

2. Project Summary

Innovative Information and Visualization Technology for Sustainable Economic and Regional Development: A Watershed Partnership

We propose a watershed-scale partnership that will extend the information and visualization innovations of university research to a group of local and regional government agencies and private companies, all seeking to address crucial problems in sustainable economic and regional development. In forming this partnership, we have defined three interlocking objectives: (1) create a Watershed Planning Support System that enables greater efficiency in corporate environmental management systems and government regulation, (2) produce an economic assessment of policy options regarding water quality impact mitigation and Best Management Practices (BMPs), and (3) incorporate underrepresented minorities and students into our collective effort by establishing a “sustainability science” educational and workforce development program in the San Diego River Watershed. On this last point, participants will be trained to collect field data useful for the economic assessment and task of building the Watershed Planning Support System. The partnership’s overarching goal is to work together in building an integrated watershed-based information system and set of visualization tools that can help break down barriers to effective planning and environmental management at a regional/watershed scale.

Intellectual merit. Increasingly efforts to promote economic development and quality of life must embrace a broad metropolitan and regional scale. Yet many barriers stand in the way, including difficulties associated with integrating, sharing, and managing information across jurisdictionally fragmented regional landscapes. Fortunately, the exponential growth of computing power, connectivity and flexibility is now enabling us to study, visualize, understand, and potentially manage, vastly more complex living and engineered systems than was hitherto possible. Along these lines, our partnership for innovation extends recent university advances in information and visualization technologies to specific regional watershed planning problems—especially water pollution. Our collective strategy exploits the potential of geospatial data and metadata management, digital libraries, 3D visualization, online interactive mapping, and solid terrain model technology. The crux of our innovation outcome will be the way we bundle and apply these tools in support of watershed planning, environmental management and education.

Broader impact. We will make the capabilities and products developed for professional decision making and information exchange readily available across the web, as well as for physical exhibits on public display or loan to schools. Our partner agencies are committed to incorporating our “Watershed Planning Support System” and other innovative outcomes into their ongoing institutional and business operations. We anticipate a long term and broad impact on a number of major regional planning initiatives that will be implemented over the next decade (the Regional Comprehensive Plan, Basin Plan Update, San Diego Watershed Management Plan). A major objective is to broaden the participation of underrepresented groups in watershed planning and management. In collaboration with the San Diego River Park Foundation, we will work with the Urban Corps of San Diego to establish a system of on-site field checks that document the location of environmental impact mitigation sites within the San Diego River Watershed. The Urban Corps is a local non-profit conservation group, nationally recognized for training and education of young adults from traditionally underserved communities. While our initial partnership project will focus on specific issues in our region, the methods we develop will be applicable to other problems in other areas. Our plan builds on a foundation laid by the Regional Workbench Consortium (RWBC), a newly created “knowledge-action collaborative” geared to linking science and technology to policy and planning for sustainable city-region development <<http://regionalworkbench.org>>. Through the RWBC, outcomes of the grant will be shared regionally through our partner organizations, as well as nationally and globally through the Association of Collegiate Schools of Planning (ACSP), the Global Planning Education Association Network (GPEAN), and the Sustainability Science Initiative.