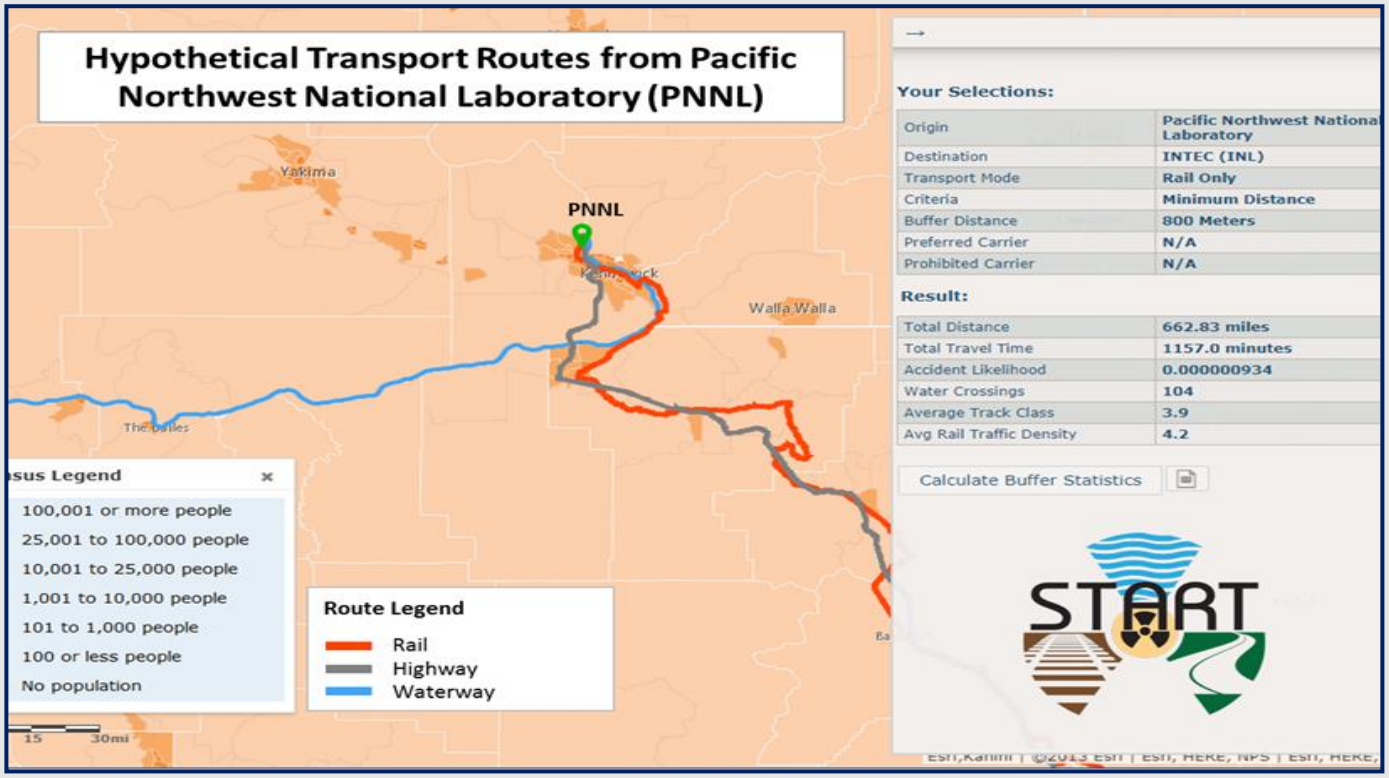

Figure 1: Screenshot of the hypothetical transport routes in START from PNNL via rail, highway, and waterway, with a population basemap.

CONVERSATIONS WITH LEADERSHIP

We sat down with leaders Pamela K. Isom and Tania Smith Taylor for their thoughts on Geospatial Data at DOE.

Pamela K. Isom:

Pamela Isom is the Deputy Chief Information Officer (DCIO) of Architecture, Engineering, Technology, and Innovation (AET&I) for the United States Department of Energy (DOE) Office of the Chief Information Officer (OCIO) since 2018. She directs IT transformation strategies and implementation of innovative, mission-focused products and integration services, and leads Geospatial data strategy and management as the DOE Senior Agency Official for Geospatial Information (SAOGI) while serving as Chair on the Geospatial Executive Program Management Office (PMO) Core. Isom recently launched the DOE Innovation Community Center (ICC), a digital hub and collaborative platform for accelerating mission outcomes through innovation exchange, market research, and advanced technology implementation. Isom holds a Master's degree in Information Systems Management from Walden University and a Bachelor's degree in Business Administration from Chaminade University of Honolulu.

Tania Smith-Taylor:

Tania Smith Taylor is the Deputy Director of the LM Office of Business Operations (OBO) and serves as Co-chair to the Geospatial Executive Program Management Office (PMO) Core. OBO is responsible for managing LM's real and personal property program associated with more than 90 sites in the United States. In her previous position as director for the LM Office of Site Operations, she was responsible for LM's long-term surveillance and maintenance program, environmental management systems, and National Environmental Policy Act compliance. In addition to having DOE experience with the Savannah River Site Operations Office and EM Headquarters, Taylor has extensive experience managing environmental programs for the U.S. Army Corps of Engineers in Afghanistan, Africa, Balkans, Belgium, Germany, Italy, Iraq, and the Netherlands. She has also deployed as a civilian on three separate occasions to both Afghanistan and Iraq.

Geospatial Data at DOE

In her role as co-chair of the Geospatial Science-Project Management Office (GS-PMO), Pamela K. Isom serves as a primary enabler for Geospatial data throughout the Department. Ms. Isom enjoys her role, explaining "Being the Geospatial Information Officer has been such an enlightening opportunity in helping to spark this passion I've always had for data science." The GS-PMO's leadership of governance and policy will ensure adherence with the Geospatial Data Act of 2018 (GDA), ultimately providing access to knowledge and expertise to better establish DOE as a resource for geospatial data and geospatial innovations.

GDA is an important mandate that supports the access to and utilization of data to make effective decisions through 13 Covered Agency Responsibilities. Over the summer, DOE underwent an audit for compliance to the GDA. The IG's preliminary findings outline the need to develop a complete geospatial inventory for data and resources; support departments in becoming GDA compliant; enhance communications; and define specific geospatial standards of operations across the agency with guidance. This next year will be a flurry of activity as DOE responds, launching new communications tools, writing a Data Management Strategy, and co-creating a Geospatial Implementation Plan. These activities will accelerate bringing efforts and

teams together as one and ensuring geospatial insights are foundational to protect, connect, and lead the agency mission.

As the GS-PMO looks ahead, one of the biggest challenges with governing geospatial within DOE is data quality. In addition, knowing what data are available and where – and how to access it – is another big challenge, given geospatial activities and advancements at the Department of Energy (DOE) are largely de-centralized. Mitigating risk associated with the use of data and maintaining ethical requirements is another challenge. To circumvent these, Ms. Isom notes a risk management playbook will be rolled out in a few months and says that more collaboration with PMO-Core would help. Currently, PMO is the liaison to different Program Offices and they direct the Program Offices for more frequent use of geospatial. “I envision a future where we solve challenges holistically to mature DOE and to help us realize and achieve our mission together,” Ms. Isom says.

In the future, there will be even more geospatial data to curate and collaborate and leverage. “Geospatial data is just exploding with intelligence and insights,” Ms. Isom exclaims. To support a foundation of data access and utilization, the geospatial team is coming up with ideas for creating an interface to the geospatial repositories across the Department. Ms. Isom believes we need a platform for the integration of geospatial data. “Geospatial data is so valuable, and I’d like to see applied, holistic data science that includes insights from Artificial Intelligence (AI), Machine Learning (ML), deep learning, and natural language processing,” she says. She sees the geospatial community expanding over time to include other agencies, industry, and academia. Cross-collaboration would broaden the impact and influence of the GS-PMO, which she says has done a wonderful job on keeping the focus on GDA and what we need to be doing as a Department not only to address the requirements but also to think beyond them. More perspectives engaged and grounded in continued partnership and inclusivity will create a future of more innovative uses of geospatial data that we can all benefit from.

Tania Smith-Taylor is the Deputy Director of the Office of Business Operations (OBO) within the Office of Legacy Management (LM) at the Department of Energy (DOE). In her role, Tania is accountable for the integrity, quality, and accessibility of LM's Geospatial data. Tania also serves as Co-chair on the Geospatial Program Management Office (PMO) Core. Tania describes the importance of achieving consistency for Geospatial data, saying “Achieving some type of consistency within the Department and making sure to help the Department comply with the law, but serve our community, customers and public by showing that we're producing good quality data in a transparent way to better support DOE's mission and taxpayer needs."

Tania feels that having transparent data to all stakeholders regardless of education, representation, or place within a hierarchy to understand the big picture is intuitive and makes our data easier to understand in terms of what it means. “It allows us to infer the qualitative from the quantitative so we can get to the next question.” Tania further explains “The significance of Geospatial data and activities is the opportunity it presents to build an integrated and connected DOE community. Because of the prevalence of maps in so many of the things we do, Geospatial data provides a common ground from which we can better collaborate.”

Looking into the future of Geospatial data, innovation and cutting-edge research and development (R&D) in the field of geospatial data, geospatial science, and analytics continue to yield new ways to incorporate geospatial data into new arenas and offer solutions to today’s most challenging problems. Companies and academic institutions across the country are investing in developing geospatial technologies that will further extend the use of this valuable data outside traditional markets. Tania envisions a future in which “collaboration and consistency across the Department using compatible platforms” as being key.

THANK YOU

This quarter, the GS-PMO would like to specially recognize:

The Records Management Team (Maria Levesque, Theresa Selmer, & Andrea Heimbrock) – Thank you for your participation in the PMO Core and for the records management scheduling you are doing to support our compliance with Geospatial Data Act!

The Governance Team (Yohanna Freeman, Alberto Alvarez, & Jonnie Bradley) – Thank you for your support reviewing materials and providing insight into governance for the Geospatial community as we prepared for our inaugural Geospatial Town Hall this November!

The Strategic Planning Team (Kathy Crouch & Will Swensen) – Thank you for the review of our materials as we launch new communications to further the reach and engagement of Geospatial data across our community!

The GIS Community – Thank you for your participation and sharing of Geospatial activities to bolster the power of Geospatial data, including your questions and engagement for our first successful Geospatial Town Hall this November!

GS-PMO MEMBERSHIP

Pamela K. Isom – PMO Chair, OCIO SAOGI, FGDC Steering Committee
Tania Smith-Taylor – PMO Co-chair, Legacy Management (LM)
Margaret Lentz – Artificial Intelligence & Technology Office (AITO)
Matthew Tarduogno – Cybersecurity, Energy Security, and Emergency Response (CR)
James O'Sullivan – GDA Compliance WG, US Energy Information Administration (EIA)
Jeanne Beard – Environmental Management (EM)
Josh Linard – GDA Compliance WG, GSSC, GUG Co-Chair, Legacy Management (LM)
Josh Jones – Office of Management (MA)
Jennifer Bauer – GDA Compliance WG, National Energy Technology Laboratory (NETL)
MiKyung Kang – National Energy Technology Laboratory (NETL)
Kelly Rose – GDA Compliance WG, National Energy Technology Laboratory (NETL)
Goodman Bellamy – National Nuclear Security Administration (NNSA)
Gardy Rosius – GDA Compliance WG, OCIO IM-50
Sonia Smith – GDA Compliance WG, OCIO IM-50
Wende Wiles – GDA Compliance WG, OCIO IM-50
Rene'e Porter – GDA Compliance WG, OCIO IM50
Maria Levesque – OCIO IM-40
Patricia Hoffman – Office of Electricity (OE)
Tuttle Mark – GSSC Chair, Oak Ridge National Laboratory (ORNL)
Marcos Gonzales Harsha – Office of Technology Transfer (OTT)
Bleakly Denise – GSSC Co-chair, Sandia National Laboratory (SNL)
Jeff Stehr – Office of Science (SC)
Sharlene Weatherwax – Office of Science (SC)
Thomas Harper – Pacific Northwest National Laboratory (PNNL)
David Tucker – Western Area Power Administration (WAPA)

Questions?

Please reach out to the Geospatial Team