



BUILDING THE DIGITAL COAST:

Best Practices for a Customer-Centric Approach

This best practices document is for federal agencies building web-based products, services, and information delivery systems.

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NOAA OFFICE FOR COASTAL MANAGEMENT

coast.noaa.gov/digitalcoast

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EXECUTIVE SUMMARY

Within the Digital Coast Act, Congress included language directing NOAA to “optimize data collection, sharing, and integration and to minimize duplication” through a range of actions, including the development of a best practices document. While the resulting “Building the Digital Coast: Best Practices for a Customer-Centric Approach” provides details, a high-level list of tips is provided below.

Define the Audience. Knowing exactly who you are serving keeps the effort focused and lessens scope creep. Being very specific about the primary audience helps staff understand what technical assistance and website and product attributes are most needed by the customer.

Commit to a Customer-Centric Approach. A firm commitment to the users and their priority needs ensures that the end product or service is used and applied to address complex coastal challenges. This ethos must start with senior management and be modeled to ensure complete alignment within the entire organization.

Engage with Customers Often. While needs assessments are very helpful, regular engagement with the end user, by various members of the organization, helps staff more readily understand needs and how best to address them. This helps to establish trust between end users and the federal government. Customers are also more likely to use a resource they have contributed to or co-developed, even if that contribution is the act of providing an opinion about the website or making a request for a new product or service.

Commit to Partnerships. A successful, meaningful partnership is one where all parties work together to the benefit of each and to meet a common goal. The issues facing the nation’s coast are too immense and too complex to be addressed via a single approach. Digital Coast goals benefit from partnerships with all levels of government, the private sector, nonprofits, and various user organizations.

Don’t be Afraid to Innovate. Customer needs change, and technology advances. To keep people coming back, the enterprise needs to seek and value new ideas and work to be ahead of the curve, not behind it. People expect their websites to be user friendly and the content relevant and easy to access.

Add on the Extras. Partners communicated early on that data delivery was not enough. They also need the related tools, information resources, and training to make the data truly useful—and used!

If you have questions or would like to learn more, please contact Digital Coast staff at coast.info@noaa.gov.

BACKGROUND

In its simplest form, the *Digital Coast* is a program that delivers the relevant data, tools, and training needed by those working to make the nation's coast more resilient to hazardous weather and other threats.

Congress recognized the value of this program with the Digital Coast Act *Public Law 116-223*, Dec.18, 2020). This legislation directed NOAA to develop and maintain a best practices document that sets out the best practices used by the Secretary in carrying out the program. This document attempts to fulfill that request, using what the Digital Coast team defined as their best practices.

The NOAA staff in charge of the Digital Coast, when asked to define what makes the program unique and successful, say something along the lines of, "Listen to the customer, and act on what you hear." But this seemingly simplistic approach can be harder to implement than one might imagine, hence the need for details.

The customer-based approach manifests itself throughout the Digital Coast, including the way the website was developed and is maintained; the processes put into place to keep customer input flowing; content development, selection, and vetting; the focus on adding the tools, training, and information needed to make data truly useful; the staffing needed to reach out to customers and implement new website approaches; and finally, the commitment to being more than just a website, but also being a force that brings different groups together to keep the website relevant and used, and, ultimately, being a resource that helps increase coastal resilience for the nation's coasts.

The Digital Coast operates under the processes found in NOAA's *Model for Service Delivery* document, a framework for meeting customer needs. The document you are reading shows, in an abbreviated fashion, how these principles are implemented via the Digital Coast.

ABOUT THE DIGITAL COAST

The Digital Coast is just one of the many products and services provided by *NOAA's Office for Coastal Management*. The goal of the organization, and all Digital Coast-related efforts, is to help the nation's coasts become more resilient. The Digital Coast provides the data, tools, and training needed by coastal communities.

The content roster for the website started in 2007 with 145 data sets, five tools, and a handful of training courses. As of the printing of this document, the site now clocks in at over 3,000 data sets, 84 tools, and 173 learning products. Content comes from NOAA and almost 900 contributing partners, including nonprofits, academic organizations, the private sector, and all sectors of government, including tribes.

BEST PRACTICES START HERE

There are many moving parts associated with building and maintaining this information resource. As mentioned in the introduction, a commitment to letting customers drive nearly every aspect of the site is the most important component.

The following sections will touch on some of the ways in which this customer feedback is obtained, how it is used, and how this customer-centric approach affects staffing, website design, and more. Equally helpful, the authors hope, is information about the challenges faced with each approach.

When more detail is needed for any of these topics, please reach out to a member of the Digital Coast team (coast.info@noaa.gov). Best practices discussed include the following:

It's All About the Customer

- Defining the Customer
- Customer Service Culture
- Customer Engagement
- Staffing

Website Design

- Content Decisions
- Website Design
- Developing New Content
- More than Data
- Finding the Right Resources
- Innovation

Outreach and Partnerships

- Respecting the Consumer
 - Getting the Partner Involved
 - Outreach Methods
 - Meeting People Where They Are
 - Digital Coast Partnership
 - Private Sector Content Development
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It's All About the Customer

Defining the Customer

The issue statement that started it all back in 2007 had these components:

- Coastal managers need easy access to the best data available to help with their quest to make informed decisions about increasing coastal resilience.
- Constituents need not only data, but also the associated tools, training, information resources, and technical assistance required to actually use the data. Providing these extras helps people take full advantage of the data and other resources to the betterment of their community.
- “Coastal manager” is defined as the people who make, or help make, decisions about the future of the nation’s coasts. This list includes elected officials, planning offices, emergency managers, coastal zone management programs, research reserves, land conservation organizations, nonprofits, the private sector, and government staff. The goal is to have them use the site’s data, tools, and training to make the analysis needed for their location.

Why this is important: Being very specific about who the customer is, and what the customer needs, is essential.

The challenge: Since the focus for this website is on the people making decisions about the coast, the site and most of its content does not always play to the interests of a general public audience. Some smaller communities, and traditionally underserved populations, may feel left out, which is something website managers are striving to improve.

Customer Service Culture

Having a customer-centric spirit throughout the organization, where exceptional service is a core value, is important. While this is probably the most important attribute of the Digital Coast effort, describing and implementing this corporate culture is difficult.

Why this is important: There can be disconnects between what data and information providers want their audience to find important, and what the audience perceives as being relevant to needs. Letting audience needs drive the approach is impossible without unwavering support from all levels of management and staff.

The challenge: The number of books focused on changing corporate culture provides evidence regarding the difficulty of this task. With new and existing staff, ensuring that this customer-centric culture continues takes consistent effort.

Customer Engagement

Needs assessments, user profiles, usability studies, focus groups, one-on-one conversations, evaluations—there were numerous ways customer feedback was obtained as the Digital Coast concept was evolving.

This emphasis on user input continues today. Several mechanisms are used, and each provides a tremendous amount of helpful information that is used to better the website and strengthen the organization's relationship with constituents. Here are some of the more visible approaches.

- **Website feedback mechanism** – In the footer of each page is a link (coastal.info@noaa.gov) for questions. Hundreds come in each month. A staff person is responsible for assigning the questions to the appropriate parties, and monitoring the process to ensure each question is answered within two business days. Thoroughness and promptness are two prized attributes of this system. The technical staff enjoy answering these questions as this exchange provides one-on-one time with consumers and continuous two-way learning, as well as pinpointing issues users may have with the products or the website.
- **Regional staff** – To provide strong customer service, NOAA's Office for Coastal Management made an organizational decision to shift additional staff to be located in the regions about 15 years ago. Now there are a variety of professionals (training, geospatial, program, and funding experts, among others) who work alongside Digital Coast constituents. These same staff also help customers understand and use the various Digital Coast resources, as well as bring back helpful customer input on needs and how the Digital Coast information is delivered.
- **Digital Coast Partnership** – The *partnership* is composed of eight national organizations (National Association of Counties, for instance) whose members represent the targeted Digital Coast audience. Representatives from these organizations provide input regarding Digital Coast content and the website. Through regular Digital Coast meetings, the partnership works on common priorities and projects, and fellows are funded who allow these groups to make gains on coastal management goals for the nation.
- **State partner organizations** – The National Coastal Zone Management Program, the National Estuarine Research Reserve System, and the Coral Reef Conservation Program are sister programs to the Digital Coast, under the NOAA Office for Coastal Management umbrella. These programs operate in partnership with states and territories, which provides improved access to Digital Coast users.
- **Evaluations** – For every training and many of the other learning products, a formal evaluation is included to get customer input on that training and ideas about future Digital Coast efforts.

Why this is important: There is no one best way to get customer feedback. Customer feedback, and its application, needs to be a continuous process that takes on many forms.

The challenge: Getting so much feedback can make it hard to prioritize needs. But because so many people are involved, and so many different mechanisms are used, there is no reliance on any one sector or approach. Most of the time the focus for the upcoming year is based on what is heard from more than one group, more than one time. There is usually a surprising amount of overall consensus.

Staffing

There are many behind-the-scenes technicians who keep the Digital Coast running every day. These professionals develop and maintain the data delivery system, implement the ever-evolving security measures, keep on top of new advances in web delivery systems, update the website as needed, design new pages and new products, and more. It takes a lot of human effort. All told, there are approximately five staff who handle the coding and the other unseen but important “under the hood” work needed to keep the website functioning. But coding and web upkeep is only part of the equation.

- Staff are specifically assigned to manage questions submitted to the website, gather usage statistics, and ensure that content is not dated and links are active. All content is edited by a professional editor before it goes on the site.
- Regional staff show constituents how to downscale national-level Digital Coast content to help them accomplish their regional or local-level goals. Regional staff also bring customer feedback to the organization, which is used to improve the site.
- Outreach staff work with project teams to develop campaigns designed to get the Digital Coast products in front of the right people. Dedicated staff serve as contacts to Digital Coast Partnership organizations to ensure that partners have the information they need. Another individual manages the [Digital Coast Fellowship program](#), an on-the-job education and training opportunity that advances the goals of the Digital Coast and the partner organizations.
- Numerous staff are involved in creating the customer content that goes on the site. There are content leads for each of the main sections of the Digital Coast who participate in monthly meetings designed to address issues and keep the website in tip-top shape.

Why this is important: Nothing is easy, nothing is cheap. If you want a good product, you need the right people dedicated to making it happen.

The challenge: What is a reasonable return on investment? For the Digital Coast, if there is a misspelled word or a broken link, or a new page that needs to go up, these tasks are mostly handled the same day. Developing a new tool, however, takes many months, if not years. Figuring out what is reasonable, and ensuring that everyone understands their role and the importance of it, is a constant challenge.

HOW DO WE KNOW THE SITE IS SUCCESSFUL?

Web statistics help determine who and how people are using the site. These same statistics help the NOAA team determine which changes and upgrades can best improve the user experience and the marketing of the Digital Coast.

Over the years, web statistics have documented audience expansion for the website. Statistics from 2021 through 2023, for instance, show a 47 percent increase in website visitors as compared to visitors from 2018 through 2020. Web statistics also help judge customer satisfaction. Time spent on a page, for instance, is a standard consumer satisfaction metric. The average time on this site, as of October 2023, is 6:30 minutes. For comparison, the industry benchmark standard is 53 seconds, and the average for government sites is 2:36 minutes.

But numbers alone don't tell the story. For one thing, the website is designed to reach a specific audience, which means usage numbers will be lower than may be the case for a website designed for a broader audience. Understanding the potential universe of users helps bring clarity to the statistics.

Another feedback mechanism: anecdotal information. The hundreds of technical assistance requests that come in via the website's "ask for help" feature provide vital user feedback. Opportunities for feedback are also present during the side-by-side work the agency's regional staff undertake with the user community, as does the organization's relationships with the Digital Coast Partnership, attendance at various national and local conferences, and the multitude of regular interactions with state partners. Details about each of these approaches is discussed throughout this document.

Website Design

Content Decisions

While much of the Digital Coast content comes from the NOAA Office for Coastal Management, Digital Coast users need quick access to content from other organizations, too. That’s why the Digital Coast now has over 900 contributing partners. A variety of organizations, including the U.S. Army Corps of Engineers, U.S. Geological Survey, and National Geodetic Survey contribute content for distribution via the Digital Coast.

When working with content from this many organizations, developing criteria for determining what goes on the website is important. The two most important criteria are relevance for the target audience, and ensuring that the data and information are from an authoritative source and are the best available. Best available data and information are transparent, technically credible, and usable by the intended audience.

While there is a team approach toward making content decisions, one person is the designated lead for each section (data, tools, training, stories from the field). Having these people “own” portions of the website helps keep the content in check, ensures that each section is running smoothly, and allows the various sections to feature a consistent approach throughout the site.

Why this is important: Users want easy access to the best available information, which makes the vetting process very important. Assigning a staff lead to a specific portion of the website builds in ownership and means someone is paying attention and making good decisions for the betterment of their section and the site as a whole. For the almost 900 partners who contribute content, the Digital Coast provides a means to greatly expand the reach of their products, while also improving the vitality and reach of the Digital Coast.

The challenge: Website section leads must be careful to not create website “junk drawers” and be free to say “no” to proposed additions to the website, as appropriate. Less is often more.

Website Design

“The Digital Coast is not your usual government website.” What we believe is meant by this comment from a site user reflects the site’s commitment to giving the customer what they want without a lot of fanfare. Compare that to a technical paper. Usually there is a statement of the problem, followed by the history of the problem, the partnerships and funding put together to address said problem, the options tried, and finally, the results. Many websites present their material using some variation of this same process. The Digital Coast turns this approach on its head by giving people what they want (the data, the information, the lessons learned) first, followed by the details and supporting material.

Accessibility in web design and language is important, too. Content is written at the level recommended via federal government standards. Pages focused on tools and training may use more technical terms, but even this text is made appropriate for a broad audience. The information is accurate and up to date, but extra care is given to communicate in a way that is clear and easily digestible.

Furthermore, even though much of the site caters to a technical audience, they are often charged with sharing the information with a broader, less technical audience. The technical user is appreciative of the plain language approach. Additionally, the Digital Coast exceeds the minimum standards identified in the Americans with Disabilities Act by maximizing accessibility and enhancing the user experience through universal design, which is the design and composition of an environment so that the product can be accessed, understood, and used to the greatest extent possible by all people.

Another important design component is making each section of the website, content, and branding operate in a similar fashion. In much the same way that a person expects similarities regarding car components (steering wheel, brakes, windshield wipers), people who visit the Digital Coast will find it easier to use than many websites because of the similarity of the landing pages and the information provided (landing pages are viewed before one jumps into using the data, tool, or training). The seamless integration of the content also helps the user trust the quality of the content.

Why this is important: Consistency within the website helps users quickly ascertain if the product of interest is what they need. This template-based approach is just one of many steps the website designers use to help users get to what they need as quickly as possible.

The challenge: At first, the template-based approach for each Digital Coast resource can seem boring and ineffective to staff. But once they get used to it, they see how this approach is better for the consumer and how it allows web developers and the content team to focus more on how the actual product operates.

Developing New Content

When people ask, the Digital Coast team listens and invests resources to address the emerging needs. When technology provides a new capability, staff work to deliver it. Two examples are provided: risk communication and high-resolution land cover data.

Risk communication is a burgeoning interest for Digital Coast users, so staff acquired the needed expertise and began offering training classes and various information resources to answer user demand. For land cover data, the organization provided 30-meter resolution data for about 20 years, but as soon as it made reasonable economic sense, and the technology was available to deliver a product with a higher resolution, the agency partnered with the private sector and started developing and delivering the much requested 1-meter resolution data product.

Why this is important: Providing the products the customer wants and can readily use is at the core of good customer service. This involves time, money, work, and a willingness to change.

The challenge: Customer needs evolve. The organization must be willing to adapt to be aware of and meet these changing needs. Staff also need to be aware of technological advances that can hopefully give the customer an even better experience or information resource than what was requested.

More than Data

Data is the foundation of the Digital Coast. Data composes the largest content section, and it's where the highest percentage of visitors go, so it makes sense that much effort is focused on making the data easy to discover, access, and use. While that effort is appreciated by the consumers, what also sets the site apart from many others is the “more than” part—the tools, training, technical assistance, and information resources provided in support of data usage.

Many people need this ancillary material if they are to actually *use* the data to help make the hard choices needed to secure the future of the nation's coasts. That's why many data sets have associated ancillary materials, and these ancillary materials point back to the data as well. It's a web of connected information and services that attempts to bring what's most relevant to the consumer.

Many of the information resources, particularly the training section (known as the “Digital Coast Academy”), also provide numerous products and services that exist independently of the data. The risk communication related materials, for instance, aren't tied to the data sets, but nonetheless represent the relevant information and skill-building assets communities are requesting. Providing this type of information has helped secure the Digital Coast's reputation as an information powerhouse for and about the coast.

Why this is important: Many organizations do not have the expertise needed to use data effectively. The ancillary materials and services in the Digital Coast work to address this gap. Many constituents come to the site to expand their skills beyond data needs, which is why the training portion of the website, the Digital Coast Academy, is so robust.

The challenge: Rarely are there off-the-shelf materials or tools available to meet the specific needs of the Digital Coast audience. That means each of the ancillary materials, including the tools and training courses, represents a custom build, which can take a year or more to accomplish. That's a lot of commitment from the organization, but it is a necessary ingredient to facilitate effective data use and meet customer needs.

Finding the Right Resources

Most consumers say they want everything they need in one place, but some also say they find the Digital Coast site overwhelming. This conflicting opinion has been one of the biggest challenges for the site. There have been many attempts to address the issue, including refining the site's search functionality, refining the landing pages for various sections of the website, and changing the way products are grouped and presented.

One of the largest efforts to address this challenge occurred via the [topic pages](#). There are 12 topics on this page, from adaptation strategies to vulnerability assessments. Listed under each topic is a short description, plus links to related Digital Coast resources. A lesson learned here (and elsewhere throughout the site) is that less is more. The goal is to keep this section to a dozen topics or less, because that “I'm overwhelmed” feeling is what the website staff are trying to avoid. The same is true regarding the resources associated with each topic. We work to stick with the most widely used products for that topic lest we perpetuate the dreaded website junk drawer.

Why this is important: “I find the website overwhelming” is the most frequent negative comment heard. This is a perception the web team is continuously working to address.

The challenge: The issues facing the coasts are complex. So are the solutions, as one size does not fit all, and issues usually must be addressed using many different approaches. Having this much information and resources on one site is what people want, but at the same time, users aren’t always sure what resources on the Digital Coast would best help them. Site leaders are constantly trying new approaches, and updating existing approaches, to address this issue. It’s an issue that is not likely to be solved anytime soon, but each iteration of the site hopefully improves the user experience.

Innovation

Nothing is static in a good website. That’s why it is important that website and content developers keep up with technological advances and trends. The same is true for keeping up with evolving customer needs.

Here are some examples. Web analytics say an increasing number of users are accessing the website via mobile devices. In response, the website is becoming more mobile friendly. Customer interest in engaging with previously underserved communities is increasing, so educational material on that topic was developed. The same is true for risk communication.

The primary means of downloading data within the Digital Coast provides another example. A customized approach, known as the Data Access Viewer, or DAV, was developed to answer the consumer’s desire to customize data output options. As a result, DAV gets a lot of positive mentions in the “ask Digital Coast” email system. Another area of increasing interest and work is to continue making the site more accessible to those with disabilities.

Website analytics represent an important impetus for making website changes. Trackers are installed on many pages to help the web developers see how people are using the site. Because so many people find things via search engines, creating pages for maximum search engine optimization is also important.

In addition to the website, Digital Coast leaders recognize the need for innovative products as well. Digital Coast content leaders therefore often partner with others, including the private sector, to develop the cutting edge data, tools, and training needed by the user community.

Why this is important: If the website and its content doesn’t evolve with the times, users will abandon the site. Innovation and staying current is important.

The challenge: Innovation means everyone has to stay at the top of their game at all times. It’s a challenging place to be.

SITE SUCCESS METRICS

Sample customer testimony from the website.

“I’ve been a professional GIS operator since 1998, worked for multiple levels of government in both USA and Canada. Your elevation product download process, and Lidar (LAS) specifically is the most intuitive, user-friendly experience of any GIS data download portal I’ve ever encountered.

“That you give users so much choice (feet/meters/projection, etc.) during the final download of a LAS tile is amazing, and super helpful. I also appreciate how you give direct access to files as opposed to rerouting users to some other web service where it is nearly impossible to figure out how to download.

“I’m glad to know shops like yours get to succeed; I hope you’re able to maintain and promote this service as a standard for others to follow.

“I do lots of lidar modeling for forestry and land surface applications, your service is always a good experience.”

Outreach and Partnerships

Respecting the Consumer

There is usually a difference between reality and how the organization wants people to use a product or website. For a customer-focused effort, the organization needs to get out of the way and follow the cues the consumer provides.

The Digital Coast is no exception. If this organization had its way, people would come to the front page of the Digital Coast website and be amazed at all there is to offer. They would thoughtfully search through the site's wares, looking for that perfect data set or training program. Website analytics tells us that it isn't the way people use the site. Visitors to the home page are generally lower in number and are mostly first-time users who have heard about the Digital Coast and want general information. Most come directly to their product of interest, which they found via a link or a search engine. For this reason, most of the marketing for the site is focused on individual products ("use x data—and while you are there, please visit the associated products, too") as opposed to marketing the entire site. Knowing how people use the site is also helpful when making design decisions and decisions about where to invest our staff resources.

Why this is important: The consumer is going to do what the consumer wants to do. As an organization we can suggest new things and provide new opportunities, but when the consumer speaks, via analytics and other means, the organization needs to listen—and we do.

The challenge: People often create products and websites based on what makes sense to them, so letting that go can be difficult. It's also a challenge to navigate the fine line between forcing a new approach and introducing the consumer to a new innovation.

Getting the Partner Involved

For partnerships to survive and thrive, there needs to be benefits for each party and trust between all. This trust is built over time, and through many interactions, as the parties work together to meet a shared goal.

These interactions take on many formats. For most of the products developed for the Digital Coast, for instance, there is an end user involved in the development process. Same is true for the development of many of the pages and sections within the website. This approach provides the customer with feedback that improves NOAA products, helps the customers feel some ownership of Digital Coast resources, and contributes to the trust building inherent in all successful partnerships. It is a proud day when staff are able to go back to a customer group with a new tool or website update and say, "you spoke, and we listened."

Why this is important: Partnerships in name only are not effective. Getting users actually involved in the product makes the product better and the partnership stronger.

The challenge: Involving partners takes longer, but it is so very important for a successful outcome. Keeping these customers involved helps hold the organization accountable for its customer-centric goals.

Outreach Methods

If you develop a product and no one knows about it, there's a better than average chance you've wasted your time and your organization's money. It is for this reason that there are numerous outreach vehicles associated with the products and services within the Digital Coast. These include newsletters, social media, press releases, targeted approaches to niche media, working with regional staff and partners, sharing at conferences, and more. Outreach is continuous.

One of the least exciting but most effective means of increasing website traffic is through buddy links. A buddy link is created when websites from two different organizations link to each other. Buddy links on the National Weather Service site, for instance, bring a lot of traffic to the Digital Coast and vice versa. To keep the relationship active, staff regularly check the buddy link traffic and work with various organizations to keep the buddy link flow going.

Since so many people come to the website via search engines, keeping pages focused on one topic and as lean as possible is important, as this approach keeps pages more discoverable (also known as search engine optimization).

Why this is important: "If you build it, they may not come." Seriously. Outreach is a necessary and continuous part of any product or website development.

The challenge: Any continuous effort is a challenge. Often the website or product development person is not the best person to develop the outreach materials or approach, which is another challenge.

Meeting People Where they Are

Regional staff and partners, who work side-by-side with the state and local coastal management partners, bring information about the consumer to the product and website development staff, which is very helpful. It also makes a difference if you can help this technical team have interactions with the customer as well.

That's why it is important for technical staff to attend conferences and other meetings where the customer is present and participating. NOAA's Office for Coastal Management initiated two long-standing and well-attended conferences, *Coastal GeoTools* and the *Social Coast Forum*, to bring coastal decision makers together to discuss trends and challenges and to learn from each other. These conferences also provide excellent interaction opportunities for the Digital Coast staff. Providing technical assistance and answering questions submitted to the website provides a helpful means of customer interaction as well.

Why this is important: Secondhand information is helpful, but the face-to-face interactions by the technical team seem to drive home the customer-centric approach even more. It's also gratifying for staff, and encouraging, to hear how their efforts are being used to make coastal communities more resilient.

The challenge: Finding opportunities for a broader swath of staff to interact with the customer can be difficult. Conferences are great, but so is having this staff act in a technical assistance capacity, and answering questions from the website, both of which give staff firsthand knowledge of customer needs.

MEANINGFUL PARTNERSHIP INVOLVEMENT

Digital Coast Connects

The Digital Coast Partnership initiated a “Connects” program, whereby the partners band together to address a coastal management issue at the local level.

A recent Connects project focused on three Gulf Coast communities: Jefferson County, Florida; Rockport, Texas; and Aransas County, Texas. The goal was to reduce flood insurance rates via the National Flood Insurance Program’s Community Rating System. Communities can reduce citizen flood insurance rates by reducing flooding potential as prescribed.

For this project:

- Partners from the National Estuarine Research Reserve Association, Coastal States Organization, Association of State Floodplain Managers, and American Planning Association, organizations that have data, tools, and expertise to share, helped the community understand the Community Rating System and how they might benefit.
- The Nature Conservancy and NOAA’s Office for Coastal Management helped map and calculate the area of preserved open space in each community’s floodplain, which the flood insurance program counts as a flood reduction method.
- The Nature Conservancy’s Community Rating System Explorer was used to visualize areas where current land protections would likely earn Community Rating System points and other areas that might be eligible for future open space preservation if protected by acquisition or conservation easements.

Armed with this information, Jefferson County hopes to lower its Community Rating System class and potentially reduce premiums by 10 percent. The Nature Conservancy continues to provide technical support to the three communities as part of an effort to develop a statewide Community Rating System strategy. This process will be used as a model for future Digital Coast Connects projects.

Digital Coast Partnership

This concerted effort to engage with target audiences deserves a section unto itself. The *Digital Coast Partnership* is composed of eight organizations that represent Digital Coast user groups: the American Planning Association, Association of State Floodplain Managers, Coastal States Organization, National Association of Counties, National Estuarine Research Reserve Association, National States Geographic Information Council, The Nature Conservancy, and the Urban Land Institute.

The groups discuss their membership's primary coastal issues and provide feedback on the website and its content. Representatives meet regularly in person and otherwise. The Digital Coast also provides the framework and the *Digital Coast Fellowship* program, through which these organizations come together to address coastal management-related issues through project work and other coordinated efforts.

Why this is important: Having these national organizations that represent over 100,000 members be a part of the Digital Coast program increases the site's effectiveness and visibility. Providing the framework that allows these organizations to interact to address coastal issues also contributes significantly to a key NOAA goal: making the nation's coasts more resilient.

The challenge: A significant amount of effort goes into keeping the Digital Coast Partnership a viable and engaging entity. Each Digital Coast partner, for instance, is assigned a NOAA point of contact to help keep the partner informed and engaged. Regular meetings are scheduled, and joint projects and fellowship efforts are coordinated. It's a lot of work, but the payoff is worth it.

Private Sector Content Development

Continuous discussions and contracts with the private sector in the co-development of Digital Coast content is essential. Private geospatial firms collect much of the data that are disseminated and assist in the development of decision-support tools. Private industry also supports events that enable the sharing of products, services, and customer needs.

Why this is important: Having contracts in place provides NOAA with access to essential technical expertise, offers flexibility to quickly develop needed content, and provides innovative, technical solutions to address user needs. Geospatial technology evolves quickly and having leading firms under contract enables staff to stay abreast of the advances being made across the industry.

The challenge: A significant amount of effort is required to put contracts in place and manage them effectively. A focus on the quality of the service being provided is a top priority for the Digital Coast. The challenge is to not sacrifice quality for lower cost.

UNDERLYING CONCEPTS

Service Delivery Framework and Human-Centered Design

Two important social science-based concepts, service delivery framework and human-centered design, were not specifically discussed as the Digital Coast was being developed. But in hindsight, and as the effort continues to evolve, the Digital Coast team realized these principles were, and continue to be, at the heart of Digital Coast development and maintenance.

NOAA Service Delivery Framework: a structured *approach* developed by a cross-NOAA team to plan, implement, and manage the delivery of services to customers and clients. It provides a systematic way to ensure that services are delivered efficiently, consistently, and with a focus on meeting the needs of the target audience. Service delivery frameworks typically guide how services are designed, produced, delivered, and evaluated. In the context of services, a framework might include elements such as

- Identification and understanding of customer needs and expectations.
- Definition of service processes and workflows.
- Service-level agreements to set expectations regarding performance and quality.
- Implementation of performance metrics and feedback mechanisms for continuous improvement.
- Allocation of resources and responsibilities to deliver the service effectively.
- Evaluation of the products and services produced as to their applicability to the users.

Human-Centered Design: an approach to problem-solving and product and service design that prioritizes the needs, preferences, and experiences of the end users or customers. It involves empathizing with users, understanding their behaviors, motivations, and pain points, and using that knowledge to create products or services that cater to their specific requirements. For this highly iterative process, the following key principles are included:

- Empathy: Understanding and deeply empathizing with the end users.
- Collaboration: Involving users throughout the design process and working in multidisciplinary teams.
- Iteration: Constantly refining and improving the design based on user feedback.
- Creativity: Encouraging innovative thinking to address user needs effectively.

Relationship Between Service Delivery Framework and Human-Centered Design

A service delivery framework provides the structure and guidelines needed to efficiently deliver products and services, while human-centered design focuses on understanding users' needs and preferences to create solutions that truly address those needs. Integrating human-centered design into a service delivery framework leads to better-tailored services and improved customer experiences.

EPILOGUE

Dear Reader,

Thank you for taking the time to read this document. The staff and I enjoyed putting it together, using the process as an opportunity to reflect on where we have been and where we are going, and to discuss what works well and what doesn't.

One thing we want to make clear: we certainly don't have all the answers, and we certainly don't get it right all the time.

But we do have a staff committed to getting things right, and a management team, from the Office for Coastal Management on up, that fully supports this customer-centric approach—as well as the coastal management community itself, who we serve, but who also represent an integral part of this effort. It is these people and their commitment to quality and results that make the Digital Coast work.

In closing, I want to say a heartfelt “thank you” to you all. Bringing the data, tools, and training to the people who use these resources to safeguard our coasts is very rewarding work. I couldn't be prouder.

Sincerely,

A handwritten signature in black ink, appearing to read "Nicholas Schmidt". The signature is fluid and cursive, with the first name being more prominent.

Nicholas Schmidt
Division Chief, Science and Geospatial Services
NOAA Office for Coastal Management