Subsea Fiber Permitting and Planning

AECOM has developed a cross-disciplinary approach to cable routing and permitting that helps clients to minimize risk across the project lifecycle.

Areas of Expertise

- Feasibility Studies and Siting Support
- Permit Acquisition
- Environmental and Cultural Studies
- Stakeholder Engagement
- Installation Monitoring and Oversight
- Operations and Abandonment Support

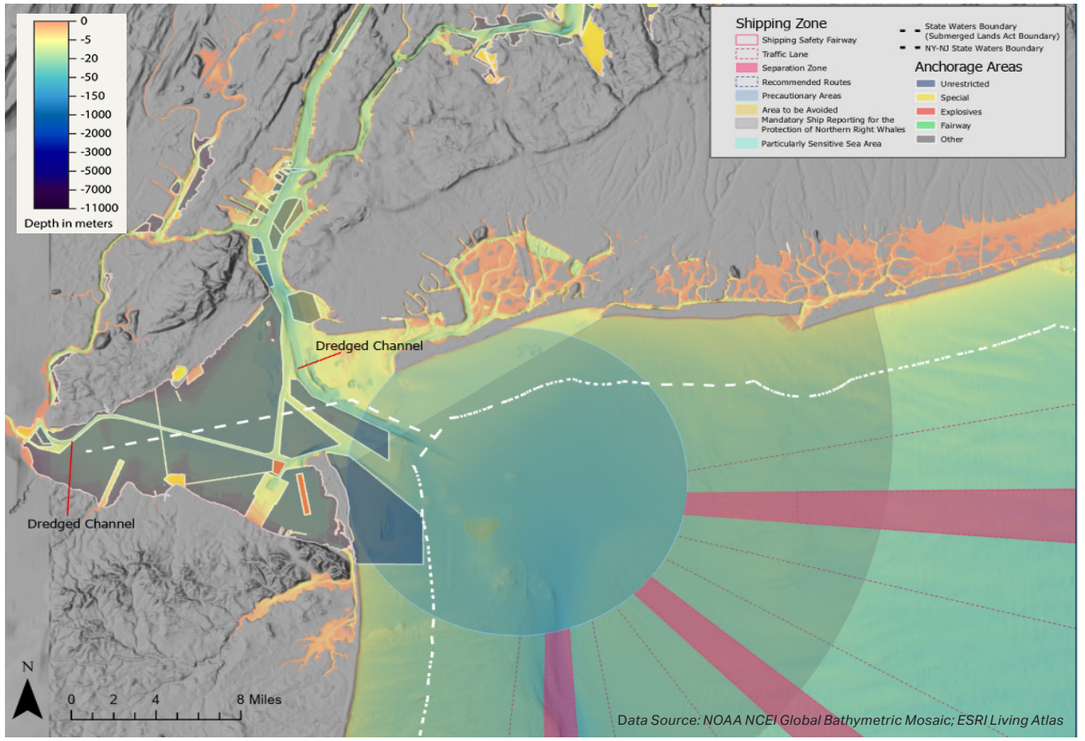
Overview

Subsea fiber optic cables are the critical infrastructure of the internet. As of 2023, approximately 900,000 miles of submarine cables have been installed globally, and demand for high-speed internet service and the need for redundancy continues to grow every year. AECOM's planning and permitting team supports the global subsea industry through all phases of planning, permitting, installing, and operating a subsea cable system.

Technical Capabilities

AECOM's strength is in its technical expertise, depth of resources, and global reach. Our technical staff are equipped with the full spectrum of scientific database tools and support staff to deliver planning and permit acquisition services, including geographic information system (GIS) specialists, marine scientists, permitting and regulatory specialists, and public outreach experts. We provide best-in-class:

- **SPECIALIZED INTERDISCIPLINARY CAPABILITIES.** AECOM has a unique team of geospatial scientists, marine and terrestrial scientists, engineers, and regulatory experts with the ability to analyze and communicate risks and opportunities throughout the project cycle for a submarine cable system.
- **SUBMARINE CABLE PERMITTING EXPERIENCE.** AECOM's team of permitting experts have decades of experience supporting marine cable projects worldwide. Our permitting team utilizes a mix of global and local expertise to obtain approvals, design management tools, and plan for and comply with permit requirements and mitigation measures.
- **EXPERIENCED TEAM OF MARINE SCIENTISTS.** AECOM has in-house marine archaeology, biology, benthic, and other marine scientists with the ability to analyze and translate scientific data and information to support project design, permitting and impact assessment, and operation.
- **PRODUCTIVE WORKING RELATIONSHIPS WITH PERMITTING AGENCIES.** We have long-standing relationships with permitting agencies through our work on a range of infrastructure projects in the coastal zone and marine environment. These relationships enable our project teams to work through both routine and unique issues that arise over the course of project planning and permitting.



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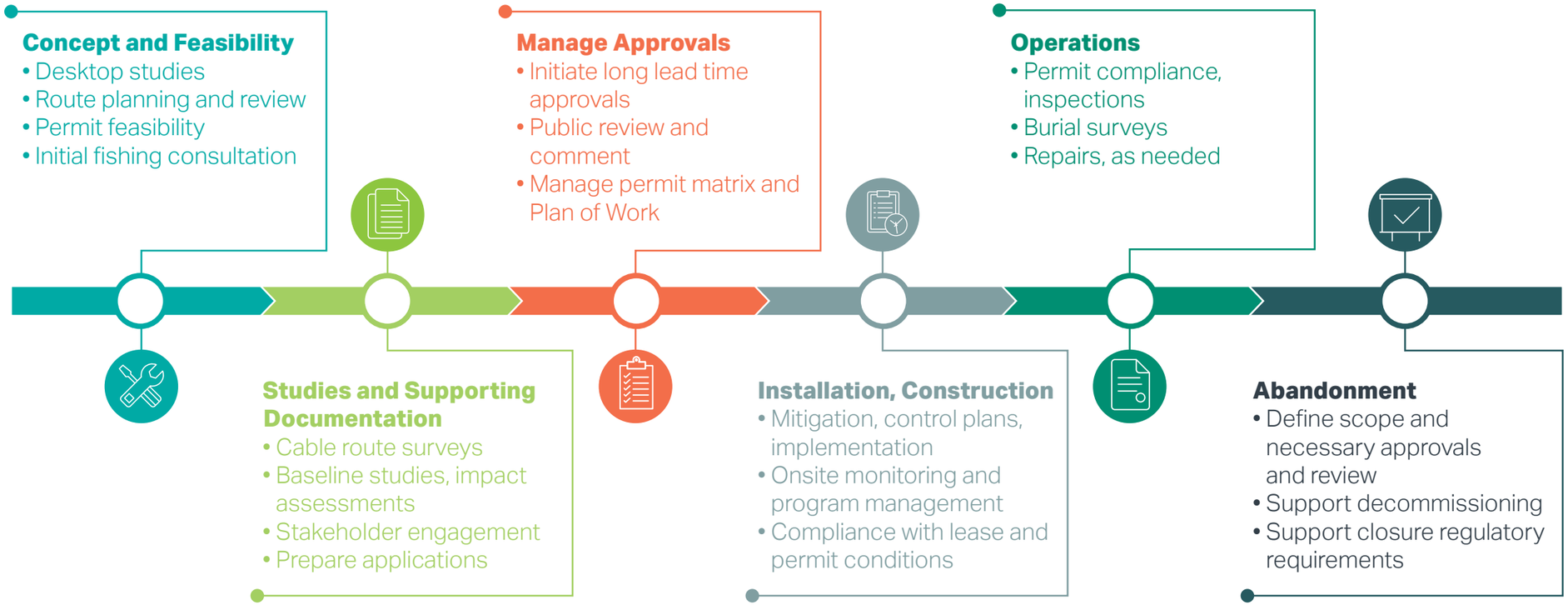
Subsea Fiber Permitting and Planning *(continued)*

- **STAKEHOLDER ENGAGEMENT.** AECOM recognizes the importance to a project and affected communities of early, frequent, and meaningful engagement with stakeholders. Our industry-leading global Indigenous engagement practice, led by Indigenous practitioners, prioritizes honest collaboration and meaningful participation.
- **HDD ENGINEERING AND CONSTRUCTION EXPERTISE.** AECOM's experienced HDD Engineering & Construction team has supported a variety of marine projects with HDD, microtunneling, conventional boring, and trenched solutions. The team has also conducted operational stress analyses, borehole stability analyses, permitting support and documentation as well as construction inspection, monitoring and as-built documentation. Our team has conducted over 2,500 trenchless designs to date and has the expertise to not only support desktop studies and early risk landing identification, but also is able to support projects as they move beyond the desktop study phase into project implementation.
- **FISHING ASSESSMENT EXPERIENCE.** Our team at AECOM is seasoned in conducting fishing assessments, understanding target catches, fishing gear types, and spatial and temporal patterns to fishing activity. AECOM's team not only recognizes the importance of assessing fishing risk within a desktop study but is prepared to support clients after the desktop study phase as a project transitions into burial plans and permitting processes.

Subsea Cable Life Cycle and Associated Scopes of Work



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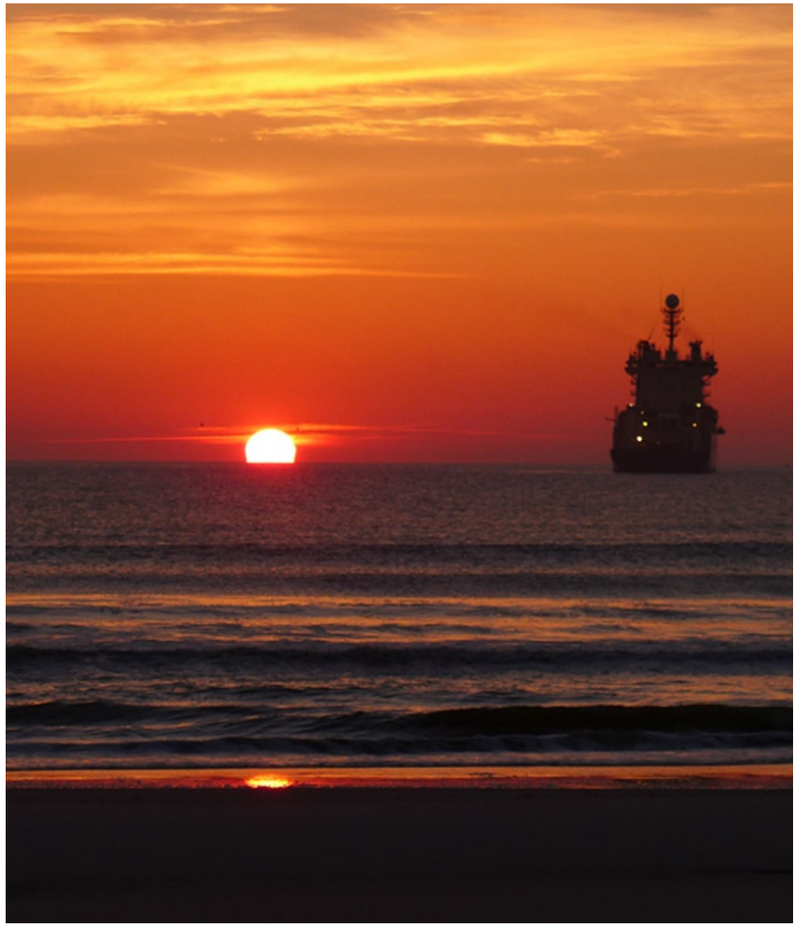
Select Subsea Fiber Permitting and Planning Experience

Drawing on experts from our engineering, permitting, and scientific teams, AECOM provides installers and system owners with the information they need to design, permit, and install successful cable systems around the world.



Examples of recent and ongoing projects include:

FEASIBILITY STUDIES AND SITING SUPPORT. Our teams of marine and terrestrial routing experts are providing geospatially-driven constraints analyses and permit feasibility studies for cable systems in broad regions and specific landing locations around the world.

2AFRICA. Permit feasibility studies, permit acquisition, environmental and cultural studies, EIAs, stakeholder engagement, and installation monitoring for 11 cable landings in 9 countries.

NUVEM. Permit feasibility studies, cable route survey and installation permit acquisition, environmental and cultural studies and EIAs for cable landings in the US, Bermuda, and Portugal.

AMX-3/TIKAL. Geotechnical Site Investigation, planning and front-end engineering design for the HDD bore and connection to the beach manhole in Cancun, Mexico.

JUNO. Permitting and submerged lands lease acquisition, environmental and cultural studies, CEQA support, Essential Fish Habitat (EFH) Assessment, Biological Assessment (BA), and agency coordination for the proposed landing in Grover Beach, CA.

AMX-1 PONCE. Marine specialist studies (biological and archaeological dive surveys), environmental documentation (BA and EFH), and permit acquisition for the first subsea fiber-optic cable on the south coast of Puerto Rico.

SEA-US OPERATIONS SUPPORT. Cable burial inspection support, onboard protected species observers (PSOs), and agency liaison support for the operational SEA-US cable in Hermosa Beach, CA.

GRACE HOPPER. Permit feasibility studies, permit acquisition, baseline studies, EFH Assessment, BA, and installation monitoring for cable landings in Bilbao, Spain and NY, USA.

EQUIANO. Permit feasibility studies (5 countries), permit acquisition, environmental studies, EIAs, stakeholder engagement, and installation monitoring for cable landings in Saint Helena and Ghana.

BLUE-RAMAN. Permit acquisition and supporting studies for cable landings in Greece, Cyprus and Saudi Arabia.

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