

Theme:

Environment: Environmental management in navigation

Working title:*The challenges of limiting the environmental impact of fairway projects*

The Norwegian Coastal Administration (NCA) has as a main objective to ensure safe and efficient navigation along the Norwegian coastline. NCA activities encompass the maritime sector of the National Transport Plan (NTP). The NTP outlines how the Norwegian government intends to prioritize resources within the transport sector. Further, the NCA exercises authority and administrative tasks related to the laws and regulations for ports, fairways and compulsory pilot service.

If someone asked *what is a "typical" NCA construction project?* The answer would be *there is no such thing*. The Norwegian mainland's coastline is almost 29 000 km long. By including islands, the total coastline is just over 100 000 km. The coastline has its southernmost point at 57° and the northernmost at 71° north. This presents with a working environment where one must take into account a high diversity, both of biological- and geological factors, when construction projects are planned and conducted. The climate also represents seasonal challenges by e.g. extreme temperatures during winter, storms and ice.

The coast has always been a lifeline for the Norwegian society. Today, 90 % of the Norwegian export revenue originates from activity and resources connected to the sea. Increasing the quality of fairways is a well-known risk-reducing measure for vessel traffic. When a new fairway is developed, existing fairways are improved or a harbor is dredged, pollution is often an issue. Industry, including i.e. fisheries, oil and gas support services and shipyards has been, and still is located to the coast and other large water bodies connected to the sea. For decades, it was common practice to use the sea as an easy way to get rid of waste. For the Norwegian ports and fairways, we like to think of this as something that is behind us. Nevertheless, our past environmental sins become present, also for NCA projects. Deep layers of various types and degrees of pollution create challenges and severely increase the project cost and complexity. The removing of toxins and other type of pollution through a fairway- or harbor project is in most cases a win-win for the environment – if conducted right. Considerations must be made to prevent the spreading of both clean and polluted sediments. This also includes e.g. runoff that contains toxins from a disposal site and in general, or damages on the environment by increased turbidity.

When preparing and executing projects, the governing authority is the County Governor's environmental department. 16 out of Norway's 20 counties (not including Svalbard) has a coastline and is a potential authority when the NCA applies for an environmental permit. The NCA as the construction client owns the burden of proof for whether or not the construction plan, mitigating measures and considerations in regard of environmental issues are satisfactory.

Due to a lack of factual knowledge in regards of some of the challenges NCA projects faces, permits and terms can to a large degree be based on what is considered overly precautionary measures. In recent years, this has in particular been the case for how shock waves from seabed-blasts affects fish, marine mammals and other wildlife. The disturbance from construction and blasts also influences the time of the year the NCA usually are permitted to work. A common term is that construction is not to be carried out in the period 15th of May - 20th of August. This corresponds to the spring – summer breeding season for birds and other wildlife. Spawning-season for various types of fish is largely

stretched between February to October. Based on local knowledge this will also be set as limitations. The NCA experiences that the safety zone set between a blast-site and a spawning area is very varying from permit to permit. This will also afflict the window given for the construction phase. Due to this the NCA now have an internal project aiming to obtain factual knowledge on the possible effects of sea floor blasting.

Another issue is plastic debris from charging tubes in the sea floor, the lack of alternatives to nonel initiation systems and the plastic waste from detonating cords. The NCA does not want to be a contributor to the already enormous plastic-waste issue in the world's oceans. Therefore, we continuously work on reducing waste from our activities.

Statement

By examples of actual projects the Norwegian Coastal Administration (NCA) aim to share experiences – and possible solutions on how to limit the negative environmental impacts in the execution phase in fairway projects. The NCA will present both what we have done well through pre-project planning and execution, when we could have performed better and ongoing internal projects on mitigating measures. Through this, we hope that others that faces similar challenges will be encouraged to contact the NCA for future collaboration and international experience exchange.