

Local Opinion: Data science, history point way to a more sustainable Arizona

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Laura López-Hoffman, Marc L. Miller, Sudha Ram and Jonathan Derbridge Special to the Arizona Daily Star March 10, 2022

The following is the opinion and analysis of the writers. They are faculty members at the University of Arizona:

As the U.S. makes a \$1.2 trillion infrastructure investment, including many projects in Arizona, environmental impact statements will spring up like roadside summer poppies. These statements are required by the National Environmental Policy Act of 1969 (NEPA), intended to bring science and community input to bear on projects requiring federal approval.

NEPA has been called an environmental Magna Carta. Yet the legislation's goal of informed, democratic decision-making was difficult to achieve without 21st century technology.

For the past 50 years, NEPA has produced valuable information. If you were concerned about how bridge construction might affect soil erosion on nearby cropland, you could consult NEPA reviews from similar situations to project outcomes, look for techniques and technology effective in preventing erosion, or explore strategies that stakeholders had found to accommodate infrastructure and agriculture in Arizona and beyond. But only if you were able to locate the paper trail. There was no central, searchable means to access these documents. The knowledge created under NEPA was an untappable resource.

We created NEPAccess, a free online platform at NEPAccess.org, with colleagues and practitioners across many disciplines. We use data science, machine learning and user experience to continuously make the system more powerful and intuitive. This is more than a digital card catalog. NEPAccess starts with a powerful document search function and will eventually support collaboration, map-based interactions and more.

NEPAccess has already engendered discovery. Undergraduates from the University of Arizona's School of Natural Resources and the Environment are doing first-of-its-kind research on environmental justice. Every environmental impact statement includes an environmental justice section where effects on people of color, low-income residents and tribal communities should be projected. The researchers found that only a small number acknowledged any impact on these groups. They found their sources through NEPAccess, which currently makes nearly 8,000 studies available. This remarkable finding is leading the students to further research into the topic — research that must be done if our \$1.2 trillion is to be spent promoting equity rather than diminishing it.

An experienced environmental consultant and hydrologist wanted information on mining-related NEPA processes conducted by the U.S. Army Corps of Engineers. Without NEPAAccess, his search would have been futile, but with an ingenious use of the search functions, he was able to find everything he needed. Insights from users like these are being used to continually refine the NEPAAccess search functions, thereby accelerating the benefits for everyone.

Users tell us that they are making better decisions with NEPAAccess. We hope that ready access to a wealth of information will make environmental reviews proceed more efficiently and allow stakeholders to better estimate timelines. This will be crucial for tribes and towns hiring consultants or trying to put shovels in the ground before winter.

Access to information will benefit all users. The beauty of NEPAAccess is that it is fed by facts and available to everyone. It puts science to work on practical questions of tremendous import.

Many of us on the NEPAAccess team were drawn to science and teaching because we believe that knowledge can build a more sustainable, just world. We partner with stakeholders and focus on usability, making collaboration easier, and decision-making faster and wiser. The Biden administration has made climate justice and environmental justice priorities. Science can show us the way, but only if we know it exists and can access it in a timely manner.

Half a century after President Richard Nixon signed it into law, NEPA is coming into its own. It can simultaneously protect our environment and historically disadvantaged groups of people as Americans make an unprecedented number of decisions affecting our shared environment. NEPA creates a framework for those decisions to be smart and fair. The federal government, and all of us, can seize this opportunity to develop an initiative that renews our infrastructure while honoring our values.

The writers are faculty members at the University of Arizona. Laura López-Hoffman is a professor in the School of Natural Resources and the Environment and research professor at the Udall Center for Studies in Public Policy. Marc L. Miller is the Ralph W. Bilby professor of law and dean of the James E. Rogers College of Law. Sudha Ram is the Anheuser-Busch professor of MIS and Entrepreneurship & Innovation in the Eller College of Management. Jonathan Derbridge is a research scientist the School of Natural Resources and the Environment.