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Geographic Location Descriptions: Pathways and Considerations



Have Updates?

This document is intended to be updated on a rolling-basis with information gathered by Coastal Programs. If you have proposed updates or additional information, please contact -

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Disclaimer

This is not a NOAA document or NOAA guidance. The information within this document is based on the experiences of multiple Coastal Zone Management Programs and does not necessarily represent the views of NOAA. The information in this document represents experience undertaken prior to the August 2019 federal rulemaking, which amended the Program Change requirements outlined in Title 15 C.F.R. part 923, subpart H, including those applicable to adding or amending GLDs. This GLD information does not supplement statutory or regulatory requirements. Please refer to section 307 of the CZMA (16 U.S.C. § 1456) and NOAA's federal consistency regulations (15 C.F.R. part 930) and program change regulations (15 C.F.R. part 923, subpart H) for additional information. The statute, regulations and other information are available on NOAA's Federal Consistency web page at:

<http://www.coast.noaa.gov/czm/consistency/>.

*Although Pew generously supported this work, it is not responsible for any inaccuracies and does not necessarily endorse the findings.

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Executive Summary

The Coastal Zone Management Act (CZMA) reached its 50th anniversary in 2022. This landmark law was created by Congress under the clear vision to promote better coordination between the states and federal government in order to sustainably manage coastal resources and uses along the nation’s coastlines. The authors asserted that “[t]he key to more effective protection and use of the land and water resources of the coastal zone is to encourage the states to exercise their full authority over the lands and waters in the coastal zone by assisting the states, in cooperation with Federal and local governments and other vitally affected interests, in developing land and water use programs for the coastal zone, including unified policies, criteria, standards, methods, and processes for dealing with land and water use decisions of more than local significance.” (16 U.S.C. § 1451. Congressional findings (Section 302)).

To promote this vision, the implementing regulations of the CZMA offer several mechanisms and tools that states can use to promote coordination and management of coastal resources. The CZMA federal consistency authority is a powerful and novel coordination and review process that requires that federal actions that have effects on coastal uses or resources be consistent with state and U.S. territorial coastal management programs.

The National Oceanic and Atmospheric Administration’s (NOAA’s) CZMA federal consistency regulations provide for **Geographic Location Descriptions (GLD)** as a tool to help implement the federal consistency process. A GLD allows a federally approved Coastal Program¹ to routinely review certain federal activities *outside* the state’s coastal zone – e.g., activities in federal waters in the Exclusive Economic Zone (EEZ) – for consistency with those state coastal program policies that have been approved as “enforceable policies” by NOAA. The consideration of state and U.S. territory interests in planning and siting activities in the EEZ is becoming increasingly important as technology advances for marine-based industries and development activities increase. Although the GLD tool is available to coastal states, only a subset of coastal programs have undertaken the effort to obtain a GLD. This may be due to coastal states not needing or being interested in reviewing some activities in federal waters (or inland of a state’s coastal zone), the amount of effort and resources typically required to develop a successful (i.e., approved by NOAA) GLD, or gaps in the available guidance on GLD creation.²

The few states that do currently have federally approved GLDs have reported that they are useful for several reasons, beyond just expanding the scope of federal consistency authority. Contributors to this document have identified three major benefits of developing GLDs: 1) the marine spatial planning effort and data compiled in connection with creating a GLD can then be used by the Coastal Program for many other purposes; 2) stakeholder engagement and federal agency participation during the planning effort can forge and strengthen important relationships; and 3) embarking on creating a GLD helps identify and highlight gaps in existing information, which is then useful for setting research and resource inventory agendas.

¹ The term “coastal program” refers to a coastal state with a NOAA-approved coastal management program under the CZMA and terms “coastal states” and “states” refer to states bordering on the Atlantic, Pacific, or Arctic Ocean, the Gulf of Mexico, Long Island Sound, or one or more of the Great Lakes, and also includes U.S. territories and commonwealths of Puerto Rico, the Virgin Islands, Guam, Northern Mariana Islands, and American Samoa, under CZMA § 304(4) (16 U.S.C. § 1453(4)).

² As noted in the disclaimer, this GLD information document represents state experiences prior to NOAA’s August 2019, final rule amending 15 C.F.R. part 923, subpart H, which now includes an eight-component analysis states must use to justify a proposed GLD and that NOAA included to help states prepare a successful GLD submission to NOAA.

This document aims to provide a helpful resource to Coastal Programs embarking on the development of a GLD. It includes knowledge shared by staff from Coastal Programs who have been through the GLD drafting and submission process in the past, and it is intended to be updated over time to reflect additional Coastal Programs' experiences and guidance from NOAA obtained during future GLD drafting and implementation efforts.

The approaches outlined in this document are not definitive or exhaustive and there are numerous methods and approaches for developing GLDs, consistent with the eight-component GLD analysis described in 15 C.F.R. § 923.84(d). Rather, this document provides a starting point for Coastal Programs who may be considering the development of a GLD or are looking for additional supporting information on navigating the GLD drafting and submission process.

If your Program has proposed updates or additional information that would be helpful to be included in this document, please contact Coast.Permits@dlcd.oregon.gov.

GEOGRAPHIC LOCATION DESCRIPTIONS AT-A-GLANCE

Contents of a Geographic Location Description (GLD):

Detailed description of the affected uses and resources.

Where and in what densities the uses and resources are found.

How the state has a specific interest in the resource or use.

The spatial area(s) where the proposed activity overlaps with these resources, uses, and values.

Impacts to the resources or uses from the proposed activity.

A reasonable justification showing how the impacts from the proposed activity results in ***reasonably foreseeable effects*** on the state's coastal uses or resources.

Rationale for why any required mitigation may be inadequate.

Empirical data and information that support the effects analysis.

Source: Derived from 15 C.F.R. § 923.84(b).

Coastal Programs must demonstrate "coastal effects" (defined as follows):

"[A]ny ***reasonably foreseeable effect*** on any coastal use or resource resulting from a Federal agency activity or federal license or permit activity (including all types of activities subject to the federal consistency requirement under subparts C, D, E, F, and I of [15 C.F.R. Part 930]). ***Effects are not just environmental effects, but include effects on coastal uses.*** Effects include both ***direct effects*** which result from the activity and occur at the same time and place as the activity, ***and indirect (cumulative and secondary) effects*** which result from the activity and are later in time or

Purpose of Document

The CZMA provides Coastal Programs and the federal government with a mechanism to coordinate on federal activities³ that may affect state coastal uses and resources and ensure that proposed federal activities are consistent with enforceable policies of the approved Coastal Program: referred to as the Federal Consistency Authority⁴. GLDs are tools that allow states to apply the federal consistency authority outside their federally approved “coastal zone,”⁵ including in federal waters, often referred to as the Exclusive Economic Zone (EEZ) or outer continental shelf (OCS).⁶

NOAA’s Office for Coastal Management (NOAA-OCM) has promulgated regulations that implement the federal consistency provision and govern the approval of Coastal Program changes, including adding or amending GLDs.⁷ This document is based on the requirements set forth in those federal regulations (see citation footnotes throughout), and is intended to provide information that may be useful to Coastal Programs when addressing the regulatory requirements by providing state coastal program examples, experiences and approaches.

Coastal Programs have a great deal of flexibility in the formulation of GLDs. NOAA’s August 2019 final rule for program changes contains a general eight-component process that Coastal Programs must now use and that helps Coastal Programs identify content of a GLD submission, format the GLD submission, and create GLDs that meet sufficient standards for approval. NOAA-OCM’s federal consistency guidance⁸ does not address the process of GLD submission, rather focuses on the review process for the Authority when a GLD is established or not established for the given activity outside of the coastal zone.⁹ However, NOAA’s 2019 final rule (both the regulations and the preamble language) was designed to

³ For federal agency activities, federal agencies must always comply with the CZMA (regardless of whether their actions occur ‘inside’ or ‘outside’ of the coastal zone), and NOAA-OCM no longer approves GLDs for federal agency activities

⁴ The CZMA is voluntary. States and territories are not required to participate, and NOAA does not implement any section of the law on any state’s behalf. Incentives for Great Lakes and coastal states and U.S. territories to establish Coastal Programs under the CZMA include:

Federal funding to manage coastal resources and access to a specific federal grant program;
Access to the policy expertise (e.g., technical assistance, education, training etc.) of NOAA-OCM;
The ability to review federal agency activities and federally permitted activities through the Federal Consistency Authority.

⁵ For purposes of the CZMA, the term “coastal zone” is defined at 16 U.S.C. § 1453(1) to include “the coastal waters (including the lands therein and thereunder) and the adjacent shorelands (including the waters therein and thereunder), strongly influenced by each other and in proximity to the shorelines of the several coastal states, and includes islands, transitional and intertidal areas, salt marshes, wetlands, and beaches. The zone extends ... seaward to the outer limit of state title and ownership under the Submerged Lands Act ([43 U.S.C. 1301 et seq.](#)), the Act of March 2, 1917 ([48 U.S.C. 749](#)), the Covenant to Establish a Commonwealth of the Northern Mariana Islands in Political Union with the United States of America, as approved by the Act of March 24, 1976, or section 1 of the Act of November 20, 1963 ([48 U.S.C. 1705](#)), as applicable...”

⁶ 15 C.F.R. § 930.53(a)(1).

⁷ 15 C.F.R. Part 923, subpart H (Coastal Program change regulations) and 15 C.F.R. Part 930 (federal consistency regulations).

⁸ <https://coast.noaa.gov/data/czm/consistency/media/federal-consistency-overview.pdf>

⁹ NOAA also discusses GLDs in the context of OCS activities in the preamble to its 2006 final rule for the federal consistency regulations. See 71 FR 791, 793, 802-803 (Jan. 6, 2006).

clarify and improve program changes, including the information necessary for inclusion in a GLD application.¹⁰

The Oregon Coastal Management Program, in collaboration with other Coastal Programs, created this document to share knowledge and lessons learned about the development and submittal of a program change application to add or amend a GLD. This information document offers key considerations, different pathways to creation and application, potential pitfalls to avoid, recommended approaches, and lessons learned in the GLD drafting process. This document is not intended to be a prescription for addressing any particular federal license or permit activities in federal waters or other areas outside of a state's defined coastal zone. The components discussed in this document are not definitive regarding the legal sufficiency of a state's program change application.

¹⁰ NOAA "is providing states and NOAA with a more efficient process for making changes to state coastal management programs . . . and alleviates the need for previous associated guidance." 84 FR 38118 (Aug. 6, 2019).

Background: CZMA and Federal Consistency Authority

In 1972, Congress created the Coastal Zone Management Act (CZMA) to protect the nation's coastal resources and communities dependent on these resources, while aiming to balance the importance of conservation and development with respect to the national interest.¹¹ These goals are implemented through regulatory mechanisms and federal programs administered by the National Oceanic and Atmospheric Administration's Office for Coastal Management (NOAA-OCM).

While NOAA-OCM is the administering federal agency for the CZMA, state Coastal Programs are given broad discretion under the law to structure and implement Coastal Management Programs and manage their coastal uses and resources as they deem necessary, so long as they meet the requirements laid out in the CZMA and its implementing regulations. Once a state Coastal Program has been approved by NOAA-OCM, the CZMA mandates that federal agency activities affecting the resources or uses of the coastal zone be *consistent to the maximum extent practicable* with the enforceable policies of the state Coastal Program.¹² Activities requiring a permit or license from a federal agency are reviewed under a stricter standard and *must be consistent* with the enforceable policies of the Coastal Program.¹³

FEDERAL TERMINOLOGY

This document uses the term "*federal activities*" and "*federal permitted & licensed activities*" to clearly distinguish them from the overarching term "*federal*".

Federal Agency Activities: Actions undertaken by a federal agency or entities working on behalf of the agency.

Federal Permit/License Activities: Activities requiring permits and/or licenses issued by federal agencies. Private applicants seeking the federal permit or license are active participants in the permitting process and federal consistency review as afforded by

The CZMA is voluntary. States and territories are not required to participate, and NOAA does not implement any section of the law on any state's behalf. Incentives for Great Lakes and coastal states and U.S. territories to establish Coastal Programs under the CZMA include:

1. Federal funding to manage coastal resources and access to a specific federal grant program;
2. Access to the policy expertise of NOAA-OCM (e.g., technical assistance, education, training);

¹¹ Craig N. Johnston & Melissa Powers, *Principles of Environmental Law*, at 181; West Academic (2016) ("Effectuates Congress' interest in protecting the coastal areas of the United States by providing incentives for states to establish coastal zone management programs and administer the CZMA.").

¹² 16 U.S.C. § 1456. See also Johnston & Powers, *supra* note 5, at 181 ("In effect, §307 gives State's veto power over certain federal activities if the States develop adequate CZMPs.").

¹³ 16 U.S.C. § 1456. As explained by NOAA-OCM, "Federal agency activities must be consistent to the maximum extent practicable with the enforceable policies of a state coastal management program, and license and permit and financial assistance activities must be fully consistent." NOAA OCM, Federal Consistency, <https://coast.noaa.gov/czm/consistency/>.

3. The ability to review federal agency activities and federally permitted activities through the Federal Consistency Authority.

The Federal Consistency Authority is administered by Coastal Programs to ensure that federal activities with reasonably foreseeable “coastal effects” on a state’s coastal resources and/or uses are consistent with that state’s “enforceable policies.”¹⁴ The definition of *coastal effect* includes both direct effects occurring at the same time and place as the activity, and indirect effects (secondary and cumulative) that occur later in time or are farther removed in distance, but are still reasonably foreseeable.¹⁵ Within a state’s coastal zone, coastal effects are assumed for federal agency “development projects.”¹⁶ It is important to note that a decision on the same activity under a different federal law does not determine the result of this review process. For example, if the National Environmental Policy Act (NEPA) review results in use of a categorical exclusion or a finding of no significant impact, that does not mean that there are no reasonably foreseeable coastal effects for purposes of federal consistency review.¹⁷

Enforceable policies are “policies which are legally binding through constitutional provisions, laws, regulations, land use plans, ordinances, or judicial or administrative decisions, by which a state exerts control over private and public land and water uses and natural resources in the coastal zone.”¹⁸ Enforceable policies are submitted to NOAA-OCM for review, and each policy will only be approved for incorporation into the Coastal Program if it meets specific criteria outlined in federal regulation (e.g., mandatory language, a clear standard to guide uses).¹⁹ Once approved by NOAA-OCM, enforceable policies are used during federal consistency review of the federal activity in question to determine its consistency with the policies.²⁰ **A Coastal Program with an approved GLD applies all relevant enforceable policies to listed activities taking place within the designated GLD area.**

If an activity is on the state’s list of activities subject to federal consistency review (included as part of the development of the state Coastal Program, commonly referred to as a CMPs “Federal Consistency List”), the authorizing federal agency may not grant a license/permit unless and until the applicant has complied with federal consistency review.²¹ A CMPs federal consistency list also establishes expectations regarding the types of federal licenses and permits for which a Program expects to conduct federal consistency reviews on a routine basis.

¹⁴ 15 C.F.R. § 930.30; 930.50.

¹⁵ 15 C.F.R. § 930.11 (g).

¹⁶ 15 C.F.R. § 930.33 (b). (“Federal agencies shall consider all development projects within the coastal zone to be activities affecting any coastal use or resource. All other types of activities within the coastal zone are subject to Federal agency review to determine whether they affect any coastal use or resource.”) The term “development project” means “a [Federal agency](#) activity involving the planning, construction, modification, or removal of public works, facilities, or other structures, and includes the acquisition, use, or disposal of [any coastal use or resource](#).” 15 C.F.R. § 930.31(b).

¹⁷ NOAA Federal Consistency Quick Reference; <https://coast.noaa.gov/data/czm/consistency/media/federal-consistency-quick-reference.pdf>

¹⁸ 15 C.F.R. § 930.11(h).

¹⁹ 15 C.F.R. § 923.84(b).

²⁰ 15 C.F.R. §§ 930.30, 930.50.

²¹ 15 C.F.R. § 930.53(d).

While the CZMA regulations provide for a process through which states may be able to review certain unlisted activities,²² the Unlisted Activity Request (UAR) process requires a lot of effort over a short amount of time.

Table 1: FEDERAL ACTIVITIES SUBJECT TO FEDERAL CONSISTENCY REVIEW (Following NOAA-OCM Approval)		
Activity Type	Citation	Example Activities
Federal Agency Activities (i.e., actions taken by or on behalf of a federal agency))	15 C.F.R. § 930 Subpart C	- Federal Jetty & Navigation Channel Dredging - Military Installations
Activities Requiring a Federal Permit or License	15 C.F.R. § 930 Subpart D	- US Army Corps Clean Water Act Section 404 Permits - Rivers and Harbors Act Section 10 Permits
Outer Continental Shelf Activities: Exploration, Devpmt. & Production	15 C.F.R. § 930 Subpart E	- BOEM Renewable Energy Construction and Operations Plans & potential Site Assessment Plans - BOEM OCS oil and gas plans
Federal Assistance/ Funding	15 C.F.R. § 930 Subpart F	- Federal Emergency Mgmt Agency (FEMA) Mitigation Funding - US Federal Highway Administration Transportation Funding

²² 15 CFR 930.54

Geographic Location Descriptions

What is a Geographic Location Description?

The Federal Consistency Authority typically applies to federal activities occurring within a state's coastal zone boundary, which encompasses: (1) a landward component, with the coastal zone, as determined by the state and approved by NOAA-OCM;²³ and (2) a seaward (or lakeward) component, with the coastal zone extending to the outer limit of the state or territory's submerged lands jurisdiction.²⁴ Most states' seaward jurisdictions extend from the shoreline out to three nautical miles, where the federally-controlled waters of the U.S. Exclusive Economic Zone begins. There are a few states and territories, however, with coastal zones that extend to nine nautical miles—i.e., Florida (on the Gulf of Mexico side), Texas, and Puerto Rico.

The CZMA also authorizes Coastal Programs to review federal activities that take place outside their coastal zone boundaries, where such activities would have reasonably foreseeable effects to state coastal uses or resources.²⁵ Outside of the coastal zone boundary, federal license or permit activities are not assumed to have coastal effects. The burden lies with Coastal Programs to demonstrate that reasonably foreseeable effects on state coastal resources or uses would stem from the activity, pursued via the UAR process.²⁶ As an alternative to the time-sensitive UAR process, **NOAA-OCM's regulations provide Coastal Programs with the GLD tool to use when certain, specified activities taking place somewhere *outside* of a state's coastal zone boundary would have reasonably foreseeable effects on state resources/uses of the coastal zone.**

GLDs can increase the efficiency of a state program by conducting part or all of the analysis for classes of activities outside the coastal zone and provide greater security that certain federal actions will be subject to review. Developing a GLD for a federally licensed or permitted activity also provides clear, on-the-record communication regarding the fact of, and basis for, a Coastal Program's interest in that activity. This signals to the federal agency which actions and impacts the agency can expect the Coastal Program to monitor through time. Coastal Programs report that once a Coastal Program has a GLD in place for an activity, it may act as an additional prompt for federal agencies that are considering submitting a negative determination²⁷ for similar activities.

Obtaining Geographic Location Descriptions

To obtain a GLD, a Coastal Program must provide a GLD application package to NOAA-OCM, through the formal Program Change process, for approval.²⁸ This application must:

- 1) Describe *reasonably foreseeable effects* on the State's coastal resources/uses (coastal effects analysis);
- 2) Describe the specific geographic boundaries of the area for which a GLD is sought (spatial boundary); and

²³ 16 U.S.C. § 1453(1).; See also 16 U.S.C. § 1456(c)(1)

²⁴ *Id.*

²⁵ 15 C.F.R § 930.54; *id.* at § 923.84(d).

²⁶ 15 C.F.R. § 923.84(d)(1,5,6)

²⁷ 15 C.F.R § 930.35

²⁸ 15 C.F.R. Part 923, Subpart H.

- 3) Include a list of the specific federally permitted activities the state wishes to review within the GLD spatial boundary (listed activities).²⁹

The elements of a successful GLD application have varied, evolving through time, but there are some common themes amongst them. NOAA's August 2019 final rule amending the program change regulations includes broad guidelines that help Coastal Programs to develop a successful application.

While the Coastal Program bears the burden of demonstrating that the activity for which a GLD is sought will have reasonably foreseeable effects³⁰ on state coastal resources or uses, this does not mean the state must prove unequivocal direct causation. The regulations require a "reasonable showing of a causal connection" to the activity, including how the impacts from the activity would result in reasonably foreseeable effects on the state's coastal uses or resources.³¹ Best available science and data are important to support the causal connection rationale.

Due to regional differences, GLDs for the same activity types (along with the analysis of reasonably foreseeable effects) will likely vary among Coastal Programs. In addition, the rationale for the causal connection between activities and effects may change as effects become better understood through advances in research and monitoring data.

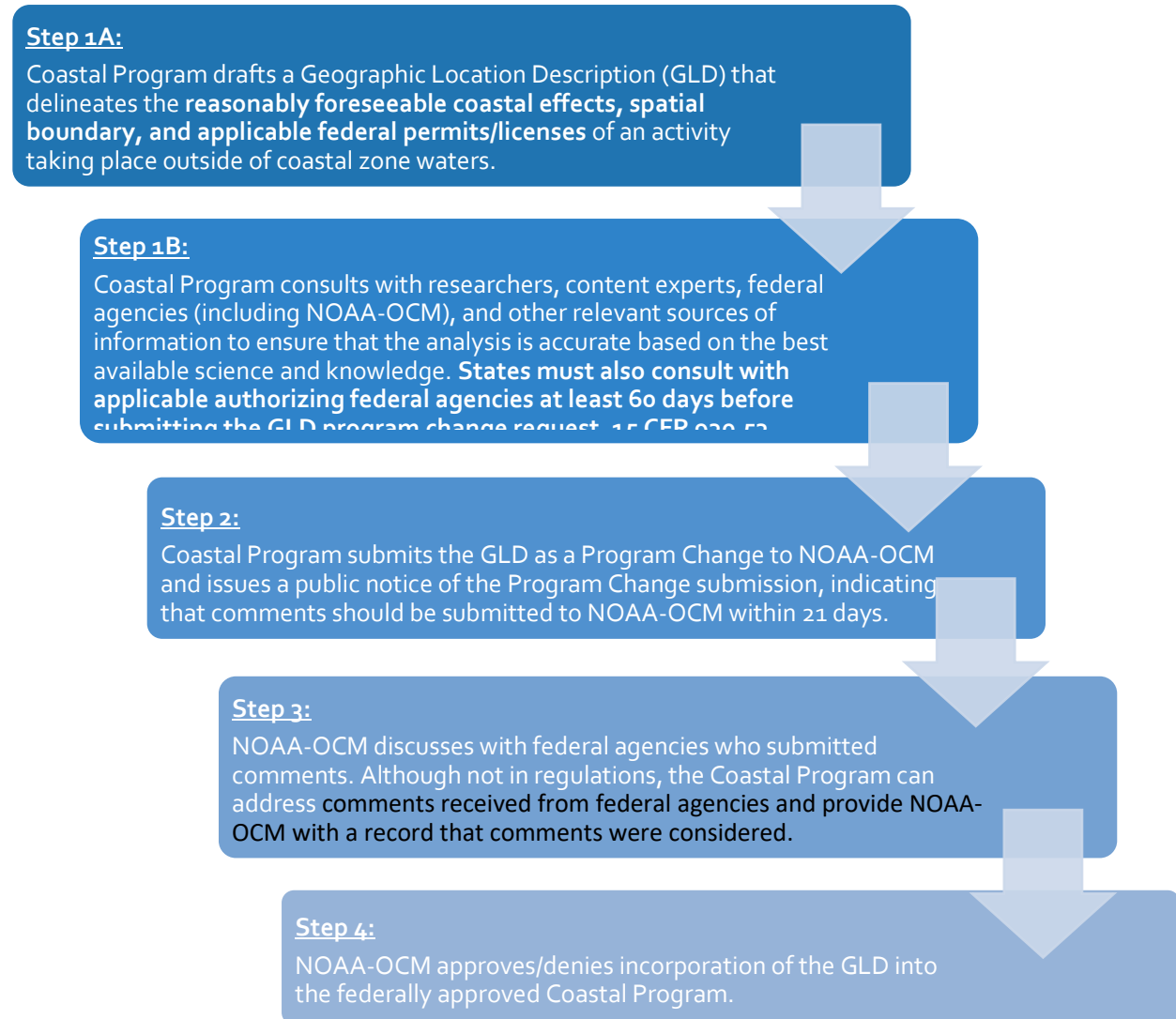
²⁹ 15 C.F.R. § 923.83. See Appendix 3 for a list of federal permits and licenses commonly listed by Coastal Programs.

³⁰ 15 C.F.R. § 930.11 (g).

³¹ 15 C.F.R. § 923.84 (d)(6)

Development Process

The general steps in the process for submitting a proposed GLD to NOAA-OCM for approval are outlined in the graphic below. Due to the variability in state analysis and federal activity types, the steps outlined above may occur in a different order than presented here. For example, Steps 1A and 1B may be reversed or take place concurrently.



Regulations Governing GLDs

The CZMA federal consistency regulations establish the process Coastal Programs must follow to establish a GLD (See Table 2). A GLD should focus on federal license permit activities or OCS plans that take place in areas outside of the state's coastal zone and have reasonably foreseeable coastal effects

on state coastal resources and/or users.³² The regulations governing GLDs are somewhat flexible,³³ and the approaches discussed in this document are not definitive. This section is simply meant to summarize different pieces of the regulation that together create the regulatory basis for federal consistency review in a GLD.

Table 2: KEY SECTIONS OF FEDERAL REGULATIONS APPLICABLE TO GLDs	
Regulation Citation	Summary of Regulation
15 C.F.R § 930.53(a)(1) Listed federal license or permit activities.	Establishes the GLD tool for reviewing federally permitted activities outside the coastal zone. Outlines the general characteristics of an approvable GLD. Provides that federal lands within the coastal zone boundary are automatically included within the GLD and need not be described explicitly by Coastal Programs. Requires that states consult with federal agencies at least 60 days before submitting a GLD program change request to NOAA-OCM
15 C.F.R § 930.53(a) Listed federal license or permit activities.	Requires a Coastal Program to have a list of federal permits and licenses that are subject to routine federal consistency review.
15 C.F.R § 930.95 Guidance provided by the state agency.	Suggests that a Coastal Program have a list of specific types of federal assistance programs subject to consistency review. Allows Coastal Programs to review applications for federal assistance activities outside the coastal zone that have reasonably foreseeable coastal effects by adopting a GLD describing the area (e.g., coastal floodplains) within which federal assistance activities are subject to consistency review.
15 C.F.R. § 930.154 Listing activities subject to routine interstate consistency review.	Describes requirements for interstate consistency review, which allows a Coastal Program to establish a GLD covering specific federally licensed or permitted activities occurring in a neighboring state’s jurisdiction.
15 C.F.R. § 923.83 Program Change materials.	Establishes requirements for requests to NOAA-OCM to change approved Coastal Programs, including specific requirements for Program Changes that will create new (or amend existing) GLDs.
15 C.F.R. § 923.84(d) Program Change decision criteria.	Describes a “coastal effects analysis” (which must be used to show reasonably foreseeable coastal effects for a GLD) and sets out 8 elements to be included in the analysis (e.g., activity-specific information; information on affected coastal resources/use; causal connection between the activity’s impacts and coastal effects).

³² 15 C.F.R. § 923.84(d) (“The geographic location description should encompass areas outside of the coastal zone where coastal effects from federal license or permit activities are reasonably foreseeable.”).

³³ One of the stated objectives of the federal consistency regulations is, “To provide flexible procedures which foster intergovernmental cooperation and minimize duplicative effort and unnecessary delay, while making certain that the objectives of the federal consistency requirement of the Act are satisfied.” 15 C.F.R. § 930.1.

OFFSHORE ENERGY PROJECTS ARE DIFFERENT!

The federal consistency regulations (15 C.F.R. Part 930, Subpart E) explicitly address energy projects on the Outer Continental Shelf (OCS), which fall into their own special category of “federal activities” and are reviewed by Coastal Programs at the OCS plan stage. Thus, the federal agencies involved in regulating OCS activities—particularly, the Bureau of Ocean Energy Management (BOEM)—engage with Coastal Programs, whether or not a proposed activity is covered by a GLD. However, it is important that Coastal Programs include on their federally permitted activities list the permits and licenses related to OCS energy projects, as required under 15 CFR 930.53, including specific reference to OCS renewable energy activities the state wishes to review. (The regulation at 15 C.F.R 930.74 *requires* lists to include “a reference to OCS plans which describe in detail federal license or permit activities affecting any coastal use or resource, but NOAA-OCM has suggested that including this generic reference on the list does not guarantee a state’s ability to review activity types beyond traditional oil and gas.) Moreover, creating a GLD for these activities can signal the state’s interest in them, as well as generate useful information to support coordination with BOEM.

It is critical to note that in order to have federal consistency review authority of renewable energy projects on the outer continental shelf proposed by a non-federal applicant (15 C.F.R. 930, Subpart D), the coastal program must have the applicable federal permit/license included on their federal consistency list and have an approved GLD for the activity. Without both components, an UAR would need to be submitted and approved

Example Language used by Programs to Describe OCS Activities on their Federal Consistency Lists:

BOEM: All leases, licenses, permits, and approvals related to Outer Continental Shelf (OCS) exploration and development and production plans (including any amended plans submitted in response to objections to the Coastal Management Program to a previously submitted plan), and other authorizations by the Bureau of Ocean Energy Management under the Outer Continental Shelf Lands Act of 1953 (OCSLA) and its amendments for the exploration, construction, operation, maintenance, and/or support activities related to OCS activities including oil and gas activities, alternative energy activities and alternative uses of existing facilities, and underwater cables. (43 U.S.C. 1331 et seq.) – *multiple states*

BOEM: Rights of way, rights of use, and easements for construction and maintenance of pipelines, gathering and flow lines and associated structures pursuant to OCSLA Section 5e. (43 U.S.C. 1334) - *Rhode Island*

FERC: Licenses of Outer Continental Shelf (OCS) construction and operations and other authorizations and exemptions by the Federal Energy Regulatory Commission under the Federal Power Act as amended, for OCS activities including hydrokinetic energy activities (16 U.S.C. 792-823) – *multiple states*



There may be additional language helpful for renewable energy project CZMA review. Coastal Programs should work with partner federal agencies and NOAA-OCM. Renewable energy projects fall within Subparts D and E of the federal regulations (15 C.F.R 930).

Types of GLDs

Establishing the boundary of a GLD is a critical component of a state's GLD application to NOAA-OCM. GLDs apply outside of the coastal zone, and can be applied in federal waters, inland areas of the state, or in an adjacent state's jurisdiction.³⁴ The federal regulations implementing the CZMA do not establish any limits on how many GLDs a state can have, so this tool can be used as necessary to adequately manage coastal resources and uses and implement the Federal Consistency Authority.

GLDs in Federal Waters

Federal license or permit activities and OCS plans in federal waters are typically the focus of GLDs. The farther out an activity is located from the state's seaward coastal zone boundary, the more difficult it tends to be for the state to demonstrate the "reasonably foreseeable effects" of an activity in the federal waters to state uses or resources.³⁵

Examples of Analysis Submitted to Support Applications for GLDs in Federal Waters

- **State of Oregon** - Analysis of Reasonably Foreseeable Effects of Federal Actions Related to Marine Renewable Energy Projects on Resources and Uses Occurring within the Federal Waters of the Oregon Ocean Stewardship Area. (Appendix 2) GLD area extends from 3NM to 500 fathom line.
- **State of Rhode Island** - Analysis of Reasonably Foreseeable Effects of Federal Actions Related to Marine Renewable Energy Projects on Resources and Uses Occurring within the Federal Waters of the Special Area Management Plan. (Appendix 2) GLD area extends 23.2 to 54.6 miles offshore.

GLDs for Interstate Activities

Coastal Programs have the ability to adopt GLDs for federal activities in a neighboring state. An interstate GLD adopted by State A delineates specific areas in State B where a federally-permitted activity has reasonably foreseeable coastal effects on the coastal resources or uses of State A. The review by State A of the federal activity in State B is through a process called *interstate consistency review*.³⁶ The federal activities specified for review in the GLD are subject to routine interstate consistency review. Furthermore, once NOAA-OCM has approved an interstate GLD for one activity, the Coastal Program also may find it easier to request and obtain authority to review a federally-permitted activity in the other state that is *not listed* in the approved interstate GLD.³⁷ There are several examples of Interstate GLDs along the East Coast; one is described below.

Examples of Interstate GLDs

- **New York** - Interstate Consistency Listing within the Long Island Sound and Byram River (Connecticut) for³⁸:

³⁴ 15 C.F.R. § 930.53 (1). Where a GLD is in place, federal activities taking place entirely within another state's jurisdiction are subject to review through a distinct process called interstate consistency review. Details on interstate consistency review are provided in NOAA's regulations and on NOAA's federal consistency website. <https://www.coast.noaa.gov/czm/consistency/interstate/>

³⁵ Personal communication, Kerry Kehoe, Federal Consistency Specialist, NOAA-OCM

³⁶ 15 C.F.R. § 930.154 (a) - (c).

³⁷ Personal communication, Kerry Kehoe, Federal Consistency Specialist, NOAA-OCM.

³⁸ State of New York Federal Consistency List (accessed November, 2022) *available at*: <https://coast.noaa.gov/data/czm/consistency/media/ny.pdf>

1. Construction of structures or conduct of activities such as the mooring of vessels in navigable waters, or obstruction or alteration of navigable waters pursuant to Sections 9 and 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 401, et. seq.).
 2. Discharge of dredged and fill materials and other activities in the waters of the US, in Long Island Sound and Fishers Island Sound (to 20' bathymetric contour)
 3. Activities subject to Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (33 U.S.C. 1401 et seq.) in Long Island Sound and Fishers Island Sound (20' bathymetric contour).
- **State of New Jersey** - Interstate Consistency Listing for the Delaware Estuary in the States of Pennsylvania and Delaware^{39,40} for:
 1. Construction of structures such as dams or dikes, bulkheads, revetments, groins, jetties, piers, docks, artificial reefs, pipelines, cables and wind turbines and islands or activities such as dredging, filling, mining, excavation and mooring of vessels in navigable waters, creation of artificial islands and,
 2. Discharge of dredged and fill materials and other activities in the waters of the United States, including wetlands
 - **Additional Examples** - These states also offer examples of active interstate GLDs within their authorities.
 1. **Connecticut** - Consistency Listing for certain waters in New York and Rhode Island and a GLD for certain activities inland in Connecticut outside of its coastal zone up the Connecticut River.
 2. **Pennsylvania** - Consistency Listing for waters and inland Ohio.

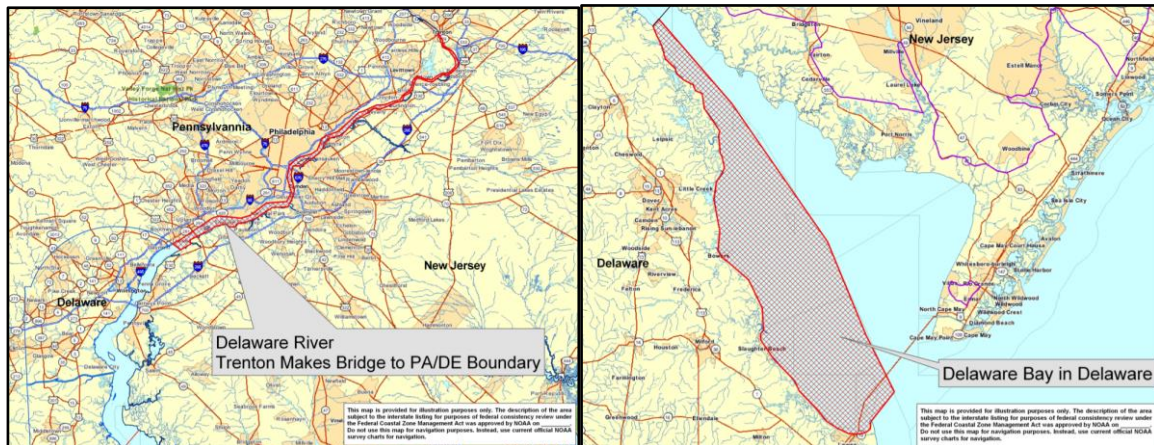


Figure 3: Example of an Interstate GLD boundary, where New Jersey has listed for interstate consistency review activities in certain waters within Pennsylvania & Delaware.

³⁹ State of New Jersey Coastal Program, Federal Consistency List (May 2008); available at: https://www.state.nj.us/dep/cmp/2008_fc_listing.pdf.

⁴⁰ State of New Jersey Coastal Program, Interstate Consistency Maps for the Delaware Estuary in the States of Pennsylvania and Delaware (2007); available at: https://www.state.nj.us/dep/cmp/interstate_maps.pdf.

Inland GLDs

The regulatory provisions allow Coastal Programs to apply the Federal Consistency Authority landward of their federally approved coastal zones. There are currently only a few states with inland GLDs⁴¹, most of which are also interstate GLD's, such as New York and Connecticut. This type of GLD may encompass upstream or inland areas where a federal activity is taking place outside of a coastal zone and has reasonably foreseeable effects on coastal species, resources or uses.⁴² Federal license or permit activities that affect water quantity or quality may be candidates for this type of GLD. Some additional examples include upstream dam maintenance, building, removal, or water release. For states with narrow coastal zones (i.e., the landward boundary is relatively close to the shoreline), upstream Clean Water Act Section 404 permits may be of interest to review. This kind of GLD may be useful as states look to incorporate design modifications to federally funded or permitted projects because of a changing climate. For example, new road infrastructure or culvert construction upstream from the coastal zone could impact downstream resources within the coastal zone by limiting inland migration of coastal habitats in the face of sea level rise, or by restricting water and sediment flows to the coast.

⁴¹ See <https://www.coast.noaa.gov/czm/consistency/states/>

⁴² 15 C.F.R. § 930.151

GLD Alternative: Unlisted Activity Requests

In the absence of a GLD, NOAA-OCM may grant a Coastal Program one-time authority to review a federally permitted activity outside the coastal zone (or other unlisted federally permitted activity) through an Unlisted Activities Request (UAR).⁴³ These requests, which are evaluated on a case-by-case basis, require notifying the Director of NOAA-OCM (Director), the federal agency issuing the permit or license, and the applicant within 30 days of the state receiving notice of the license or permit application.^{44, 45} Like the analysis for a GLD application, the coastal effects analysis for a UAR must meet the standard of describing a causal connection of how an impact from the proposed activity could result in a “reasonable foreseeable effect” on coastal zone resources and uses.⁴⁶ The UAR must be reviewed and approved by NOAA-OCM prior to a federal consistency review taking place.⁴⁷ Coastal Programs considering the submission of a UAR should also carefully consider and account for a truncated federal consistency review timeline: the time allowed for the state to conduct a consistency review pursuant to a UAR may be up to 50% shorter than it is for reviews for listed federal activities (including GLDs).⁴⁸

When a UAR is denied, it is normally because NOAA-OCM determined there are not reasonably foreseeable effects to state uses or resources stemming from that proposed activity.⁴⁹ It is possible that a denial of a UAR for an activity type could hurt the chances of NOAA-OCM approving a more thoroughly-researched GLD application for the same activity in the future. While this has not occurred to date, UARs are rarely used, so applied examples are limited.

Coastal Programs do not have automatic federal consistency review authority for renewable energy projects on the outer continental shelf proposed by a non-federal applicant unless the state’s federal consistency list includes the Outer Continental Shelf Lands Act authorization and has a federally approved GLD for the activity. Without these components, the coastal program would need to apply for and be granted an UAR from NOAA-OCM in order to apply their federal consistency authority.

When considering administrative effort, UARs appear most useful for one-time activities that are unlikely to reoccur (e.g., single scientific survey, etc.), while GLDs appear most useful for activities that have a high potential to reoccur and/or increase in frequency through time. GLDs in those situations may prevent redundant UAR requests in the future (which would have been time and resource intensive for both the coastal program and NOAA-OCM). Unlike UARs, which are reactive to a proposed activity,

⁴³ 15 C.F.R. § 930.54.

⁴⁴ 15 C.F.R. § 930.54(a)(1).

⁴⁵ This notice must contain a request to the Director for authority to review the activity for consistency with state enforceable policies, along with an analysis that supports the Coastal Program’s assertion of reasonably foreseeable coastal effects, which must include the eight components set out in the 2019 program change regulation, 15 C.F.R. 923.84(d).

⁴⁶ 15 C.F.R. § 930.84(d).

⁴⁷ 15 C.F.R. § 930.54(d).

⁴⁸ 30 C.F.R. § 930.54 (e). If NOAA-OCM approves a UAR, the Coastal Program’s six-month review period will have started on the date of the original Federal agency notice of the proposed activity (e.g., the Federal Register notice of the permit or license application) or within three months from the State’s receipt of the consistency certification, whichever has a later termination date. *Id.*

⁴⁹ 15 C.F.R. § 930.54 (providing that “the sole basis for the Director’s approval or disapproval of the State agency’s request will relate to whether the proposed activity’s coastal effects are reasonably foreseeable”).

GLDs can be proactively sought by a Coastal Program if a federally permitted activity is expected to take place in the future due to technological advances and emerging industries.

Crafting a GLD

Getting Started

As a Coastal Program gathers and synthesizes information to determine whether there are reasonably foreseeable effects to coastal resources and uses from the activity, at some point they must decide whether there is enough information to support a GLD application. Demonstrating “reasonably foreseeable effects” is less stringent than a requirement of absolute knowledge of the effects, which is an important distinction. Technological advances are broadening the types of activities that occur in the ocean, and Coastal Programs may be concerned precisely *because* there isn’t substantial research on the impacts of an emerging activity or public information on the construction or operation methods that would help understand potential impacts. Marine renewable energy and offshore aquaculture are two examples of activities that are known to incorporate rapidly developing technologies, which may present difficulties while researching the effects to state resources. See Table 3 for how the considerations around creating a GLD for an emerging industry or activity differ from considerations around an established industry or activity.

Table 3: Considerations for Emerging vs Established Activities		
Activity Type	Emerging Activity	Established Activity
Considerations	<ul style="list-style-type: none"> ● The activity is not yet common or present but coastal effects are anticipated. ● Analysis of the activity will likely rely on models to estimate coastal effects or use international research or other surrogate information, like impacts from similar known and studied construction or extraction techniques, to create an effects-based rationale. Other federal- and state-generated documents may also be helpful in this task, such as programmatic EISs. ● The activity may be less controversial, which could result in a more streamlined GLD review process based on fewer interested parties. ● It may be helpful to break an emerging industry activity down into its discrete construction components, for which information on impacts may already be available, and then aggregate them. 	<ul style="list-style-type: none"> ● The activity is present, regularly occurs, and is potentially economically important. ● The adoption of a GLD may be more controversial due to established industry and interests. ● An activity that has occurred for years or decades has yielded more research about its impacts to coastal resources and uses.
Example	Oregon GLD for Marine Renewable Energy (See Appendix 2)	Rhode Island GLD for Marine Renewable Energy (See Appendix 2)

Key Advantage	Ability to take a precautionary approach and protect resources and uses in the area until more data and information becomes available.	Established research and available data to show that the activity will have impacts.
Key Challenge	Overall lack of data explicit to the activity. Cannot use the precautionary approach to stop all development (NOAA does not allow enforceable policies or GLDs with blanket prohibitions).	A new GLD will not undo potentially irreversible effects to coastal resources and uses as a result of the activity already having been conducted over a substantial time period without input from the state.

Elements of a GLD Application

A GLD application requires several pieces of information to properly support a state’s assertion of reasonably foreseeable effects to coastal uses or resources. While the regulations are fairly flexible (e.g., certain information is required “to the extent practicable”), NOAA-OCM has enumerated eight elements that must be included in a “coastal effects analysis,” which forms the foundation of a successful GLD application.⁵⁰ The eight components are:

- A. Detailed description of the affected uses and resources
- B. Where and in what densities the uses and resources are found
- C. How the Coastal Program has a specific interest in the resource or use
- D. Where the proposed activity overlaps with these resources, uses, and values
- E. Impacts to the resources or uses from the proposed activity
- F. A reasonable showing of a causal connection to the proposed activity, including how the impacts from the activity result in reasonably foreseeable effects on the state's coastal uses or resources
- G. Why any required mitigation may be inadequate
- H. Empirical data that supports the effects analysis⁵¹

Although the regulations and NOAA-OCM policy highlight these eight items as key components of a GLD application, Coastal Programs have little guidance on *how to meet these requirements*. Some of the more difficult aspects of a coastal effects analysis may include:

1. Access to the newest research or modeling and compiling the most recent data to describe state coastal uses or resources and their location/density to support assertions of their value to the state (particularly for coastal resources that have not been inventoried or studied well or often);
2. Determining and showing via existing data and information the causal connection between the impacts from the activity and the reasonably foreseeable effects to state coastal resources and uses to a sufficient level; and
3. Describing impacts from the proposed activity in data- and information-poor circumstances, particularly for emerging industries.

⁵⁰ 15 C.F.R. § 923.84(d).

⁵¹ 15 C.F.R. § 923.84(d).

The sections below present recommendations and experiences, taking these required elements and associated difficulties into consideration, as well as lessons learned from several Coastal Programs with approved GLDs. They also include a decision tool that may help Coastal Programs decide whether to create a GLD, and tips on how to gather information from affected users.

The sections below are primarily focused on GLDs in federal waters, though GLDs may also be used for inland activities or activities in neighboring state waters.

Data & Research Considerations

A GLD application requires sufficient information to support the connection between the activity, impacts to state coastal uses or resources, and reasonably foreseeable coastal effects. Information may be gathered from sources including but not limited to the scientific literature, interviews with subject matter experts, agency publications, spatial and monitoring data, or existing environmental impact statements or other environmental analyses for the activity. Coastal Programs may also draw on data and information from previous planning and management processes, such as the development of a marine spatial plan, a special area management plan, and/or the outputs from regional ocean planning processes.

A Coastal Program should also understand if there is research or other information that contradicts its rationale for the state's concern about a given activity. For example, there may be previous federal agency Record of Decisions (RODs) for Environmental Impact Statements that have found little or no adverse effects for an activity. The Coastal Program may want to proactively show why the current analysis is better, how the situation is different, and any other distinguishing factors, which means additional time and effort to review any RODs of this nature. However, this will increase the likelihood that the Coastal Program has the support it needs to move towards a successful GLD application or help the Coastal Program determine that a GLD is not necessary. It is important to note that cumulative and secondary impacts, especially from a changing climate, as well as cultural resources impacts, which are components of GLD applications, may be missing from previous RODs.

Coastal Programs can also leverage existing historical and concurrent analyses and processes to identify potential effects. For example, the National Environmental Policy Act (NEPA) requires federal agencies to determine and disclose the environmental impacts of a federal action to natural resources, among other analyses. Coastal Programs can use the environmental impact information found in NEPA documents for a proposed activity outside the coastal zone to help determine whether there could be reasonably foreseeable effects to coastal uses and resources associated with that activity. However, the federal consistency review timeline for a proposed activity generally begins with the issuance of a Notice of Intent (NOI) to conduct a NEPA review, and given the lengthy timeframes of many NEPA reviews, it is uncommon for NEPA documentation to be available for a proposed activity before the federal consistency review deadline. In these cases, Coastal Programs may look to environmental impact information gathered during NEPA reviews for previous projects of a similar type. Existing NEPA documents from similar past projects can also be used to help a Coastal Program identify and articulate an activity's environmental impacts for purposes of the coastal effects analysis in a GLD application.

It may also be helpful to gather research from other parts of the world or from surrogate activities that have similar impacts to the resource or use of concern. (See Table 4 for examples.)

Table 4: Example Surrogate Activities and Coastal Effects	
Federal Activity Examples	Surrogate Activity Examples
Seabed Mining	Marine Renewable Energy, Oil and Gas Exploration
Offshore Seafood Processing Discharge	Nearshore Aquaculture, Dredge and Fill Activities
Marine Renewable Energy	Oil and Gas Exploration, Telecommunication Cable Activities

Federal agencies have access to data that may assist the Coastal Program with its GLD application, particularly establishing “reasonably foreseeable effects,” the frequency of the activity that may help determine the magnitude of the effect, or monitoring data for the activity. In addition to independent data review, Coastal Programs can contact these agencies for potentially relevant data. This is one reason why it may be beneficial to plan ample time for collaboration where the state and federal governments have overlapping interests. Consultation documents produced by NOAA Fisheries and through other consultation processes may also contain valuable information that NOAA was provided by the applicant during consultation, and references and resources NOAA relies on to make a consultation decision.

In order to prioritize information as it is being gathered, Oregon has created a general hierarchy that has been used for its GLD analyses. (See Figure 4). This hierarchy is focused on prioritizing the most applicable and valuable data when developing a GLD (i.e. indicating the most compelling data to support the finding of reasonably foreseeable effect is direct science and metrics on the activity’s effects), and is only one approach to prioritizing data and information related to an activity and may help Coastal Programs navigate many research documents.

- (1) Direct Science or Data: Peer-reviewed scientific literature, GIS spatial data, and other rigorous information that directly connects the impacts of the activity to coastal resources and uses.
- (2) Supporting Scientific Reports: Scientific literature from other regions with similar conditions or activity that may inform potential impacts (proxy/surrogate).
- (3) Model Outputs: Consulting with scientific modelers to see if there is a model already in publication that could inform the subject (or if a model could be developed).

After the data is prioritized, it can more easily be used to create a “causal chain” (see Appendix 2). Coastal Programs can “ground truth” the rationale with communities most affected by the activity during stakeholder outreach.

The Connection to Coastal Resources and Uses

When developing a GLD, Coastal Programs have the burden of showing that state coastal resources and uses will be affected by the federally permitted activity. If there is little information demonstrating these

effects, regardless of the reason for that lack of information, the analysis becomes substantially more difficult. One way to establish an inventory of coastal resources and uses that could be subject to effects from the activity in question would be to embark on a larger spatial area management planning effort. The resulting maps of coastal resources and uses can set a strong spatial data foundation for GLD applications in the future.

Another method of demonstrating an effect to coastal resources and uses is to focus on economic effects. Many NOAA-approved GLD submissions appear to rely heavily on economically important fisheries or resources to connect coastal resources and uses to impacts of a federally permitted activity outside of a state's coastal zone. This is likely due, at least in part, to the fact that the fisheries have reporting requirements that produce sufficient information on the resources' location and density, and that the state's specific economic interest is well documented and easy to quantify. Thus, funding coastwide economic studies of the tourism, non-consumptive recreation, and research economies (e.g., university marine stations) may help the state broaden the scope of foundational data available to support GLD applications for various activities of concern. The materials submitted in support of the Rhode Island⁵² and Oregon⁵³ GLDs for marine renewable energy provide examples of Coastal Programs focusing their GLD rationales on the effects to the economically important fisheries in the region.

NAVIGATING DATA DEFICIENCIES

Based on the federal activity and resources being affected, Coastal Programs may encounter difficulties uncovering important information on coastal resources that are under-monitored or not tied to an economic market. This may be the case for species that play a critical role in ecosystem function and value but are not part of a fishery.

In these cases, Coastal Programs may consider collaborating with researchers and/or find a surrogate activity with similar impacts. Based on the GLD application template chosen, these data and information, although limited, may be valuable contextual additions to a GLD and can indicate a Coastal Program's broader concern with the potential impacts to state resources resulting from the authorization of the activity, even if not the primary rationale in the application.

Any research gaps identified should be documented by the Coastal Program. These questions can later be used for research grant opportunities, limited duration positions, etc.

Considering National Security

Some activities vital to the national security interest may outweigh the concerns for coastal resources

⁵² Rhode Island's 2018 GLD is currently the only approved GLD that was created based on the required elements in 15 C.F.R. § 923.84(d): http://www.crmc.ri.gov/news/pdf/RI_Amended_GLD_092018.pdf

⁵³ Oregon's GLD (2015): <https://www.oregonocean.info/index.php/ocean-documents/continental-shelf/1529-gld-final-pdf/file>

addressed by state enforceable policies. See 16 U.S.C. § 1456(c)(3)(a). For this reason, Coastal Programs should be sure to balance the concerns for resources potentially affected by activities associated with advancing the national security interest, with acknowledgment of the requirement that approved Coastal Programs “provide for the consideration of the in the planning for and siting of facilities that meet more than local requirements.”(15 C.F.R. § 923.1(c).)

Demonstrating “Reasonably Foreseeable Coastal Effects”:

Substantial analysis goes into demonstrating that effects from a federal activity will have reasonably foreseeable effects on coastal resources or uses.

One method that could be used to demonstrate reasonably foreseeable effects in a GLD application is focusing on one or two key impacts to coastal resources or uses and gathering information to connect those resources/uses to the activity in multiple ways. For example, for Rhode Island’s GLD for marine renewable energy (See Appendix 2), the Coastal Program focused its research on the impacts to local fisheries, fishing grounds, and habitat. NOAA-OCM has supported this approach as a strong method of analysis.⁵⁴

Another approach to demonstrate reasonably foreseeable effects could be to document several, if not all, of the impacts to resources and uses that would arise from the activity. For example, the materials submitted in support of Oregon’s GLD for marine renewable energy document several potential impacts to state resources or uses, including but not limited to fishery impacts, impacts to essential rocky habitat, and disruptions to migration patterns of endangered marine species (See Appendix 2). One of the benefits of using this method is that it helps the Coastal Program develop a comprehensive understanding of the range of reasonably foreseeable effects to coastal resources and uses, even if NOAA does not rely heavily on all of them in its decision to approve the GLD. As a result of this approach, the Coastal Program is better prepared for federal consistency reviews that will occur once the GLD is in place. Coastal Program federal consistency staff will be able to use these predetermined coastal effects as a guide for what the Coastal Program should consider when determining whether the proposed activity is consistent with its approved enforceable policies. The primary downside of using this approach is the time and resources that may be needed, as compared to limiting the analysis to a narrower set of resources and uses.

Coastal Programs could also use a hybrid approach that falls somewhere between the above suggestions. This approach might start with a broad review that identifies all resources and uses and all effects that could occur from the activity; the Coastal Program could subsequently select the resources/uses and effects with the strongest underlying data or correlation, and focus the coastal effects analysis on those.

Delaware used a hybrid approach to justify the need for GLDs developed for three categories of federal activities (in neighboring state and federal waters): Dredging and Dredged Material Disposal, Offshore Alternative Energy Development, and Introduction of Non-native Shellfish (see [Case Studies](#)). Each of these activities was shown to have reasonably foreseeable primary and cumulative effects on a few specific resource types within the coastal zone of Delaware. After identifying a large suite of effects,

⁵⁴ Personal communication, Kerry Kehoe, Federal Consistency Specialist, NOAA-OCM.

Delaware chose to limit their justification to a few of the most affected resources or uses, which had substantial data to support the determination.

Table 5: Rhode Island's Approach to Identifying Coastal Effects	
<p>The federal regulations define “coastal effects” as <i>any reasonably foreseeable effects on any coastal use or resource resulting from a federal agency activity or federal license or permit activity</i> (15 C.F.R. § 930.11(g).)</p> <p>When determining what types of coastal effects are relevant to a specific GLD, the State of Rhode Island reflects the official definition by splitting the coastal effects assessment into two main categories:</p>	
Coastal Resources	Coastal Uses
<p>This category includes all of the natural resources the state has determined are important to protect/conservate (e.g., marine mammals, fish, corals, water quality, rocky habitat, etc.)</p>	<p>This category focuses on the communities that use and depend on the coastal economy and coastal resources (e.g., commercial fishing, shipping, tourism, wildlife watching etc.)</p>
<p>Note on Cumulative & Secondary Effects</p> <p>While each GLD application will be different, cumulative and secondary effects will always be among the most challenging components of the application because of the shared and compounding nature of the effects (e.g., water quality, greenhouse gasses, climate change, etc.).*</p> <p><i>*Coastal Programs should share learning outcomes regarding cumulative and secondary effects for incorporation into this document on a rolling basis.</i></p> <p>Contact Coastal.Permits@dlcd.oregon.gov with additions and amendments.</p>	

Using Models

Scientific models geared towards better understanding aspects of natural resource management are helpful in supplementing information where more study is needed, or raw data collection is impractical. For the purposes of this document, these models are categorized as conceptual or observational. Conceptual models focus on the networked connections between several resources and a proposed activity, whereas observational models use previous scientific knowledge and data to forecast specific conditions within the environment. Since some of the activities of potential concern are still in development (e.g., technological feasibility, interest), these peer-reviewed models can be helpful in visualizing and quantifying the potential effects on resources deemed important to the state.

Conceptual models are somewhat new to the special area management planning field but can be helpful in determining potential effects to state resources from emerging industries in the region. Washington Coastal Program used a Qualitative Network Modeling System (QNMS)⁵⁵ to determine potential effects to critically important habitat within the state’s coastal zone from activities that may be permitted in

⁵⁵ Harvey *et al.* Using Conceptual Models and Qualitative Network Models to Advance Integrative Assessments of Marine Ecosystems; a

federal waters in the future.⁵⁶ The QNMS uses scientific literature, raw data, and other resources to predict the interaction of a proposed activity (e.g., seabed mining, aquaculture) to ecological resources and other coastal users in the region. This information can be used to support a Coastal Program's coastal effects analysis.

The other type of models used in special area management planning are the scientific models that forecast what the actual parameters for data may be. For example, the Hybrid Coordinate Ocean Model (HYCOM) is one of the models used to visualize sea surface currents, temperatures, and other parameters important to water quality monitoring in the marine environment.⁵⁷ While observational models can be helpful, it may not be appropriate for them to be the sole means of proving reasonably foreseeable effects to coastal uses or resources. As part of quality control checks throughout the process, the scientific model should be compared to real-time data to ensure that it is as accurate as possible. In general, these models are to be used in conjunction with scientific evidence and data substantiating the need for a GLD.

Decision support models may also be helpful tools for Coastal Programs considering GLD development. These models allow data and information to be weighted and analyzed to assist with the prioritization of areas and resources for protection. This is a developing field of study and is likely to become more helpful in the future. Coastal Programs interested in exploring these tools will need to investigate the different resources to determine the best option.

See Appendix 5 for a non-exhaustive list of models that may be useful for analysis supporting GLDs.

Administrative Considerations

Time and cost associated with the development of a GLD will likely vary based on the target activity as well as the Coastal Program's unique structure, priorities, and capacity. Coastal Programs often prioritize the management of state coastal resources and uses differently from one another, based on state or regional factors like the environment, economy, and cultural significance. Based on the available information on potential effects of an activity, creating a GLD may be less or more burdensome.

Some Coastal Programs have conducted an overall analysis of coastal resources and uses as part of a marine spatial planning process, so a GLD application could build upon those efforts and potentially cover multiple activity types. Special area management planning efforts have the benefit of gathering all affected users to leverage their knowledge, address their concerns, and build trust between coastal communities and the state. Washington's Marine Spatial Plan is a helpful demonstration of describing and mapping important state resources and uses.⁵⁸ In that case, Washington State funded a comprehensive planning process that inventoried all the resources and uses that are important to the state to inform decision making and also provides the data and information for the development of future GLDs.

⁵⁶ State of Washington, *Qualitative Network Analysis of New Ocean Uses in Washington State Waters*, (April 2021) (unpublished manuscript) (on file with the Washington Department of Ecology).

⁵⁷ National Ocean Partnership Program, *Hybrid Coordinate Ocean Model (HYCOM)*; available at: <https://www.hycom.org/>.

⁵⁸ State of Washington, *Marine Spatial Plan for Washington's Pacific Coast*, 1-566 (Oct. 2017); available at: https://msp.wa.gov/wp-content/uploads/2018/06/WA_final_MSP.pdf.

Although prior research and planning processes can be leveraged during the development of a GLD, Coastal Programs without these resources can still develop a successful GLD application. Such efforts may require additional time to gather and synthesize the necessary information. For example, while Oregon has conducted some marine spatial planning, specifically for marine renewable energy development, the Coastal Program used a Sea Grant Fellowship to gather information on additional activities of concern in offshore waters. In addition to permits associated with marine renewable energy, the list of federal permits and licenses that Oregon may review within the GLD includes, but are not limited to: FERC orders for interconnection of electric transmission facilities; Coast Guard approvals of private aids to navigation; and drilling and other permits issued under OCSLA by BOEM and USACE.

Overall, these methods can be successful based on the time and capacity dedicated to the GLD effort. Coastal Programs may consider prioritizing GLD development tasks in federally required work plans and strategies under the CZMA (e.g., § 309 strategies) in order to use the associated funding opportunities (e.g., NOAA-OCM Projects of Special Merit) to help support staff capacity for this additional, discrete, and short-term task.

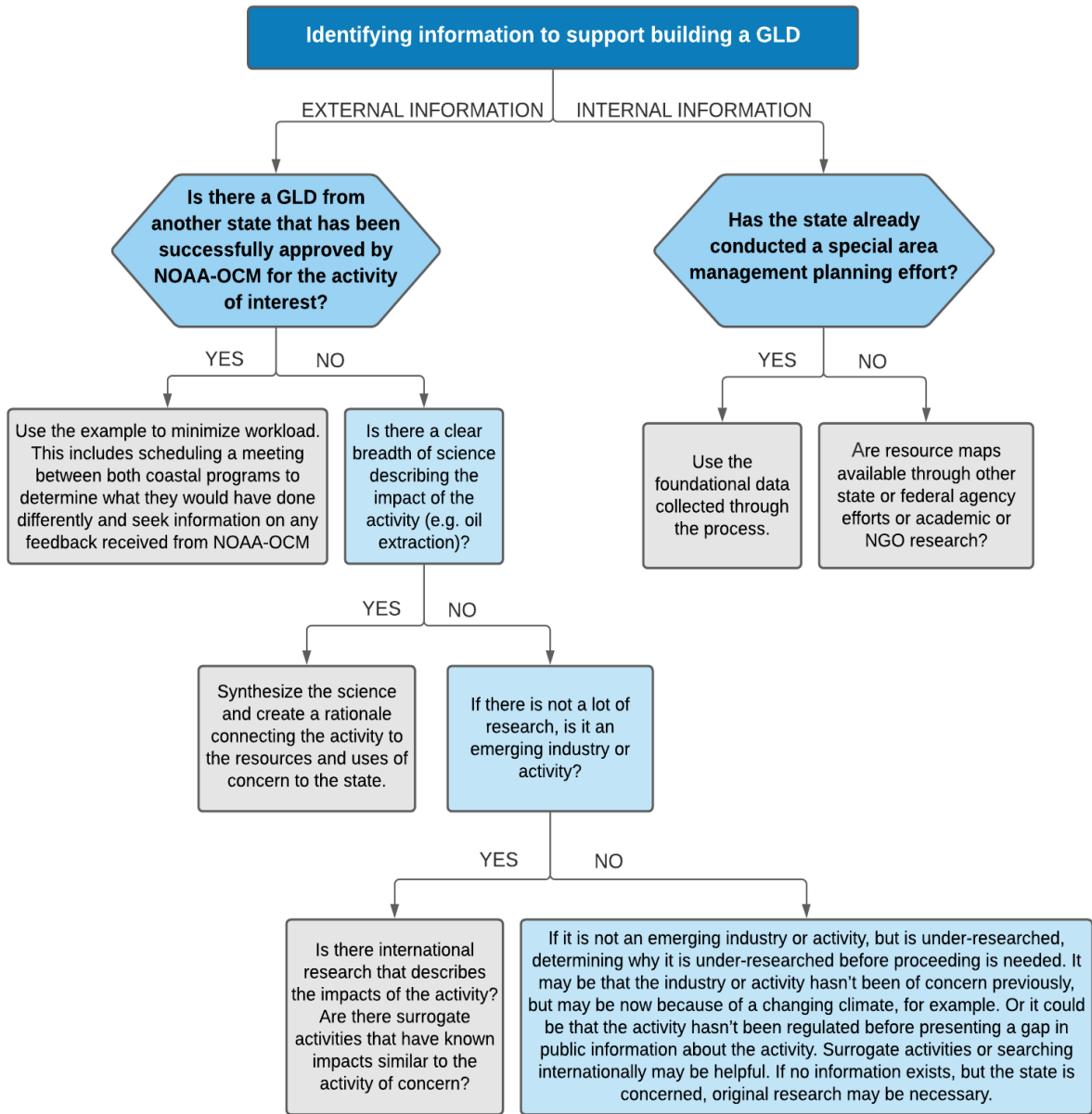


Figure 5: Decision flowchart to identify information sources.

GLD Spatial Boundaries

Determining the spatial boundary of a GLD is one of the main tasks in developing the application. This spatial boundary will vary depending on the activity, the resources and uses of concern, and the potential impacts to the resources and uses. This section aims to provide strategies observed from previous GLD spatial boundary development.

Boundary Considerations: Coastal Resources

Since the approval of a GLD relies, in part, on the state demonstrating reasonably foreseeable effects on coastal resources, the spatial boundary's shape and size will be influenced by the physical location of the coastal resources of concern and the ability of effects from proposed federal activities to migrate or extend to state uses/resources. Often, the physical characteristics of the seafloor and benthic habitats are important in determining the geographic extent of offshore activities' potential impacts. These characteristics may include the depths, lithology, and physical structure of habitat, especially in ecologically important areas. Another example of physically locating coastal resources is identifying where fish congregate, which can often be determined by boat haul maps. Migration patterns of various species also contain a spatial footprint that could help determine where a GLD boundary might be drawn. To the extent possible, species adaptations to climate impacts like change in range or migration patterns should be considered while considering spatial boundaries. Data catalogs including regional data portals can be helpful sources of information when determining this spatial boundary (see Table 6).

NOAA Fisheries designations made under other federal environmental laws identify spatial areas the federal government has already determined to be important for federally listed or federally managed species. Coastal Programs can leverage this previous work and use Essential Fish Habitat designations, and incorporated Habitat Areas of Particular Concern, established pursuant to the Magnuson-Stevens Fishery Conservation and Management Act, to help build a rationale for a GLD spatial boundary.⁵⁹ Coastal Programs should keep in mind, however, that NOAA-OCM will not approve a GLD that creates a situation where state enforceable policies, as applied, could be preempted by a federal law (e.g., the Endangered Species Act or Marine Mammal Protection Act).⁶⁰

Data limitations for many marine resources may make accurately capturing their geographic extent difficult. As data become available, the spatial data landscape may change during the course of GLD development or even following a GLD's approval. For example, ocean currents and temperatures change throughout the year, and it sometimes requires complex modeling and analysis to better understand their effects on coastal resources and uses. In areas affected by ocean acidification and hypoxia, other climate change impacts like species range adaptations, or other secondary and cumulative impacts, effects often build upon each other, and may be difficult to quantify through time and connect to a federal activity. As research continues to illuminate the consequences of a changing ocean and climate, along with species adaptations, amendments to existing GLDs may be warranted.

⁵⁹ National Oceanic and Atmospheric Administration, National Marine Fisheries Service, *Essential Fish Habitat Mapper*; available at: <https://www.fisheries.noaa.gov/resource/map/essential-fish-habitat-mapper>.

⁶⁰ As explained in NOAA-OCM guidance, "If a state's enforceable policies, as specifically described or applied, are not preempted, the state may apply them through CZMA federal consistency to a preempted field. It should be noted that whether state action is preempted is a fact-specific inquiry." NOAA-OCM, [Federal Consistency Overview](#) at 7 (2020).

Boundary Considerations: Coastal Uses

Typically, the GLD spatial boundary is also based in part on the mapping of uses important to the state that take place outside the coastal zone, whether that be in federal waters, inland watersheds, or another state's waters. Other state and federal agencies, Tribal Nations,⁶¹ universities, non-profit organizations, and other relevant data holders may have spatial information pertaining to the use of the natural resources in the region. When considering the boundaries related to economically important fisheries, it is important to consider that the fisheries industries dependent upon fish populations may have a different spatial footprint than the supporting habitat, and both should be considered when determining a GLD spatial boundary. Other examples of uses that are typically important to states include scientific research, tourism, and recreation. Coastal Programs can likely find data relating to these uses from state tourism agencies, economic development agencies, and academic institutions.

Impacts to the uses and users of the affected coastal resource can also be considered within the GLD analysis. For example, nutrient input from anthropogenic sources can produce harmful algal blooms in regions that struggle with the effects of eutrophication.⁶² In this case, Coastal Programs should also consider the effects of excess nutrient input and the spatial extent of harmful algal blooms to other users in the area (e.g., fisheries, scientific research, tourism) while determining a GLD boundary. If a coastal program is unsure what users might be experiencing, interviews or focus groups may be worthwhile, and these approaches are considered in more detail in the following section.

Table 6 offers a subset of reputable catalogs that may be of use to Coastal Programs seeking relevant spatial data for ocean uses, ocean resources, and ocean conditions. The listed databases are not purposefully curated to provide information relevant to a GLD analysis but offer a diversity of spatial data for consideration. A national spatial database that is purposefully curated for Coastal Program GLD analysis and application building is not yet available but could be useful.

Table 6: Reputable Data Catalogs	
Non-Exhaustive list of reputable data catalogs that can be leveraged during GLD development	
Name of Database	Website Available
Marine Cadastre	https://marinecadastre.gov/data/
NOAA InPort	https://www.fisheries.noaa.gov/inport/
NOAA Ocean Reports	https://coast.noaa.gov/digitalcoast/tools/ort.html
NOAA-OCM Digital Coast	https://coast.noaa.gov/digitalcoast/

⁶¹ For the purposes of this document, the term "Tribal Nations" refers to federally and non-federally recognized Tribes, unless otherwise specified, to respect the inherent sovereignty recognized by the U.S. Supreme Court. "When the governmental authority of tribes was first challenged in the 1830's, U. S. Supreme Court Chief Justice John Marshall articulated the fundamental principle that has guided the evolution of federal Indian law to the present: *That tribes possess a nationhood status and retain inherent powers of self-government.*"; available at <https://www.bia.gov/frequently-asked-questions>

⁶² V.H. Smith et al., *Eutrophication: impacts of excess nutrient inputs on freshwater, marine, and terrestrial ecosystems*, 179-196 (Aug. 1999); available at: <https://www.sciencedirect.com/science/article/abs/pii/S0269749199000913>.

The U.S. Integrated Ocean Observing System	https://data.ioos.us/
Regional Ocean Data Portals including: Northeast Ocean Data Portal Mid-Atlantic Ocean Data Portal West Coast Ocean Data Portal	https://www.northeastoceandata.org/ https://portal.midatlanticocean.org/ https://portal.westcoastoceans.org/
BOEM Marine Mineral Information System	https://mmis.doi.gov/BOEMMMIS/
Deep Sea Coral and Sponge/Benthic Macrofaunal Habitat Model	https://coastalscience.noaa.gov/contact/matthew-potinoaa-gov/
NOAA Fisheries Mapping Resources	https://www.fisheries.noaa.gov/resources/maps?field_resource_type_value%5Bmap%5D=map&field_species_vocab_target_id=&sort_by=created&title=

Boundary Considerations: Multi-Boundary Polygons

A state could propose a GLD with multiple discontinuous geographic boundary polygons (multi-polygon), in the event a federal activity with coastal effects takes place in multiple locations or the resource or use of concern occurs in multiple locations. There is one example of a Multi-Boundary GLD; Connecticut has a two-polygon GLD in federal waters for the review of OCS oil and gas plans. A conceptual example includes several polygons corresponding to spatially distant deep-water reefs or corals. Benthic habitat structure supports economically important fisheries as well as provides ecosystem function and supports high species diversity. It may be that focusing on benthic habitat structure with an appropriate buffer area will address a Coastal Program's concerns without having to review every project related to the activity across the entire broader geography.

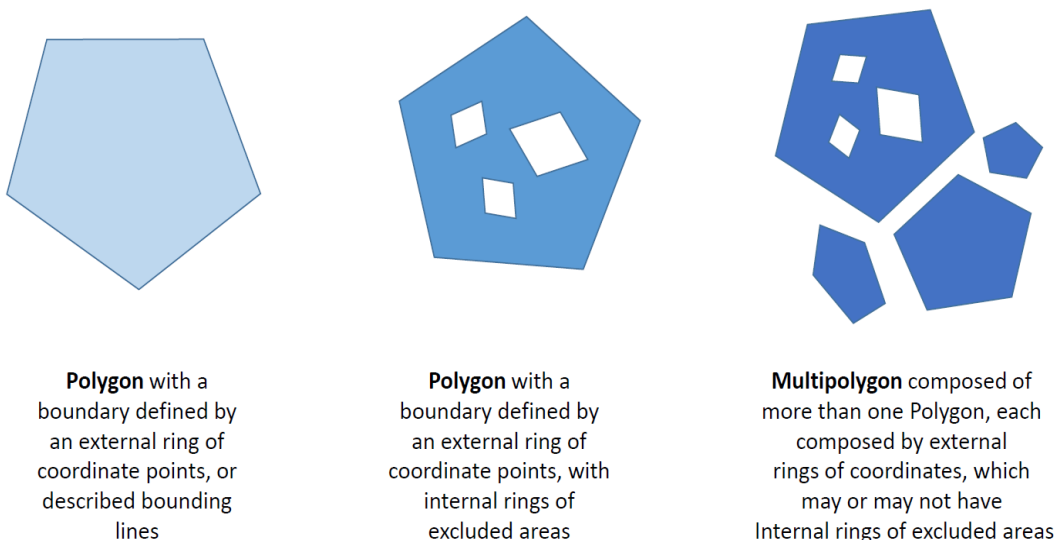


Figure 6: Polygon types for considerations during the development of a GLD.

Gathering Information from Affected Users & Subject Matter Experts

Similar to communicating the complexities of the Federal Consistency Authority more broadly, communicating the nuances of developing a GLD, its purpose, and the standard of reasonably foreseeable effects has its challenges. Successful development, submission, and approval of a GLD often requires extensive coordination with a diversity of individuals and organizations early in the research and drafting process. This coordination may include NOAA-OCM, content specialists, scientists and researchers, other Coastal Programs, and internal and external agency staff. Such extensive coordination will increase an application's chances of success and help avoid unanticipated pitfalls, as well as potentially foster a deeper understanding of all the players within the coastal zone.

Considerations for GLD Outreach

Coastal Programs pursuing a GLD should consider the logistics, reasonable expectations, and desired outcomes of outreach and coordination with affected users and subject matter experts prior to initiating these communications. These considerations are likely to vary based on location and activity, but may include:

- Determining if interviews or gathered information can and/or should be kept confidential and/or anonymous. Some states and territories may have laws which limit the ability to keep specific information confidential. Applicable public records law should be consulted.
- Exploring impacts to vulnerable populations or historically oppressed groups to uncover a more inclusive and accurate understanding of the broader coastal community. Information should be gathered directly from vulnerable and front-line communities.
- Determining which methods will help the Coastal Program best use and respect the time and efforts of subject experts and resource users.
- Identifying the most valuable materials and input that are needed from subject experts and coastal stakeholders to inform the required elements of the GLD application.
- Identifying who is best to talk to for what purpose. For example, a fisheries biologist can explain impacts of an activity to fish populations, but a social scientist may be better for questions regarding impacts to fishing communities.
- Drafting focused and discrete prompting questions avoids requesting information outside of the participants' expertise or potential confusion regarding the standard of reasonably foreseeable effects for empirical data researchers.
- Prompts should provide ample flexibility for the collection of information that may be provided through multiple fashions and methods.

Subject Matter Experts

Subject matter expertise is critical to the completion of a GLD application. Informal exploratory conversations may include discussions with academic researchers, local and state natural resources managers, scientists, Tribal Nation scientists and knowledge keepers (see "Tribal Nations" Section), NGOs, etc. As part of the application review and GLD approval process, NOAA-OCM is likely to pursue informational interviews about the subject matter in the GLD application with experts in the respective area(s). Prior to submitting an application to NOAA-OCM for review and approval, Coastal Programs should not only identify experts but also confirm that any/all such experts are following the scientific

consensus, further ensuring that their analysis follows the best available science and will contribute to a successful application.

Consultation with NOAA-OCM early in a Coastal Program's consideration of a GLD is key to starting off in a direction that may lead to NOAA-OCM approval. At a minimum, Coastal Programs should consult with NOAA-OCM when the Coastal Program has developed its initial GLD boundary and the types of federal license or permit activities the state wishes to review in the GLD. This will help ensure that a Coastal Program will not spend time and resources on a GLD or listed activity for the GLD that is not likely to be approved by NOAA-OCM, or may help identify where the state needs to do substantial research to justify the size and scope of a GLD.

Tribal Nations

Tribal Nations and indigenous communities are both subject experts and resource users. They are the original coastal managers since time immemorial. Thus, the GLD analysis and application will be more successful if they are collaborators in the effort. Coastal Programs should be considerate of the time constraints and priorities of sovereign peoples and federally recognized Tribes when engaging, as well as of the history of engagement and the need to strengthen these relationships and build trust. The level of collaboration between sovereigns and Coastal Programs will vary and reflects the level of trust as well as legal rights and authorities that have been re-established between them since European settlement. Informal outreach, outside of formal consultation obligations and trust responsibilities, is considered best practice for improved coastal management.

Additionally, Coastal Programs (or their parent agencies) may have Tribal Nation consultation policies that guide agency interactions with sovereign nations. For example, California has a detailed policy specifically for engaging during federal consistency reviews,⁶³ while other Coastal Programs, like Oregon, rely on a broader state agency policy. Prior to initiating work on a GLD, any consultation policies should be reviewed, and a plan created to initiate discussions to ensure Tribes are appropriately included in the coordination process and offered information to determine if formal government-to-government consultation should take place.⁶⁴ Public comment periods and forums are not appropriate for Tribal governments, which are sovereign nations. Programs should practice coordination through formal channels that acknowledge and respect their sovereignty, rather than traditional public comment periods that solicit information from stakeholders. This type of best practice will help build stronger long-term relationships between governments. The West Coast Ocean Alliance Tribal Engagement Guidance Document provides helpful guidance.⁶⁵ Staff-to-staff coordination and communication can be beneficial early in any process but does not constitute formal consultation. Tribal Nation staff can

⁶³ California Coastal Commission Tribal Consultation Policy (Adopted Aug 8, 2018) available at:

<https://documents.coastal.ca.gov/assets/env-justice/tribal-consultation/CCC%20Tribal%20Consultation%20Policy%20Adopted%208.8.2018.pdf>

⁶⁴ This section addresses government-to-government consultation at the state level, as required by state law. This is separate from NOAA-OCM's government-to-government consultation under federal law, if federal consultation is anticipated for NOAA-OCM's review of a GLD through the program change review process. However, state consultation with tribes prior to submitting the program change to NOAA-OCM can inform NOAA-OCM's consultation and could help expedite NOAA-OCM's review.

⁶⁵ https://static1.squarespace.com/static/5bc79df3a9ab953d587032ca/t/5f0cdc876f40e375a32305af/1594678422449/WestCoastTribalEngagmentGuidance_July2020.pdf

provide information and knowledge and may be able to anticipate Tribal leadership's level of interest or concern with ample time for communication and modification.

Each state and territory will have different Tribal consultation obligations, and although some agencies may only be responsible for consulting with federally recognized Tribal governments, it is best practice for Coastal Programs to also coordinate with non-federally recognized Tribes. Non-federally recognized Tribes may act as both subject matter experts regarding cultural resources, including natural resources used to sustain cultural identity and lifeways, that may be impacted by the activity, and as affected users, which may include harvesting, gathering, or spiritual/cultural uses. Contributors to this document have limited knowledge about how formally state-recognized Tribes (but not necessarily federally-recognized) may interact and collaborate with Coastal Programs, but this level of recognition should not be overlooked.

Best practices to consider while coordinating with Tribal Nations -

- Many Tribal Nations consider natural resources as cultural resources due to the deep connection that natural resources have to traditional uses, practices, and lifeways. State Programs should be respectful of this connection and where possible, implement policy that recognizes this relationship.
- Identifying the geographic locations of cultural and traditional resources should be handled with the highest level of sensitivity. A Tribal government may not allow sharing this information with Coastal Programs or others. In those cases, the Coastal Program should identify an alternative process to allow Tribal Nations to maintain confidential information while also contributing to the process and spatial analysis. Asking Tribal Nations if there is an alternative process they would be comfortable with is the best way to succeed and to establish trust.
- Disclose applicable records release authorities to avoid misunderstandings about what information and data the Coastal Program can legally withhold in the event of a public records request.
- Science-based decision making will be strengthened and validated by traditional knowledge. Traditional knowledge often confirms what the scientific method has uncovered over the last few centuries. Traditional knowledge is rooted in observation, language, songs, traditional practices, ceremonies, places, and stories. This knowledge does not necessarily need to be recorded and published to exist. Referencing knowledge gained from the Tribe or indigenous community with date of personal communication is an important first step to establishing connection while respecting sensitive cultural information. Consultation with Tribes should address if and how to document resources or impact concerns so as to address it in the GLD.
- Tribal Nations are not members of the public and should not be addressed as such. Although Tribal governments are not excluded from providing public comment, out of respect for their sovereign status, coordination and engagement should occur separately from public comment periods, even at the staff-to-staff level. When tribal representative comments are provided, the commenter's affiliation should be noted within the record.
- While in the development and identification of resources for a GLD, communication with Tribal Nation leaders (like a Tribal Council) should be conducted by agency leadership or the Governor's office when appropriate, rather than staff members. This indicates respect for the Tribes' status as

sovereign nations demonstrated by leader-to-leader communication. The West Coast Ocean Alliance Tribal Engagement Guidance Document provides helpful guidance.⁶⁶

- Silence in response to state requests should not be taken as concurrence or disinterest. Tribal governments struggle with staff and capacity constraints like any other governmental agency. Coastal Programs should provide multiple methods and attempts of communication throughout the process to coordinate with Tribal Nations.
- Federal Consultation may also be required for GLD approval; however, this may come later in the process and add costs or delay work to include information or address Tribal concerns or resources. Thus, it is recommended the Coastal Program move forward with staff engagement and consultation with Tribes when commencing GLD planning or development.

Coastal Users

Coastal Programs should use multiple strategies to gather information on which coastal users are affected, or potentially affected, by a specific activity. Where possible, data should be gathered in a spatial format. Information gathering methods could include:

- An electronic survey sent to established listservs and shared by other coastal organizations.
- Stakeholder meetings at multiple locations within a coastal community that are familiar to a wide array of stakeholders. For example, community centers or town halls may be a good choice for some stakeholders, while a library or County office with help services for English-as-a-second-language users may be more comfortable for others.
- Focus groups to hear from specific user groups in a setting with their peers and without opponents present.
- One-on-one interviews with busy but key stakeholders, like dock workers, fishermen, and food processors.
- In-person surveys for visitors to the coast to capture transient but key information. Information is gathered by standing in a busy location and asking for participation from willing passersby.

States can look to previous federal consistency review decisions, stakeholder engagement meetings, and comment letters, as well as special area management planning efforts to draft a list of the types of users that might be affected by the activity in question. It is important for Coastal Programs to engage with the affected stakeholders prior to the state's public notice period required by NOAA's program change regulations to ensure that any potentially substantive changes from stakeholder input is addressed prior to the formal submittal.

Some of the users along the coast may include:

- Commercial Fisheries
- Recreational Fisheries
- Wildlife Viewing Enthusiasts
- Shipping Industry
- Other commercial/recreational boating activities
- Scientific Researchers
- Tourists/Visitors
- Non-consumptive Recreation (i.e., beach users, surfers, kayakers)

⁶⁶https://static1.squarespace.com/static/5bc79df3a9ab953d587032ca/t/5f0cdc876f40e375a32305af/1594678422449/WestCoastTribalEngagmentGuidance_July2020.pdf.

GLD Application Process, Timeline, and Submittal

Submission Process & Federal Consistency Lists

Since a GLD must be approved by NOAA-OCM via a Program Change to a state's federal consistency list, it is beneficial for the Coastal Program to provide the draft GLD and the accompanying analysis to NOAA-OCM contacts (either Federal Program Liaison or Stewardship Division federal consistency staff) prior to formal submission and prior to providing affected federal agencies with notice 60 days prior to formal program change submission required by 15 C.F.R. § 930.53. Coastal Programs are encouraged to coordinate with NOAA-OCM early and often, to ensure that any potential challenges in the analysis are addressed prior to submission.⁶⁷ While this early review is not an indication of whether the GLD will be approved, NOAA-OCM is available to respond to any questions and to provide guidance or feedback on the overall document. The decision as to how involved NOAA-OCM will be prior to the final submission for approval of a GLD is up to the Coastal Program. Coastal Programs with successful applications have relayed that early and frequent communication with NOAA-OCM was essential to the success of the project.

The procedures used to submit a proposed GLD for NOAA-OCM review is relatively simple in comparison to the process necessary to analyze coastal effects and develop the draft.

GLD Program Change: When a state conducts an effects analysis for a proposed GLD, the state needs to identify which federal permits/licenses will be reviewed using the GLD. Once a Coastal Program has completed the drafting and received feedback from NOAA-OCM on the draft, the proposed GLD should be submitted as a Program Change, pursuant to 15 C.F.R. Part 923, Subpart H. A Program Change to add (or amend) a GLD is technically an amendment to the State's federal consistency list, which is where the state lists all the federal permits and licenses subject to routine federal consistency review, including those inside the coastal zone. Before submitting the formal GLD program change, the Coastal Program must first provide notice and opportunity for comment to affected federal agencies at least 60 days before submitting the program change to NOAA-OCM. NOAA-OCM has suggested allocating the GLD in a separate section of the federal consistency list (or interstate consistency list, if the GLD is for interstate consistency review authority). There are many examples of this formatting, including North Carolina, Rhode Island, and Oregon.⁶⁸

Federal Consistency List Updates Inside & Outside the Coastal Zone: NOAA-OCM has indicated that any permit/license that will be reviewed using the GLD should also be included on the state's federal consistency list of activities to be reviewed inside the state's coastal zone. For example, if a GLD is proposing to allow a Coastal Program to review an NPDES permit in federal waters, that NPDES permit should also be listed as subject to routine federal consistency review in state waters (pursuant to 15 C.F.R. § 930 (Subpart D)) (see Appendix 3).

⁶⁷ The Program Change regulations encourage States to "consult with, and submit draft program changes to, NOAA "for informal review and comment prior to submitting a program change." 15 C.F.R. § 923.81 The regulation goes on to require that, "If consulted, NOAA shall review draft submissions to identify issues that would need to be addressed in the formal submission." Id.

⁶⁸ National Oceanic and Atmospheric Administration, Office for Coastal Management, *State Federal Consistency Lists*; available at: <https://coast.noaa.gov/czm/consistency/states/>.

Additional Federal Consistency List Updates: Since GLDs require such extensive research and analysis, it is very likely that a state undergoing the exercise will discover information on other federal activities that may be of interest for federal consistency review. In this case, the GLD analysis could lead to a substantial federal consistency list update for additional activities taking place within the coastal zone (in addition to the activities outside the coastal zone via GLD). (See Appendix 3)

AMENDING A GEOGRAPHIC LOCATION DESCRIPTION

A GLD can be updated through a Program Change to incorporate new information and science at any point.



Planning for an Iterative Process

Since the purpose of the GLD process is to gather the best available science and determine foreseeable impacts, topical understanding is likely to evolve throughout the process. This elevates the importance of designing an iterative process so that accuracy and efficiency are at the forefront. Additionally, Coastal Programs should use a strategy that will allow for updates as more information becomes available regarding the subject, both during and after submission of the GLD application and corresponding Program Change. As such, Coastal Programs may find it easier to propose a modest GLD to start with, get NOAA-OCM approval, and then consider GLD expansion or additional GLDs at a later date. A GLD can be updated through a Program Change to incorporate new information and science at any point.

Table 7: EXPERIENCED GLD DRAFTING AND SUBMISSION TIMELINE		
State & Type of GLD	Timeline (Beginning of the drafting, through NOAA-OCM approval)	Total Time
Oregon: Marine Renewable Energy	<ul style="list-style-type: none"> ● Began drafting: 2013 ● Submitted to NOAA for review: July 29, 2015 ● Approved by NOAA: Sept. 8, 2015 	~2 years
Rhode Island: Marine Renewable Energy	<u>2011 GLD</u> <ul style="list-style-type: none"> ● Ocean SAMP development: 2008-2010 ● GLD Approved by NOAA: Sept. 29, 2011 	~2 years
	<u>2018 GLD</u> <ul style="list-style-type: none"> ● Developed in July 2018 ● Submitted to NOAA for review: Sept. 2018 ● Approved by NOAA on Dec. 7, 2018 	~5 months
Delaware: Dredging and Dredged Disposal, Offshore Alternative Energy Development, Introduction of Non-native Shellfish	<ul style="list-style-type: none"> ● Began drafting: 2009 ● Submitted to NOAA: Oct. 20, 2010 ● Approved by NOAA: Feb. 3, 2011 	~2 years
Permits for Ocean Disposal of	<ul style="list-style-type: none"> ● Began Drafting: 2001 	~6 years

Dredged Material in Connecticut Waters	<ul style="list-style-type: none"> ● Submitted to NOAA for Review: Feb. 7, 2006 ● Approved by NOAA: Mar. 28, 2006 	
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GLD Application Strategy and Format Options

NOAA-OCM's regulations require that GLD program changes must include the eight-component coastal effects analysis and a written and spatial (map) description of the GLD.⁶⁹ How a Coastal Program addresses these requirements does not follow a specific format. However, a common theme has emerged from the successful applications. Applicants either describe all of the ways that the activity can affect its uses or resources, or a subset of the most concerning ways that the activity can affect the state's uses or resources. There are benefits and drawbacks to both, and this section briefly discusses them.

NOAA-OCM has described Oregon and Rhode Island's GLDs as two different examples of ways Coastal Programs have been able to successfully establish reasonably foreseeable effects of marine renewable energy site installations to valuable state resources based on the best science available. While Coastal Programs can pursue GLDs for innumerable activities, the document relies on the ability of the Program to establish that there are plausible effects to state resources tied to the activity in question.

Oregon Strategy

Similar to Oregon's GLD, a Coastal Program can choose to document all of the known potential effects to the resources of concern prior to submission of the GLD to NOAA-OCM. One of the major benefits to using this strategy is that a lot of the background work is completed when drafting the initial document. Consequently, the Federal Consistency Review process will be that much more informed because the effects have been documented for each of the resources the state has prioritized in its GLD. Further, this will allow the federal agency involved, along with any other applicants, to see the types of potential issues that could be caused by the authorization of an activity, allowing mitigation strategies to be much more targeted to the resources identified. In addition to documenting several concerns, this process allows for the Coastal Program to meet a diversity of affected stakeholders who may be involved in future negotiations during the future federal consistency review.

Using the Oregon strategy depends on the time and resources available to Coastal Programs at the time of drafting the GLD. Due to the nature of the work, a GLD as expansive as Oregon's GLD for marine renewable energy requires an abundance of resources (e.g., money, time, administrative capacity, and data availability). If these resources are not available, the process of drafting a GLD might take longer than expected. This strategy should be used in a way that provides for some flexibility to reach completion. Best practice would be to overestimate time required, rather than underestimate.

Rhode Island Strategy

Rhode Island's GLD for Marine Renewable Energy has a narrower scope regarding the reasonably foreseeable effects to its coastal resources and coastal uses, focusing on the effects to economically important fisheries in the region. Since most of these fisheries directly contribute to the state's economy, NOAA-OCM agreed with the state that siting marine renewable energy facilities in areas that

⁶⁹ 15 C.F.R. § 923.84(d).

overlap with these fisheries would result in reasonably foreseeable effects to coastal resources and coastal uses.

One of the benefits of using Rhode Island's strategy is the ability to develop a GLD in a shorter timeline, because the analysis relies on the direct effects from the activity in question. While Rhode Island could have included broader coastal effects from marine renewable energy to other state resources, the state made the decision early on to focus on the fishery sector due to the strong data support for displacement and disruption of the RI-based fishery as a result of the activity in question. **Further, this strategy does not bar the state from listing the other reasonably foreseeable effects during its federal consistency review of the permit.** This method is highly recommended for permits/activities that will be taking place in the next two-three years (shorter timeframe), further ensuring state-federal coordination on projects encompassing areas outside of the coastal zone.

Single Activity and Multi-Activity GLD Applications

The majority of GLDs approved by NOAA-OCM are single activity GLDs, which may encompass multiple federal permits and licenses. Single activity GLDs can be useful in that their effects-based analysis is narrowly focused, and the rationale is targeted to one activity. A limitation of this approach is that many single activity GLDs must be submitted for the state to have the ability to review each activity for coastal effects, while the impacts to resources might be very similar. The work can sometimes be redundant and an ineffective use of already limited staff time; for both NOAA-OCM and state Coastal Program staff.

Currently, NOAA-OCM has approved a small number of multi-activity GLDs, including Delaware and Connecticut's GLDs, which cover multiple federal activities. For example, Delaware's GLD application included dredging and dredging material disposal, offshore alternative energy, and introduction of non-native shellfish activities. One potential benefit of submitting a multi-activity GLD is that it will be considered less discriminatory to industries covered by the federal permits listed in the GLD because there are several activities that are subject to the Federal Consistency Authority. On the other hand, it may be harder to show the causal connection between the activities and the effects on the state/territorial coastal resource or use via a multi-activity GLD.

Conclusion

Geographic Location Descriptions are a novel and visionary tool provided by NOAA's regulations to help facilitate management coordination between all levels of government and Tribal Nations. While GLDs present a unique opportunity for coastal programs to extend their CZMA review authority beyond their coastal zone for specific activities with coastal effects, to date, they have been relatively underused by coastal programs. The experiences and knowledge outlined in this document highlight that this use may be due to the time, resources, and capacity needed to develop the justification of reasonably foreseeable effects, as well as the coordination necessary to properly inform analyses and implementation. While practitioners can recognize that the management of coastal uses and resources is only becoming more complex with the advent of new uses and increased science surrounding coastal environments, GLDs can provide sideboards and help facilitate the discussions needed to appropriately navigate these complexities into the future.

This document was created by practitioners, for practitioners to illuminate the potential of GLDs as a tool for coastal programs, as well as clarify experiences from states with approved GLDs to help reduce impediments to development. The lessons learned, best practices, and key takeaways are intended to be updated through time as more coastal programs gain experiences with GLD application development, submission, and implementation during federal consistency reviews. Contributors hope that the questions and/or misunderstandings that surfaced during this document's formulation and into the future will foster discussion and result in better GLD application submissions over time.

CONTRIBUTE TO THIS DOCUMENT!

This document is intended to be updated on a rolling-basis with information gathered by Coastal Programs. If you have proposed updates or additional information, please contact - Coast.Permits@dlcd.oregon.gov at the Oregon Coastal Management Program.

Appendix 1: Case Studies

Delaware

In 2011, NOAA-OCM approved three GLDs for routine consistency review of the following federal authorizations and areas:

1. Dredging and dredged material disposal in designated areas of state waters of New Jersey and Pennsylvania under the Clean Water Act (CWA) Section 404;
2. Offshore alternative energy development in designated areas of state waters of New Jersey and Maryland under the CWA Section 404 and the Rivers and Harbor Act (RHA) Section 10 and in designated areas of federal waters under the Outer Continental Shelf Lands Act (OCSLA) and Federal Power Act (FPA); and,
3. Introduction of non-native shellfish in designated areas of state waters of Maryland and Virginia under the CWA Section 404 and RHA Section 10.

Dredging and dredged material disposal:

As required in 15 C.F.R. § 930.154 (governing the listing of federal activities for routine interstate consistency review), the Delaware Coastal Management Program (DCMP) provided justification that coastal effects from those listed activities, occurring within the described geographic area, are reasonably foreseeable. Data collection for the coastal effects justification began early in 2009. **DCMP chose to identify a couple of specific resources most impacted by each activity for which there was substantial supporting data and documentation available.**

DCMP proposed that dredging and dredge disposal activities of 50,000 cubic yards or more occurring in designated areas of state waters of NJ and PA have the potential for environmental impacts including disturbance to benthos, increased turbidity and localized water quality impacts, disturbance to habitat and aquatic species, and potential impacts to existing currents and shoaling patterns. Additionally, dredging polluted waterways, such as the Delaware River, poses the additional threat of a possible re-suspension of contaminated sediments and subsequent uptake of these pollutants by marine organisms. **DCMP used peer-reviewed scientific articles, federal Fishery Management Plans, and State fisheries reports and data to support the claims. NOAA approved this GLD, and Delaware's request for interstate consistency review authority, in neighboring states' waters.**

Offshore Alternative Energy Development:

The GLD proposed for the review of Outer Continental Shelf Lands Act and Federal Power Act authorizations for alternative energy projects in federal waters and review of Clean Water Act and Rivers and Harbors Act authorizations in state waters included areas off New Jersey, Maryland, and Virginia's coasts and BOEM administrative boundaries. DCMP justified the need for review of federal authorizations in these areas due to impacts to avian resources, marine life, fisheries, and navigation, as well as the need for regional coordination to address and prevent resource use conflicts that may occur as a result of alternative energy development. Peer-reviewed scientific articles presenting research on the environmental effects related to offshore alternative energy development and exploration were used in the justification. **NOAA approved DCMP's request for GLDs to review the specified federally permitted activities in federal waters; the GLD for interstate consistency review authority was approved, though the scope of the area was reduced to exclude Virginia and parts of New Jersey. Additionally, before NOAA-OCM granted approval, DCMP had to clarify that certain de minimis**

activities would be exempt from review, such as meteorological data collection facilities and facilities testing renewable energy generating technologies.

Introduction of Non-native Shellfish:

DCMP proposed a GLD to review the placement of new substrate or manipulation of existing substrate for the purpose of introduction of non-native shellfish in Chesapeake Bay within Maryland and Virginia. DCMP cited state fisheries landings data to demonstrate the importance of a native oyster species, supporting the justification that non-native species introduced either in the Chesapeake Bay or Delaware Bay estuary could very well proliferate in the other and cause deleterious, far-reaching impacts to Delaware's coastal zone should the species migrate via larvae dispersal or other hitchhiker method and colonize. ***NOAA approved this request to add a GLD for interstate consistency review.***

Rhode Island

Offshore Alternative Energy Development:

Coastal Resources Management Council focused its concerns on the impacts to local fisheries, fishing grounds, and habitat when developing its GLDs. In Rhode Island's Coastal Resources Management Council Federal Consistency Manual (http://www.crmc.ri.gov/regulations/Fed_Consistency.pdf), you can see that the State added GLDs to their federal activities list in 2011 and in 2018. Rhode Island constructed a marine spatial plan (OceanSAMP), which contains several analyses of reasonably foreseeable effects to state resources that would result from the authorization of federal activities and helped serve as justification for development of both GLDs. With engagement of the stakeholders, including the resources users and the state and federal government agencies, CRMC continue to focus on the purpose of the state rules, which is to carry out the responsibilities of the RI Coastal Resources Management Council in establishing the Ocean Special Area Management Plan (SAMP) for the offshore waters (beyond the 3 nautical mile state waters boundary) within the geographic location description (GLD) area and to provide the regulatory framework for promoting a balanced and comprehensive ecosystem-based management approach to the development and protection of Rhode Island's ocean-based resources.

Geographic Location Description (2011)

Rhode Island's 2011 GLD for federal waters includes the area described and evaluated as part of the Rhode Island Ocean Special Area Management Plan (SAMP). See manual for geographic description.

Thresholds and Exclusions:

Federal consistency review of federal license or permit activities is only sought for the following type of projects proposed within the area of the GLD. The following thresholds apply to all of the federal licenses and permits activities listed in Table 2:

- i. any offshore wind facilities, wave generation device(s), and tidal or ocean current device(s) of a permanent nature, regardless of size;
- ii. offshore LNG platforms (1 or more).
- iii. artificial reefs (1/2 acre footprint and at least 4 feet high), except for projects of a public nature whose primary purpose is habitat enhancement
- iv. Underwater cables;
- v. Mining and extraction of minerals, including sand and gravel;
- vi. Aquaculture projects of any size;

vii. Dredged material disposal;⁷⁰ and

viii. Meteorological towers deployed in lease blocks within the Area of Mutual Interest (AMI area) between Rhode Island and Massachusetts where mobile gear fishing activity is prevalent (OCS lease blocks 6816, 6817, 6864, 6865, 6866, 6867, 6914, 6915, 6916, 6964, 6965, 6966, 6967, 6968, 7014, 7015, 7016, 7017, 7018, 7019, 7020, 7021, 7064, 7065, 7066, 7067, 7068, 7069, 7070, 7071, 7114, 7115, 7116, and 7117; see Figure 2).

In addition, the following types of federal licenses and permits and federal agency activities shall be excluded from federal consistency review as having either no reasonably foreseeable coastal effect or insignificant effects not warranting federal consistency review. These exclusions apply to all of the federal licenses and permits, and federal agency activities listed in Table 1 and 2:

Excluded federal licenses and permits:

1. Regattas and marine parades pursuant to 33 C.F.R. § 100 (USCG).
2. Establishment of private aids to navigation.
3. Scientific sampling (benthic, pelagic, and water column).
4. Meteorological towers deployed in lease blocks within the AMI area where mobile gear fishing is not prevalent (OCS lease blocks 6764, 6765, 6766, 6814, 6815, 6917, 6918, 6919, 6969, 6970, and 6971; see Figure 2).

Excluded federal agency activities:

1. Regulated navigation areas pursuant to 33 C.F.R. § 110 (USCG), excluding changes to vessel traffic services pursuant to 33 U.S.C. § 1223.
2. Drawbridge operation regulations pursuant to 33 C.F.R. § 117 (USCG).
3. Establishment and maintenance of public (federal) aids to navigation.
4. Surface and submerged military activities.
5. Temporary speed zones or navigation modifications due to marine mammals.
6. Temporary federal mooring or anchorage areas, excluding permanent such changes pursuant to 33 U.S.C. § 471.

Geographic Location Description (2018)

Rhode Island's 2018 GLD includes an area of federal waters that is contiguous with Rhode Island's existing 2011 GLD but adds 797 square miles of the Atlantic Ocean in federal waters to the southeast (see manual for geographic description). Federal consistency review of federal license or permit activities is only sought for offshore wind facilities of a permanent nature, regardless of size, and underwater cables that are permitted by BOEM.

Oregon

Conducting marine spatial planning exercises can greatly benefit a CMP when diving into GLD Development.

Approved in 2015, the Oregon GLD delineates a large area outside of state waters where the development of offshore marine renewable energy facilities is technically feasible. The GLD application

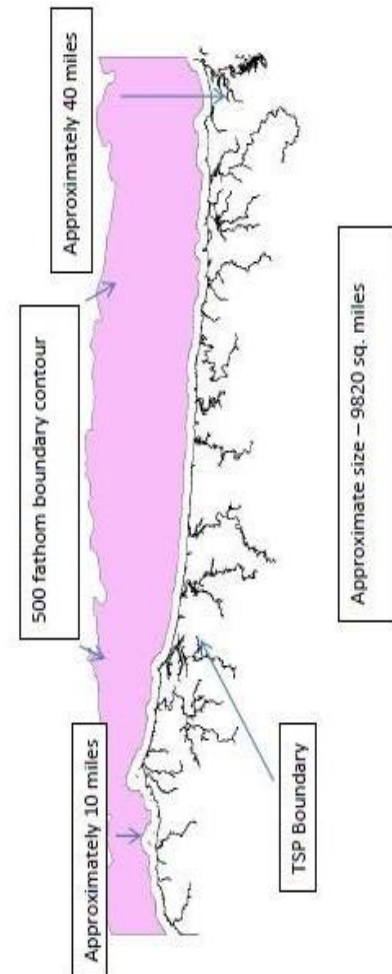
⁷⁰ NOAA-OCM did not approve the review of dredged material disposal in the GLD.

prepared by Oregon's Coastal Program describes the potential for the facilities to have reasonably foreseeable effects to state resources or uses and specifies the enforceable policies of the state which would be applied during a federal consistency review process.

In 2011, in support of early coordination and planning for potential marine renewable energy facility development –and in response to an unsolicited lease request – the federal Bureau of Ocean Energy Management (BOEM) and the State of Oregon established an intergovernmental Task Force comprised of local, state, and federal and tribal government officials. Although the original lease request was later terminated, the Task Force provided a forum for an efficient approach to the management of renewable energy on the outer continental shelf (OCS) off Oregon.

At the time of the Oregon GLD's drafting, approval, and publication, marine renewable energy technology had not advanced to where it is today, especially the floating offshore wind energy sector. Yet during GLD development, the Oregon Department of Land Conservation and Development (DLCD) was able to collaborate with researchers, agency officials, and other experts to determine areas where marine renewable energy facilities could potentially be sited, based upon energy resource availability and technical feasibility. The GLD boundary was selected after conducting a coastal effects analysis that identified the western (seaward) boundary of state natural resources or human uses that overlapped the technical feasibility for development.

Development of Oregon's marine renewable energy GLD has informed and influenced a subsequent coordinated planning effort: BOEM and the State of Oregon are engaged in a process to develop potential offshore wind energy Call Areas, with potential issuance in early 2022.



Appendix 2: Approved GLDs

Approved GLDs: Nationwide

This map shows all current federal and interstate GLDs in addition to highlighting some examples.

A comprehensive nation-wide list of approved GLDs is currently not available although NOAA Fisheries created a publicly available mapping service that displays GLDs as of March 2018. The links below can be used to access the full data:

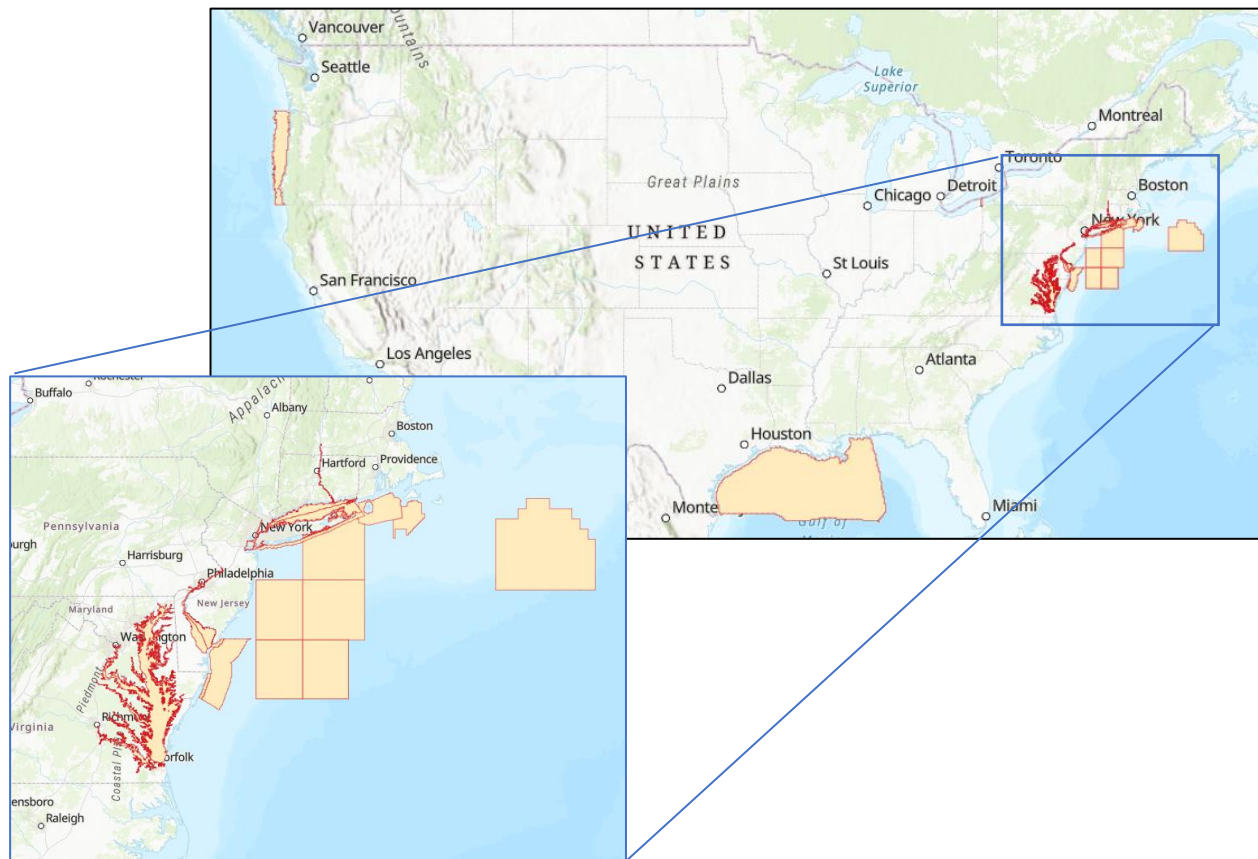
Service URL:

[Marine Cadastre National Viewer](#)

Data Download URL:

<https://marinecadastre.gov/downloads/data/mc/FederalConsistencyGeographicLocationDescriptions.zip>

[p](#)



Appendix 3: Causal Chain Example

Oregon has created a streamlined approach to developing the rationale required to demonstrate “reasonably foreseeable effects” to support an approved GLD, referred to in shorthand as a “causal chain.” The purpose of a causal chain is to provide a linear rationale for how an activity impacts state coastal resources and uses, while connecting each statement to the best available supporting science. Since ‘smoking gun’ research is not required to establish the Program’s right to review, but simply establish “reasonably foreseeable effects” to have the opportunity to review the activity in depth, the method modifies a traditional literature review format to better outline the connection between impacts of the activity and resources/uses important to the Program. In addition to creating the outline and support for the rationale of the GLD, Coastal Programs can also use the causal chain to assist in discussions with content experts throughout development.

The main components of a casual chain include:

- A linear progression/list of “known” information connecting the coastal effect(s) to the activity. (The progression becomes better developed over time as research and analysis takes place)
- Best available science supporting the “knowns” potentially including references, direct quotes, and bibliographic information (page number, citation, etc.)

A causal chain can be formatted based on a Coastal Program’s preferred methods for data collection. Due to the dense nature of the collected information, formatting in a spreadsheet, list, or table format may be beneficial. The following table outlines a highly simplified example of how a causal chain could be built for offshore seabed mining. The complexity of a causal chain is directly related to the specifics of the proposed activity and may be more complicated for emerging industries/activities since more surrogate/proxy activities may need to be used to establish the causal chain.

Example Seabed Mining Causal Chain Information is for example purposes only.		
“Known” Information (Information connecting the coastal effects to the activity)	References to Best Available Science (May include citations, direct quotes, etc.)	Page/ Line #
1. We know that mineral resources are finite, and the mineral resources on land are becoming more difficult to extract, due to exploitation, technological difficulties, regulatory policies, etc.	<ul style="list-style-type: none"> ● Miller et. al, 2018 - “Rising demand for minerals and metals, in tandem with the depletion of land-based resources, has led to a surge of interest in marine mineral resources.” 	2
2. We know that industry has begun to shift towards mining the seabed for these valuable elements, as evidenced by successful project applications in the Pacific and Indo-Pacific Oceans.	<ul style="list-style-type: none"> ● Christiansen et al. 2019 – “Currently five main types of deposits can be distinguished that have some potential for commercial exploitation: <ul style="list-style-type: none"> ○ Ferromanganese (FeMn) nodules, also called polymetallic nodules, occur on abyssal plains and are particularly abundant in the Pacific; 	1

	<ul style="list-style-type: none"> ○ Seafloor massive sulfides (SMS) form at hydrothermal vents, usually at mid-oceanic ridges and active seamounts; ○ Cobalt-rich ferromanganese (FeMn) crusts form at seamounts and slopes on sediment-free substrates, mainly at depths from 800 to 2500 m; ○ Metalliferous sediments in brine pools are known only from the central trough of the Red Sea; and ○ Phosphorite nodules occur at the upper continental slopes at depths of 200-400 m.” (1) 	
<p>3. We know that seabed mining can have long-term effects on critical habitat, damaging the local ecological community.</p>	<ul style="list-style-type: none"> ● Miller et. al, 2018, “An Overview of Seabed Mining Including the Current State of Development, Environmental Impacts, and Knowledge Gaps” ● Van Dover et al., 2017 – “Given the nature, scale and location of proposed seabed mining activities, serious and widespread negative impacts on biodiversity are inevitable and likely to be irreversible ().” 	<p>12 2</p>
<p>4. We know that the State’s/Territory’s waters are home to several unique habitats and species.</p>	<p>Insert specific references connecting critical habitat and sensitive/economically important species to state waters</p>	
<p>5. We know that the State/Territory is dedicated to protecting its resources, including these unique species/habitats, and has enacted policies aimed at protecting these resources.</p>	<p>Insert specific references to existing policies and management frameworks within the state and region.</p>	
<p>6. We know that the State’s/Territories continental shelf or surrounds has mineral deposits only accessible via seabed mining.</p>	<ul style="list-style-type: none"> ● Beauchamp & Cruikshank, 1967 – ““Placer deposits of gold and platinum are likely to occur, in association with other heavy mineral deposits, offshore of present rivers and estuary systems (e.g., Columbia River).” 	<p>699</p>
<p>7. We know that benthic communities rely on these unique topographic features, which house these elements, and the removal of these materials can result in long-term damage to the ecosystem.</p>	<ul style="list-style-type: none"> ● Tilot (2006) <ul style="list-style-type: none"> ○ “analyzed 200,000 photographs and 55 h of video footage (taken since 1975) to investigate the biodiversity and distribution of benthic megafauna associated with polymetallic nodules in the CCZ.” ○ “The study found the polymetallic nodule ecosystem to be a unique habitat for suprabenthic megafauna.” ● Miller et. al, 2018 – 	<p>12 12 14</p>

	<ul style="list-style-type: none"> ○ “However, it is unknown how long it would take for the recovery of vent-associated species.” ○ “Mining Cobalt-Rich Crusts deposits on seamounts will cause direct mortality to sessile organisms.” 	
<p>8. We know that certain variables (e.g. access to land, technological capabilities, local environment, etc.) must be considered when determining the feasibility of the activity along the coast.</p>	<ul style="list-style-type: none"> ● Lee and Holder, 2011 - “Gas hydrates have attracted attention commercially as a potential future energy resource, but prospecting and any subsequent extraction of gas hydrates from seabed (or permafrost) reserves carries potentially considerable environmental risk 	14
<p>9. We know that the State/Territory has other coastal users that could be impacted by the authorization of this activity.</p>	<ul style="list-style-type: none"> ● Amon, 2021 - “Additionally, through these functions, deep-sea ecosystems, including those that may be impacted by mining, deliver important regulating, provisioning and cultural services that link the environment and human well-being.” 	7

Appendix 5: Examples from State Lists of Federal Licenses and Permits for CZMA Review

Federal CZMA regulations require states to “develop a list of federal license or permit activities which affect any coastal use or resource, including reasonably foreseeable effects, and which the state agency wishes to review for consistency with the management program. The list shall be included as part of the management program, and the federal license or permit activities shall be described in terms of the specific licenses or permits involved.”⁷¹

NOAA-OCM explains that for purposes of federal consistency review, “a non-federal applicant for a federal license or permit provides a state with a *consistency certification* if the state has identified the federal license or permit on a list of activities subject to federal consistency review in its federally approved coastal management program.”⁷² While the CZMA regulations provide for a waiver process through which states may be able to review certain unlisted activities (see 15 C.F.R. § 930.54), states and federal agencies use the list to establish expectations regarding the types of federal licenses and permits for which a state expects to receive a consistency certification on a routine basis.

The following table includes *non-exhaustive* examples of federal licenses and permits that are found on states’ lists, as indicated by NOAA on its public website.⁷³ These examples vary among states in their specificity and coverage. Where states have provided a citation to the legal authority underlying the license or permit requirement, it is included here.

Federal Agency	Description <i>[alternative description used by some states]</i>	Legal Authority (Where provided by state)	State Trends (Popularity, examples, and/or state source)
Department of Defense			
U.S. Army Corps of Engineers	Construction of any dam, dike, or ditch across any navigable water of the United States, or obstruction or alteration of any navigable waters, pursuant to Sections 9 and 10 of the Rivers and Harbors Act of 1899.	33 U.S.C. 401, 403	Very common
U.S. Army Corps of Engineers	Establishment of harbor lines pursuant to Section 11 of the Rivers and Harbors Act of 1899.	33 U.S.C. 404, 405	Very common

⁷¹ 15 C.F.R. §930.53.

⁷² Office of Coastal Management, NOAA, *Applying Federal Consistency*, <https://coast.noaa.gov/czm/consistency/applying/>.

⁷³ The information compiled and provided publicly by NOAA has not been independently verified using States’ coastal management program documents and/or program change records. The website where State lists are compiled by NOAA is found at <https://coast.noaa.gov/czm/consistency/states/>.

U.S. Army Corps of Engineers	Occupation of sea wall, bulkhead, jetty, dike, levee, wharf, pier, or other work built by the United States pursuant to Section 14 of the Rivers and Harbors Act of 1899.	33 U.S.C. 408	Common
U.S. Army Corps of Engineers	Approval of plans for improvement made at private expense under U.S. Army Corps of Engineers supervision pursuant to the Rivers and Harbors Act of 1899.	33 U.S.C. 565	E.g. Delaware , California (SF Bay)
U.S. Army Corps of Engineers	Discharge of dredged or fill material into the waters of the United States pursuant to Section 404 of the Clean Water Act of 1972, as amended.	33 U.S.C. 1344	Very common
U.S. Army Corps of Engineers	All actions for which permits or waivers are required pursuant to Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972, as amended. <i>[Permits and licenses to regulate transportation of dredged material for the purpose of dumping it in ocean waters under Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972.]</i>	33 U.S.C. 1413	Very common
U.S. Army Corps of Engineers	Construction of artificial islands and fixed structures on the Outer Continental Shelf pursuant to Section 4(f) of the Outer Continental Shelf Lands Act not otherwise covered in an OCS plan.	43 U.S.C.1333(e)	E.g., Oregon
U.S. Army Corps of Engineers	Selection of open water dredged material disposal sites pursuant to the Clean Water Act, as amended.	33 U.S.C. 1344(b).	Some states have this in the EPA section only (e.g., Maryland), but some in the USACE section (e.g., Connecticut).
U.S. Army Corps of Engineers	Approval for projects for the prevention or mitigation of damages to shore areas attributable to federal navigation projects.	33 USC 426i	Texas
U.S. Army Corps of Engineers	Approval for projects for the placement on state beaches of beach-quality sand dredged from federal navigation projects.	33 U.S.C. 426j	Texas
U.S. Army Corps of Engineers	Memoranda of Agreement for mitigation banking.	-	Texas

Department of Energy

DOE	Regulation of gas pipelines and the authorization for the import or export of natural gas pursuant to the Natural Gas Act and the Energy Reorganization Act of 1974.	15 U.S.C. 717 et seq; 42 U.S.C. 5801 et seq.	Very common (This is Rhode Island 's phrasing.)
DOE	Siting, construction, and operation of non-nuclear power plants.		E.g., Connecticut , New York , Delaware
FERC	Licenses required for non-Federal hydroelectric projects and primary transmission lines under sections 3(11), 49(e) and 15 of the Federal Power Act of 1935, as amended.	16 U.S.C. 796(11), 797(e), and 808	E.g., North Carolina , Virginia
FERC	Orders for interconnection of electric transmission facilities under section 202(b) of the Federal Power Act of 1935 and its amendments.	16 U.S.C. 824a(b)	Very common
FERC	Permits and licenses for construction and operation of facilities needed to import, export, or transship natural gas or electrical energy.	15 U.S.C. 717 et seq.; 16 U.S.C. 824 et seq.	E.g., California (CCC)
FERC	Permits, licenses, and /or certificates of public convenience and necessity for the construction, operation, and/or maintenance of natural gas pipeline facilities including both interstate pipelines and LNG terminal facilities under Section 7(c) of the Natural Gas Act of 1938, as amended and Section 311 of the Energy Policy Act of 2005.	15 U.S.C. 717 et seq.	Very common
FERC	Permission and approval for the abandonment of natural gas pipeline facilities under Section 7(b) of the Natural Gas Act of 1938, as amended.	15 U.S.C. 717(b)	Very common
FERC	Licenses of Outer Continental Shelf (OCS) construction and operations and other authorizations and exemptions by the Federal Energy Regulatory Commission under the Federal Power Act as amended, for OCS activities including hydrokinetic energy activities.	16 U.S.C. 792-823	Very common
Department of Homeland Security			
US Coast Guard	Permits and licenses for offshore LNG terminals and other deepwater port facilities issued pursuant to Sections 4 and 5 of the Deepwater Port Act of 1974, as amended.	33 U.S.C. 1501 et seq.	Very common
US Coast Guard	Permits for construction or modification of bridges, causeways, or pipelines over navigable waters pursuant to Section 9 of the Rivers and Harbors Act of 1899, as	33 USC 401; 33 USC 491; 33 USC 525, 535	Very common (This language/citation

	amended (33 U.S.C. 401); General Bridge Act General Bridge Act of 1946; and 33 CFR 114, 115, and 117.		is from North Carolina.)
US Coast Guard	Approvals for private aids to navigation.	14 U.S.C. 83	Common
US Coast Guard	Nominations for anchorages, including layups, under the Ports and Waterways Safety Act,	-	Washington
Department of Commerce			
NOAA	Approval of activities affecting marine sanctuaries under Section 304(b) of the Marine Protection, Research and Sanctuaries Act of 1972 and its amendments.	16 U.S.C. 1434	Most of the states whose lists were reviewed did not include a section for DOC/NOAA. California (CCC) does include this on its list.
NOAA	Permits and authorizations related to the taking of marine mammals pursuant to the Marine Mammal Protection Act of 1972 and its amendments (16 U.S.C. 1361 et seq.)	16 U.S.C. 1361 et seq.	Most of the states whose lists were reviewed did not include a section for DOC/NOAA. California (CCC) does include this on its list.
NOAA	Permits, licenses and approvals issued pursuant to the Fishery Conservation and Management Act of 1976.	-	Hawaii
NOAA	Authorization to construct or operate an ocean thermal energy conversion facility under the Ocean Thermal Energy Conversion Act of 1980.	42 U.S.C. 9101 et seq.	California (CCC)
Department of the Interior			
DOI	Permits and licenses for drilling and mining and related facilities on public lands.	30 U.S.C. Sections 22-42 and 181-287.	E.g., Rhode Island
DOI	Permits for pipelines crossing federal lands, including OCS lands, and associated activities pursuant to the OCS Lands Act, as well as 43 U.S.C. 931(c).	43 U.S.C. 1334); 43 U.S.C. 931(c).	E.g., New York
Bureau of Land Management	Permits and licenses for rights-of-way on public lands (BLM) (43 U.S.C. 1761, and 30 U.S.C. 185).	43 U.S.C. 1761; 30 U.S.C. 185	Common

Bureau of Land Management	Permits and licenses required for drilling and mining on public lands.	30 U.S.C. Sections 22-42 and 181-287	E.g., California (SF Bay)
BOEM	All leases, licenses, permits, and approvals related to Outer Continental Shelf (OCS) exploration and development and production plans (including any amended plans submitted in response to objections to the Coastal Management Program to a previously submitted plan), and other authorizations by the Bureau of Ocean Energy Management under the Outer Continental Shelf Lands Act of 1953 (OCSLA) and its amendments for the exploration, construction, operation, maintenance, and/or support activities related to OCS activities including oil and gas activities, alternative energy activities and alternative uses of existing facilities, and underwater cables.	43 U.S.C. 1331 et seq.	Very common
BOEM	Rights of way, rights of use, and easements for construction and maintenance of pipelines, gathering and flow lines and associated structures pursuant to OCSLA Section 5e.	43 U.S.C. 1334	E.g., Rhode Island
US Fish & Wildlife Service	Permits and authorizations issued pursuant to the Endangered Species Act of 1973 and its amendments.	16 U.S.C. Ch. 35	E.g., Rhode Island , Georgia
US Fish & Wildlife Service	Permits and authorizations related to the taking of marine mammals pursuant to the Marine Mammal Protection Act of 1972 and its amendments.	16 U.S.C. 1361-1407	E.g., Rhode Island
US Fish & Wildlife Service	Permits pursuant to the Migratory Bird Treaty Act.	16 U.S.C. 703	Georgia
Department of Transportation			
DOT	Permits for regattas and marine parades.	33 U.S.C. 1233	Massachusetts
Federal Aviation Administration	Permits and licenses for the construction, operation, and alteration of airports	49 U.S.C. Section 44706 et seq.	E.g., California (SF Bay)
Surface Transportation Board	Authorization of new construction, expansion, upgrading, curtailment, abandonment, or demolition of railroad facilities or services.	49 U.S.C. 10901 et seq	E.g., Oregon
Surface Transportation Board	Final Interstate Access Approvals for access to the Interstate Highway System.	23 U.S.C. 109 and 111, 23 CFR 624.5, and 49 CFR 1.48(b)(1))	California (CCC)

Maritime Administration (MARAD)	Permits and licenses for offshore LNG terminals and other deep water port facilities issued by MARAD pursuant to sections 4 and 5 of the Deepwater Port Act of 1974, as amended.	33 USC 1501 et seq.	California (SF Bay)
Office of Pipeline Safety Operations	Permits for transportation of liquids other than petroleum products by pipeline.	Section 195.6 of regulations for transportation of liquids by pipeline	E.g., Louisiana , South Carolina
Nuclear Regulatory Commission			
NRC	Permits and approvals related to the construction and operation of commercial nuclear reactors pursuant to the Atomic Energy Act of 1954 and its amendments (including de-licensing activities).	42 U.S.C. 2131 et seq.	E.g., Rhode Island
Environmental Protection Agency			
EPA	Permits under the Clean Water Act, unless such permitting authority is delegated to the State, under Sections: 402 National Pollutant Discharge Elimination System (NPDES); 403, discharges into territorial seas, the contiguous zone, and ocean waters farther offshore (33 U.S.C. 1343); 404, ocean dumping authorizations; 405, disposal of sewage sludge.	33 U.S.C. 1342, 1343, 1344, 1345	Very common
EPA	Permits for the transportation of dumping material other than dredged material in navigable waters, issued in conjunction with the U.S. Army Corps of Engineers, pursuant to Sections 102 and 104 of the Marine Protection, Research and Sanctuaries Act of 1972 and its amendments.	33 U.S.C. 1412, 1414	Very common
EPA	Permits and applications for reclassification of land areas under regulations for the Prevention of Significant Deterioration (PSD) of air quality under the Clean Air Act of 1976 and its amendments.	42 U.S.C. 7474	E.g., Florida , California (SF Bay) , Oregon
EPA	Permits and waivers of compliance allowing extensions of time to meet air quality standards under section 112(c)(1) of the Clean Air Act of 1972 and its amendments.	-	California (SF Bay)
	Exemptions granted under the Clean Air Act for stationary sources.	-	California (SF Bay)

EPA	Permits pursuant to the Resource Recovery and Conservation Act of 1976 and its amendments for facilities that store, treat, or dispose hazardous waste.	42 U.S.C. 6925	E.g., Delaware
EPA	Permits and authorization for underground injections pursuant to section 1421 of the Safe Drinking Water Act.	42 U.S.C. Chapter 82	E.g., Rhode Island , California (SF Bay)
EPA	Aquaculture pursuant to Section 318 of the Marine Protection, Research and Sanctuaries Act of 1972 and its amendments (16 U.S.C. 1445c).	16 U.S.C. 1445c	E.g., California (SF Bay)
EPA	Permits and licenses relating to the transportation of hazardous substance materials or transportation and dumping.	33 U.S.C. 1321	E.g., Florida
Department of Agriculture			
USDA	Permits for waterplants, dams, etc. under 16 USC 497	16 USC 497	Louisiana
USDA	Permits for construction of hotels, etc. on National Forest Service lands under 16 USC 497	16 USC 497	E.g., Hawaii , Louisiana

Appendix 6: Non-Exhaustive List of Models and Decision Tools

Model Name & Link	Publisher	Description (Directly from publisher)
LiveOcean https://faculty.washington.edu/pmacc/LO/LiveOcean.html	University of Washington, MacCready Lab	LiveOcean is a computer model simulating ocean water properties. It makes 3-day forecasts of currents, temperature, salinity, and many biogeochemical fields including harmful algal blooms.
Water Quality Analysis Simulation Program (WASP) https://www.epa.gov/ceam/water-quality-analysis-simulation-program-wasp	U.S. Environmental Protection Agency	The Water Quality Analysis Simulation Program (WASP) is an enhancement of the original WASP (Di Toro et al., 1983; Connolly and Winfield, 1984; Ambrose, R.B. et al., 1988). This model helps users interpret and predict water quality responses to natural phenomena and manmade pollution for various pollution management decisions. WASP is a dynamic compartment-modeling program for aquatic systems, including both the water column and the underlying benthos.
Water Quality Framework – Salish Sea Model https://www.pnnl.gov/projects/salish-sea-model/water-quality-framework	Pacific Northwest National Laboratory in partnership with Washington State Department of Ecology	The Salish Sea Model (SSM) water quality computational framework was designed to simulate the influence of nutrients and carbon on biogeochemical oceanographic processes such as phytoplankton primary productivity and dissolved oxygen (DO) concentrations. PNNL and Washington State Department of Ecology in consultation with a Model Technical Advisory Committee of experts selected the CE-QUAL-ICM model, a state-of-the-art biogeochemical code developed by the U.S. Army Corps of Engineers (Cercio and Cole 1995) for coupling to the Finite Volume Coastal Ocean Model (FVCOM). It is capable of simulating 32 state variables, including multiple algae, carbon, multiple zooplankton, phosphorus, nitrogen, silica, and DO. Aquatic vegetation, benthic deposit feeders, and a predictive sub-model to calculate the interactive fluxes of DO and nutrients between the sediment and the water columns are also available.
Ocean Component Model (COCO) https://ccsr.aori.u-tokyo.ac.jp/~hasumi/COCO/coco4.pdf	Center for Climate System Research (CCSR)	The current version of COCO is based on the primitive equations under the hydrostatic and Boussinesq approximations with explicit free surface, and is formulated on the generalized curvilinear horizontal coordinate and (basically) the geopotential height vertical coordinate. COCO also constitutes an ocean component of MIROC, a coupled general circulation model developed at CCSR

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Coupled Hydrodynamical Ecological Model for Regional Shelf Seas (COHERENS) https://odnature.naturalsciences.be/coherens/about#:~:text=The%20name%20COHERENS%20is%20an,lakes%2C%20reservoirs%2C%20...	Royal Belgian Institute of Natural Sciences	COHERENS is an open-source ocean circulation model developed during the nineties by several European institutions and the Management Unit of the North Sea Mathematical Models and the Scheldt estuary (MUMM, now OD Nature). The name COHERENS is an acronym for COUpled Hydrodynamical Ecological model for REgional Shelf seas. It is a three-dimensional multi-purpose numerical model, designed for application in coastal and shelf seas, estuaries, lakes, reservoirs
The Hamburg Large Scale Geostrophic Ocean General Circulation Model (LSG) https://inis.iaea.org/search/sea_rch.aspx?orig_q=RN:26000704	Maier-Reimer, E. (Max-Planck-Institut fuer Meteorologie, Hamburg (Germany)); Mikolajewicz, U. (Max-Planck-Institut fuer Meteorologie, Hamburg (Germany)) Deutsches Klimarechenzentrum (DKRZ), Hamburg (Germany)	The rationale for the Large-Scale Geostrophic Ocean circulation model (LSG-OGCM) is based on the observations that for a large-scale ocean circulation model designed for climate studies, the relevant characteristic spatial scales are large compared with the internal Rossby radius throughout most of the ocean, while the characteristic time scales are large compared with the periods of gravity modes and barotropic Rossby wave modes. In the present version of the model, the fast modes have been filtered out by a conventional technique of integrating the full primitive equations, including all terms except the nonlinear advection of momentum, by an implicit time integration method. The free surface is also treated prognostically, without invoking a rigid lid approximation. The numerical scheme is unconditionally stable and has the additional advantage that it can be applied uniformly to the entire globe, including the equatorial and coastal current regions.
Hybrid Coordination Ocean Model (HYCOM) https://www.hycom.org/		In HYCOM, each coordinate surface is assigned a reference isopycnal. The model continually checks whether or not grid points lie on their reference isopycnals and, if not, tries to move them vertically toward the latter. However, the grid points are not allowed to migrate when this would lead to excessive crowding of coordinate surfaces. Thus, in shallow water, vertical grid points are geometrically constrained to remain at a fixed depth while being allowed to join and follow their reference isopycnals over the adjacent deep ocean.
Princeton Ocean Model (POM) http://www.ccpo.odu.edu/PO_MWEB/	Princeton University (G. Mellor and Alan Blumberg)	The Princeton Ocean Model (POM), a simple-to-run yet powerful ocean modeling code to simulate a wide-range of problems, from small-scale coastal processes to global ocean climate change. POM is a sigma coordinate (terrain-following), free surface ocean model with embedded turbulence and wave sub-models, and wet-dry capability. POM has been a pioneering force in ocean research since the early 1980s, and continues with innovative new developments by its thousands of users worldwide until today.
The Regional Modeling System (ROMS)	Open Source	ROMS is a free-surface, terrain-following, primitive equations ocean model widely used by the scientific community for a diverse range of applications (e.g., Haidvogel et al., 2000;

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https://www.myroms.org/ https://en.wikipedia.org/wiki/Regional_Ocean_Modeling_System	Contact: Peter Raimondi (University of California, Santa Cruz)	Marchesiello et al., 2003; Peliz et al., 2003; Di Lorenzo, 2003; Dinniman et al., 2003; Budgell, 2005; Warner et al., 2005a, b; Wilkin et al., 2005). The algorithms that comprise ROMS computational nonlinear kernel are described in detail in Shchepetkin and McWilliams (2003, 2005), and the tangent linear and adjoint kernels and platforms are described in Moore et al. (2004). ROMS includes accurate and efficient physical and numerical algorithms and several coupled models for biogeochemical, bio-optical, sediment, and sea ice applications. The sea ice model is described in Budgell (2005). It also includes several vertical mixing schemes (Warner et al., 2005a), multiple levels of nesting and composed grids.