

# Environmental Sciences and Planning

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## Focused, Integrated Services to Advance Your Projects

We want to understand the intricacies of your project. That's why it's important for us to sit down with you and carefully listen to your needs. What are the environmental components, and how can we apply our vast expertise to prioritize our work and advance your project? This approach seems simple enough, but the most brilliant solutions begin with these conversations.

**WE DELIVER** high-performance built environments that value the economic, social and natural environments.

- **Deliver**...meaning your project gets completed, functions well and meets your requirements.
- **High-Performance**...meaning your project meets metrics across the triple bottom line (economic, community, environment).

## Achieving Sustainable Outcomes With Your Mission at the Forefront

One of our most iconic projects, the Hoover Dam Bypass — deemed a modern-day engineering marvel — was built with state-of-the-art concrete and steel applications. As the centerpiece of the 3.5-mile corridor, the 1,900-foot Colorado River crossing carries 17,000 vehicles a day, contributing immensely to interstate commerce and maintaining security near a 726-foot-tall dam. While we designed the bridges and roads meticulously, we also carefully monitored the project for environmental compliance — observing biological resources like the desert tortoise, Gila monster and bighorn sheep. A project of this magnitude does not get off the ground without close examination and follow-through on the social and environmental factors.



We have delivered services like these numerous times, supporting agencies and private clients with their most critical assignments. Together, we advance projects in a sustainable manner.

## Making Efficiency Possible Through Partnerships with Regulators

This process should be seamless for you. We understand the wide-ranging environmental regulations and legislation as they evolve, and we help navigate the changes. With more than 225 offices worldwide, it's likely we have worked with agencies in your project's locale. These partnerships enable your project to move forward.

Our cultural resources professionals completed surveys on the U.S. Army's White Sands Missile Range, covering more than 100,000 acres in less than a year. The transition to a digital data collection process expedited field data gathering and survey reporting. This transition has significantly changed all aspects of project execution and work flow, allowing us to submit executive summaries to clients with the field crew still in the project area. At White Sands, we submitted draft and final survey reports in unprecedented, compressed time frames. **We anticipate potential roadblocks and apply best practices and tools** (e.g., mobile applications for cultural resources and wetlands). Our approach saves you time and money by providing credible and defensible solutions through the entire life cycle of facilities and infrastructure.

## Addressing Your Needs With the Right Industry Leaders

We bring together the right people for each individual project. The collaboration of our leaders and resources produces best-value outcomes for you.

## Carrying Out Objectives

The U.S. Navy's mission is to maintain, train and equip combat-ready Naval forces capable of winning wars, deterring aggression and maintaining freedom of the seas. These are important responsibilities. The U.S. Navy also has a responsibility to protect the environment while conducting missions, and they turn to us for marine species monitoring. Our experts, in collaboration with the best scientists and universities around the globe, study marine species distribution, monitor behavioral responses and map the sea floor. The Naval Facilities Engineering Command has praised our ability to understand requirements and carry out the objectives of their program.

## Providing All-Service Teams

We provide more than 1,000 environmental professionals to our global client base, including environmental planners and permitting experts, archaeologists, historians, biologists, ecological restoration specialists, wetland and stream ecologists, fisheries scientists, toxicologists and marine species experts and scientists. We are ranked No. 4 in Environmental Science and No. 9 in the Top 200 Environmental Firms by Engineering-News Record.



### **ACOUSTICS AND NOISE**

Humans generate sound whether they are active on land, in the air or at sea. The effects of these sounds on humans and animals vary from subtle behavioral responses to physiological damage. We advise industry, federal agencies and policy makers on noise-related issues. Whether we're developing a rocket noise model, calculating underwater noise level effects on marine animals, performing noise and vibration analysis for transportation projects or designing and implementing an extensive study of the Arctic soundscape, we're able to assist our clients with their needs.

### **AIR QUALITY**

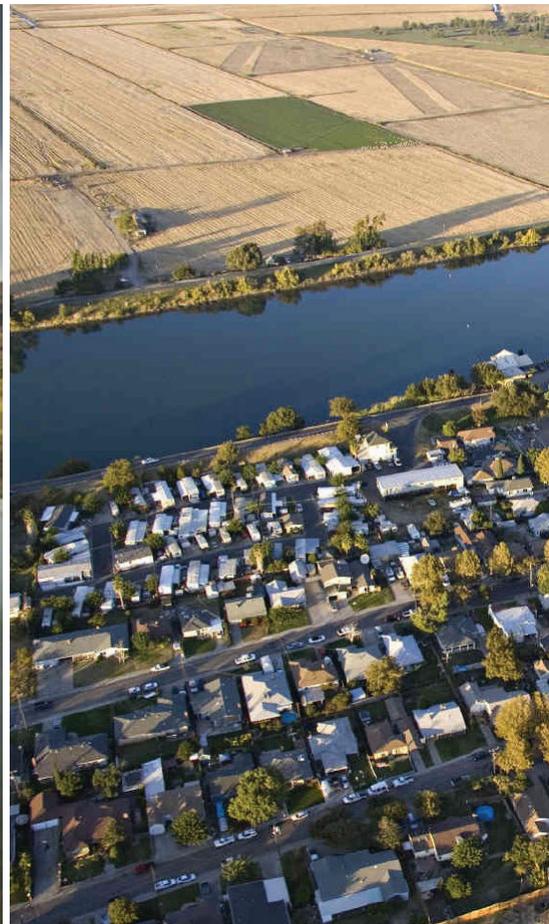
We help our clients achieve development goals while improving and protecting the world's air quality. Air quality, including greenhouse gas emissions, remains one of the most persistent and visible issues of concern to the public, and industrial sources of air emissions must be carefully managed. Balancing regulatory issues, public perception and the need to accomplish project objectives in a cost-effective, timely manner is a challenging task. We work with you to achieve a simplified balance through proactive and comprehensive air quality program management. Our engineers and scientists apply combined expertise to help maximize operating flexibility, minimize compliance burdens and streamline permitting and environmental review.

## **What We Do**

- Acoustics and noise
- Air quality
- Biological and ecological sciences
- Compliance monitoring
- Cultural resources
- Ecological restoration
- Environmental compliance
- Environmental measurements
- Environmental permitting
- Environmental remediation
- GIS/geospatial solutions
- Marine and coastal sciences
- NEPA/impact assessment

### **Related Services**

- Construction services
- Economics and finance
- Geotechnical
- Public involvement/public outreach
- Real estate services
- Surveying
- Sustainability



### **BIOLOGICAL AND ECOLOGICAL SCIENCES**

Our wetlands and wildlife biologists, ecologists, botanists, foresters, threatened and endangered species specialists, fisheries scientists and additional natural scientists have experience throughout the United States conducting all types of plant and animal surveys, habitat surveys, wetland delineations, biological assessments and monitoring. Our experts have specialized training and a thorough knowledge of regional threatened and endangered species and ecosystem characteristics.

### **COMPLIANCE MONITORING**

Monitoring compliance is essential to the success of an environmental management program. We work with you to understand and comply with environmental obligations. From construction monitoring and site inspections to full environmental protection plans, our environmental compliance services enable you to meet project deadlines while adhering to the regulatory requirements associated with your project.

### **CULTURAL RESOURCES**

Our cultural resources group draws on diverse professional experience and educational backgrounds. We employ dozens of professionals — archaeologists, ethnographers, architectural

historians, historians and historic architects — many of whom meet or exceed the Secretary of the Interior’s Professional Qualification Standards pursuant to 36 Code of Federal Regulations 61, as amended, in their fields. Our team consists of professionals with unmatched knowledge of cultural resources policy, regulations, legislation and practices at the federal, state and local levels. We have proven track records with state historical preservation offices and tribal communities, which allow us to work through consultation processes and resolve issues to keep projects on schedule.

### **ECOLOGICAL RESTORATION**

Ecosystem restoration is a sensitive process, demanding full integration of science, engineering and communications. Our success with large restoration projects stems from our ability to assemble diverse teams and manage all aspects of the restoration process. We have partnered with federal, state and local agencies on nine of the largest ecosystem restoration efforts in the United States. We help you align the goals of sound business and environmental responsibility through compensatory mitigation of wetlands or other waters. Our staff members have designed more than 500,000 linear feet of stream channel and hundreds of acres of restored or enhanced wetlands for mitigation purposes.



We lead the way in technology with our **mobile applications for cultural resources and wetlands** — using new tools to streamline data on your project.

### ENVIRONMENTAL COMPLIANCE

Across the industry, regulatory challenges persist in areas associated with meeting Clean Air Act, Clean Water Act and many other environmental regulatory requirements. These challenges include timely new source and pollution prevention permitting and management, cost-effective compliance with existing permit requirements and regulations and minimization of liability. We help clients minimize potential health and environmental risks and comply with regulatory requirements while remaining attentive to client objectives, schedules and budgets.

A key part of compliance management is helping clients understand and develop strategies for agency engagement. Our success stems from a thorough knowledge of regulatory policy and staff at the national, regional and state levels. We partner with clients to develop tailored approaches for interacting with agencies. Our certified inspectors and assessors have wide-ranging expertise in resolving facility environmental compliance challenges through the development and maintenance of environmental management systems (EMS) and materials management and disposal plans. We conduct multimedia environmental compliance audits, and provide proof of compliance through training certifications and inspections.

### ENVIRONMENTAL MEASUREMENTS

Our field expertise and diverse staff allow us to measure and monitor numerous environmental areas essential to your project's success. We have a fleet of boats and in-house equipment that allow us to design and fabricate customized sampling apparatuses to meet your needs. Our laboratory experts use state-of-the-art microscopes and digital image capturing equipment for taxonomic identification, life stage determination and measurement. We maintain an extensive reference museum and literature collection that is continually updated to confirm and document identifications.

### ENVIRONMENTAL PERMITTING

We navigate through the environmental permitting maze with a streamlined approach. Our teams work with you to determine the need for permits, and we develop and implement the most appropriate permitting and compliance plans for project approval. The strategic application of permitting expertise during project planning and design helps minimize coordination costs and schedule impacts. We have the proven ability to work and negotiate with agencies, such as the U.S. Army Corps of Engineers, U.S. Coast Guard, National Marine Fisheries Service and U.S. Environmental Protection Agency.



Our tracking and scheduling tools keep you informed on the status of your permits and potential impacts to schedule and budget.

#### **ENVIRONMENTAL REMEDIATION**

We provide innovative and cost-effective solutions for your environmental remediation, engineering and construction needs. With extensive experience in conducting investigations and assessments of sites to evaluate contamination from a variety of release sources, we concentrate on delineating the vertical and horizontal extent of soil and groundwater contamination.

We have completed more than 800 restoration projects, including the remediation of hazardous, toxic and radioactive waste (HTRW) and participation in the military munitions response program (MMRP) on both a time-critical basis and a non-time-critical basis. U.S. federal clients, including the Department of Defense and municipal industrial clients, have used our full-service HTRW and MMRP expertise for more than 50 years.

#### **GIS/GEOSPATIAL SOLUTIONS**

Not only do our skilled professionals use geographic information systems (GIS) as a mechanism to store and manage data, they also use it as an analytical tool to help you answer site- and project-specific questions. When implemented fully, we can provide you with a complete spatial reporting tool that you can continue to use and maintain. Our skilled professionals successfully collaborate with scientists and clients to develop meaningful work products. We have extensive proficiency in a variety of advanced statistical analyses and modeling techniques, using flexible designs to accommodate our clients' future needs and evolving requirements.

#### **MARINE AND COASTAL SCIENCES**

We possess extensive and varied marine species survey and monitoring experience, including marine mammals, coral, fish, invertebrates and other marine life. We have managed and participated in data collection efforts in the Atlantic, Caribbean, Pacific, Gulf of Mexico and Arctic. We specialize in addressing climate change and resiliency in coastal areas, impacts on natural and built ecosystems and adaptation strategies for sea level rise and habitat restoration. We combine proven methodologies with innovative technologies to create solutions for a wide range of challenges, offering customized services backed by the strength of a full-service engineering, design and environmental consulting firm.

#### **NEPA/IMPACT ASSESSMENT**

We help you develop legally defensible documents that hit the mark so projects are executed. Our team has a reputation for preparing successful environmental impact analyses and documents in compliance with the National Environmental Policy Act (NEPA), Canadian Environmental Assessment Act, and similar state and provincial laws and regulations. Our thorough understanding of agency requirements and processes, public involvement and stakeholder outreach helps anticipate and address the relevant issues found in environmental documents to effectively tell a story and create timely approvals.

## **About Us**

HDR has partnered with clients to shape communities and push the boundaries of what's possible since 1917. We specialize in engineering, architecture, environmental and construction services. With nearly 10,000 employees in more than 225 locations around the world, we think global and act local.