



# CH2M's Collaboration with The Nature Conservancy



Photo taken by Carlos Fernandez, TNC

## How it began

In 2014, The Nature Conservancy and CH2M forged a collaborative agreement to improve the resilience of coastal and inland habitats, protect and restore freshwater supplies, and promote urban conservation efforts. Through this collaboration, we are developing the business case for natural infrastructure solutions, applying them to new challenges in urban design and built and natural ecosystems.

Natural infrastructure harnesses the power of nature to address water quality, climate adaptation, environmental remediation, and resource challenges. We've discovered that solutions based in nature or that combine built and natural infrastructure (hybrid solutions) deliver environmental and financial benefits equal to or better than built infrastructure alone. By implementing these natural or hybrid solutions, at the same time we are calculating their environmental and financial benefits through what we call natural capital.\*

Our joint mission is to connect sound engineering principles and natural infrastructure

solutions to improve the environmental health and socioeconomic vitality of communities in which we live and work.

## Transforming engineering practice

This game-changing collaboration brings together a global nonprofit leader in science and conservation with a global leader in innovative engineering design. Together, the Conservancy and CH2M invest in projects and thought leadership opportunities, partnering with innovative public and private entities who are building natural ecosystem



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designs into their critical infrastructure projects and everyday business practices.

Collaboration between engineers and scientists delivers better conservation outcomes. In simple terms, engineers like to build things they know will work, while scientists are more comfortable with experimentation. Scientists who know how to "speak engineering" and engineers who value science can build bridges between these disciplines and develop new, more sustainable solutions to complex challenges. As the Conservancy's Jen Molnar wrote in Bringing Nature into the Engineer's Toolbox, "Now the conservation community is wisely working directly with engineers—not just to reduce impacts, but to jointly find solutions for both people and nature."

\*The Conservancy engages in nature-based solutions, design, development, and installation with multiple organizations in the engineering industry.

# Making the business case for natural infrastructure

Here are some results of our collaboration to demonstrate how nature-based defenses can protect communities, critical infrastructure, and environments against climate change:

## [Pensacola East Bay Oyster Restoration.](#)

The Conservancy hired CH2M to manage the monitoring, permitting, and design of a 6.5-mile restoration project, which will help restore a healthy, functioning oyster habitat in East Bay near Pensacola, Florida. The project, funded by the National Fish and Wildlife Foundation Gulf Environmental Benefit Fund, is the first phase in a multi-year effort to restore this critical estuarine habitat system that has been significantly reduced from its former range across the Gulf's bays and estuaries.

[Metropolitan Coastal Resiliency.](#) Miami-Dade County teamed up with the Conservancy and CH2M to evaluate nature's role in bolstering coastal defenses. The partnership has brought together ecologists, economists, and engineers for two pilot projects that consider natural systems such as reefs, mangroves, and wetlands as part of the County's infrastructure solutions for reducing flooding, wave force, and stormwater runoff.

[Pipeline Erosion Control.](#) We're working with the Alabama and Louisiana Conservancy coastal teams to develop natural infrastructure solutions for erosion control at pipeline intersections for a large oil company. The team is identifying areas where oyster and wetland treatments are viable, because each pipeline crossing has different bathymetric, sediment supply, and oyster recruitment constraints.

## [Business Guide for Natural Infrastructure.](#)

CH2M and the Conservancy developed a suite of tools called "NI4Biz" with the World Business Council for Sustainable Development and other companies to promote natural infrastructure. Developed by business, for business, this practical toolset is intended to increase investments in natural infrastructure solutions by illustrating bottom-line benefits through case studies.

## [Wastewater Pollution Strategy Development.](#)

The CH2M-Conservancy Team provided a technical briefing on technologies to treat wastewater in the Caribbean and western Pacific's Coral Triangle, at scales ranging from multi-million dollar resorts to small villages lacking basic services.

[Mobile Bay Living Shoreline.](#) CH2M designed and Conservancy volunteers helped construct 6,000 feet of oyster reef to help restore intertidal marsh habitat and reduce erosion in Mobile Bay, Alabama.

## [Wastewater Treatment Technologies to Reduce Nutrient Pollution Impacts on Coral Reefs.](#)

CH2M led a webinar to connect the Conservancy's expertise about reef resiliency with CH2M's knowledge of wastewater treatment technologies, so that together we can improve public health and mitigate nutrient pollution impact to sensitive marine ecosystems. We then shared this research on the Conservancy's Coastal Resilience Web site.

## [Coastal Risk Reduction Guidance Framework.](#)

This guidance helps regions consider how to integrate nature-based solutions that will withstand the test of time and climate change. CH2M and the Conservancy recommend that



CH2M and the Conservancy received a **Diamond Award from the American Council of Engineering Companies** New York chapter for the Howard Beach Flood Risk Reduction Study and the resulting [Urban Coastal Resilience Report](#), which demonstrate that nature-based defenses, in conjunction with traditional "gray" solutions, can provide effective protection against climate-related flooding.

coastal regions develop strategic coastal resilience plans to reduce the environmental and socioeconomic risks of coastal hazards in a sustainable manner.

## [Narrow River Estuary Shoreline Assessment.](#)

We worked together to assess the Narrow River's degrading shoreline in Rhode Island and held a workshop with wildlife refuge managers from the U.S. Fish and Wildlife Service to learn from past attempts and chart a more effective course for the future.

## Contact us

Brandy Wilson  
Global Sustainability Director  
Phone: +1.208.383.6297  
brandy.wilson@ch2m.com

www.ch2m.com  
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## About CH2M

CH2M leads the professional services industry delivering sustainable solutions benefiting societal, environmental, and economic outcomes with the development of infrastructure and industry. In this way, CH2Mers make a positive difference providing consulting, design, engineering, and management services for clients in [water](#); [environment](#) and [nuclear](#); [transportation](#); [energy](#) and [industrial markets](#), from iconic infrastructure to global programs like the Olympic Games. Ranked among the World's Most Ethical Companies and top firms in environmental consulting and program management, CH2M in 2016 became the first professional services firm honored with the World Environment Center Gold Medal Award for efforts advancing sustainable development. Connect with CH2M at [www.ch2m.com](#); [LinkedIn](#); [Twitter](#); [Facebook](#).

