HOW CLEAR COMMUNICATIONS BENEFIT DREDGING PROJECTS

ABSTRACT

Without a doubt, dredging projects impact a wide variety of stakeholders. Yet, the public’s fundamental lack of knowledge about dredging and its interaction with the environment is not unusual. Scientific studies interfaces between dredging and the environment – plants, animals, hydro-dynamic processes and others – are abundant in the form of environmental impact assessments, pilot projects, trials and continuous surveys and investigations. Making this knowledge available to the public can spare a great deal of aggravation for clients, contractors and the community. According to stakeholders the right to participate in decision-making processes works to everyone’s benefit, preventing delays and improving outcomes. When one is involved with a project and feels ownership, one is less likely to object.

As dredging contractors and clients have become more aware of the public’s need for information, they have also realised that they, as the experts, must play a major role in providing this knowledge. With years of experience confronting an often sceptical public, the industry has sought systematic measures for communicating with them. Studies have shown that when these are applied, they result in transparency and consequently trust. What the projects described here share is that public opposition was a stumbling block and public participation became the solution. From these case studies some best practice guidelines are presented.

INTRODUCTION

Dredging contractors operate worldwide and therefore interact with almost any type of environment – salt marshes, mangroves, coral reefs, tropical rainforests, the arctic, rivers, the deep sea, shallow seas. In this variety of environments, responsible contractors aim to minimise or even prevent environmental impacts. This demands a thorough understanding of the complex web of ecosystem relations and the contractor’s role. Not an easy task. The major dredging contractors invest heavily in R&D and deliberately seek out collaboration with environmental scientists and even have marine biologists on staff. This has resulted in an increased understanding of dredging-induced impacts as well as innovative technologies to mitigate and compensate impacts.

To ensure smooth sailing for a dredging project is demanding. Since most people do not encounter dredging or maritime infrastructure projects very often, their experience with and knowledge of the process is limited. On the other hand, contractors do not necessarily know the specific body of water and surroundings to be dredged. How do contractors overcome the scepticism of the public? How can the dredging contractor and client learn from the public? How can trust be built between all parties?

One thing experience has taught us is that not listening is not the answer. Moreover, pretending that protestors will go away is a costly policy. Time and time again it has been demonstrated that facts, transparency and listening to the concerns of the affected population result in improved efficiency in implementing an infrastructure project.

Communicating upfront before the project is carved in stone takes longer in the beginning. And it is certainly neither easy nor cheap. But
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Dredging had been conducted over the past century, very little concrete information was available to the public. This clearly had to change.

Advances in technological communications like the Internet increased the speed with which information — true or false — was distributed. The announcement of the dredging project consequently resulted in a massive public reaction. Given that dredging by its nature is invisible, because most activities go on below the water’s surface, some scepticism and misunderstanding could have been predicted.

Real and perceived threats

To understand the opposition to the project one has to understand the real and perceived threats. The port deepening operations were located at the Entrance close to the Port Phillip Heads Marine National Park (Figure 2). The Park includes an underwater canyon ranging from 80 to 100m deep. Port Phillip Bay itself is characterised by clear water with high visibility. It is rich in many species of fish.
From June to October 2005, this trial was executed by the Queen of the Netherlands. Despite the collection of reliable data and approval by the Government protests continued. Public outcry eventually led to a Supreme Court challenge.

Turning the tide
What finally made a difference in swaying public opinion was the cooperation between the contractor and the client and stakeholders. Taking the public’s concerns seriously and addressing these concerns carefully was paramount. To communicate successfully with the public, the team of the PoMC and the contractor had to acknowledge the assets of the area as well as the perceived threats of the dredging operations. They had then to present means to remedy the threats and protect the assets.

According to an old adage, talk is not cheap, but the alternative is even more expensive. Ultimately, to achieve acceptance meant that more environmental assessments were required and that the PoMC and the contractor had to rethink their approach to communicating with the public.

In March 2007, the SEES was submitted for public review and subsequent governmental approval process, which included a six-week long panel enquiry. It was executed at a cost of US$80 million and represented over two years of peer-reviewed investigation. It comprised 15,000 pages of data and research and 40 new technical studies, which incorporated findings from the trial dredge. The most stringent environmental requirements were put in place. In addition, the cooperation of the dredging contractor was essential to engaging the community in discussions and in developing dedicated means of communications, as did the port’s willingness to inform the public at its weekly media conferences on project progress, project schedule and turbidity, airborne and underwater noise monitoring data. These weekly reports helped the public understand how some risks can indeed be mitigated.

Through reliable communications, a true dialogue developed. This made it possible to better educate the community and allay their fears about the Channel Deepening Project.
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Pursuing a proactive, multi-faceted media and community relations programme alongside a significant financial investment in robust scientific research was necessary to meet a rigorous project-approval regime. A fundamental belief from the port and the dredging contractor emerged that the public has the right to know and that environmental and social issues are equally as important as economic issues. The community’s concerns must also be the concerns of the contractor and client. What started as a confrontation ended as a positive learning experience for all parties (Figure 3).

THE BERLIN LANDWEHRKANAL: PUBLIC PARTICIPATION

In a recent paper presented at PIANC’s Smart Rivers Conference in Buenos Aires, Argentina (September 2015), “The Berlin Landwehrkanal: Public Participation in an Urban Area” by Andreas Dohms of the Wasser- und Schifffahrtsamt Lauenburg, Germany, described how public participation can result in public support of difficult infrastructure solutions. Unlike the previous case study in Melbourne where the project had long-term planning, in Berlin the need to act arose suddenly and urgently. Nonetheless, some of the same principles mentioned above applied. The Berlin Landwehrkanal (LWK) was built in the mid-19th century, planned by the well-known Prussian landscape architect, Peter J. Lenné, who designed other significant gardens and public parks in Berlin. Some 10km long, the Landwehrkanal links the upper Spree River in Berlin-Kreuzberg with its lower section in Charlottenburg. Bound by two locks and crossed by 37 bridges, the canal runs through a densely-populated inner-city with one and a half million people in the vicinity.

Originally used for freight transport, the canal is nowadays important for recreational navigation and passenger boats for tourism. The “Bridge Tours” are booked by more than one million passengers per year. Residents also enjoy the canal and its banks are bordered by green recreational areas that create flora and fauna biotopes, raising their ecological value. The canal is protected as a historical monument.

The collapse

In the spring of 2007, a few bank collapses along two stretches of the Landwehrkanal occurred. To prevent further damage, the
The groups worked as volunteers with the waterway administration specialists, examining the technical proposals and in some cases optimising them. This complex approach with full involvement of stakeholders ensured transparency both while developing solutions as well as while implementing them.

Asking the public to participate helped smooth the way to gaining public acceptance and support for the Berlin Landwehrkanal restoration. This example again proves that although interests may conflict and problems are complex – and even urgent – taking the time to invite public participation can expedite the project and help find solutions acceptable to all parties (Figure 5).

OTHER EXAMPLES OF PRO-ACTIVE CONTRACTOR COMMUNICATION

Not every project is large and not every project portends immediate disaster. Yet all projects impact nearby populations and

Federal Waterway Administration, represented by the Wasser- und Schifffahrtsamt (WSA) Berlin, which is responsible for operating and maintaining the Federal waterways in and around Berlin, secured the sites by locking them up, stabilising the collapsed banks and cutting some of the trees along the embankment. The intention of removing another 200 trees along the canal was announced. Protests against further tree removals, organised by newly founded action and environmental groups, arose immediately (Figure 4).

In the view of the WSA Berlin, the situation was urgent and further bank collapses along the entire length of the canal were an imminent danger. Consequently, the announced tree removals began in July 2007 – carried out under police protection. This is clearly not how one wishes to work. As public opposition increased, the tree removal became a political hot potato and more action groups were founded. Perhaps, ironically, the state and district authorities of Berlin and from all political parties supported the protest groups, leaving the WSA Berlin isolated.

“Future of Landwehrkanal”

A new format for negotiating between the WSA Berlin and the public about the canal’s renovation was as urgent as the need for tree removal. Other public concerns were also looming. Finding – and explaining – technical solutions acceptable to all sides had to be a priority. Eventually, the idea of a mediation procedure, named “Future of Landwehrkanal”, emerged. Although a wide variety of participants such as environmentalists, historians, small ship groups were involved in the mediation process, one issue overrode everything else – people wanted to participate in the project’s decision-making procedure. The conflict was not just about the WSA Berlin’s actions that had been carried out before the start of the mediation. The real problem was the exclusion of the public up to this moment.

Once again the events at Berlin’s Landwehrkanal proved that excluding the public from the decision-making process is not good policy. It denies the public the chance to learn what the problem is, make it their own, express their concerns and offer useful insights. The uniqueness of these citizen’s action groups in Berlin was their commitment to seeking solutions that would be acceptable in terms of ecology and technology, but also as regards to government budget restrictions.

Figure 4. Public protests were vocal. With mediation, public participation found consensus solutions. (Courtesy of Berlin Waterways and Shipping Office)

Figure 5. At Berlin’s landmark canal, Landwehrkanal, banks were collapsing. (Courtesy of Berlin Waterways and Shipping Office)
demand that the public be informed. Below are several examples of projects that have improved or will improve the quality of life of residents in the long-term, but were not necessarily self-evident to stakeholders from the start.

**Newbiggin Shoreline Restoration, UK**

After years of economic decline, Newbiggin-by-the-Sea, a town of 7,500 people in Northumberland, on the North Sea coast of England, was scheduled to undergo a revival. A large part of the beach had been washed away leaving the existing sea wall in danger of collapsing. After much deliberation, a major government investment was ready to fund beach replenishment, breakwater construction and a landscaped promenade. This project to restore the once famous beach and sea front back to and beyond its former glory, took place between March and October 2007.

Newbiggin-by-the-Sea had been a thriving mining town as well as a grain port. Over the last several decades these industries had faded, the coastline eroded, and the economic situation of the town worsened. Several government agencies including the Department for the Environment, Fisheries and Rural Affairs and the Wansbeck District Council spent years pushing for and conceiving a plan to breathe new life into the town. With the approval of the funding for the project the dredging works were to commence.

The £10 million project would involve recharging the beach with 500,000 tonnes of new sand; building a new breakwater in the bay to ensure tidal currents do not remove the new sand; improving the promenade, including a new set of feature steps in the centre of the bay; new playground; raised viewing platforms allowing visitors to see over the existing concrete sea defences; and the UK’s first permanent offshore sculpture.

The community, as is often the case, was not convinced. The sand for replenishing the beach had to be collected from far out at sea. Because of the shallow waters near the town, dredging vessels would have to anchor 1.5km off the coast to unload the dredged sand. And the rough coastal waters of the North Sea would probably threaten the sand replenishment or so it was thought by the local population. All these aspects caused concern amongst the residents...

Since dredging operations are often viewed with scepticism, the contractor made every effort to cooperate with the community, to provide information that made it clear to the residents what was being done and why. This included:

- Several dedicated websites were created with photographic and video information. They provided updates on the progress of all aspects of the project, with contributions from the people who live and work in the village. On one of the websites, the route of the TSHD Oranje, could be followed as she hauled sand for the beach replenishment. This was a 9-hour journey, which is quite long, as the sand was won from a licensed dredging area off the coast of Lincolnshire, near Skegness. The whole cycle, sailing back and forth and collecting the sand and delivering it, cost 22 hours, almost a full day. The website had more than a million hits with visitors as far away as Australia.

- A viewing platform was put in place to enable local residents to watch the dredging operations and breakwater construction as they came into view. This proved an exciting event, and many people came out to watch the Oranje at various times during the day and night.

- Deploying the TSHD Oranje with its capacity of 15,850m³ and loaded sailing speed of over 15 knots made the whole enterprise more cost-efficient. It enabled large quantities of sand to be transported efficiently over a long distance so that fewer trips were needed. The deployment of the Oranje also meant that dropping
anchor a long way offshore was not a problem, because the ship was able to pump the sand ashore through a 180m flexible floating pipeline and a 1,500m sinker line.

- The contractor also addressed the residents’ deep concerns about future erosion. A protective breakwater was created by laying 50,000 tonnes of rock on a geotextile mat on the seabed. The structure was provided with a protective layer of ‘Core-locs’ – interlocking concrete blocks which are able to absorb and dissipate more wave energy than a natural stone structure.

Now some eight years later, the town’s shoreline is a welcomed attraction for both residents and tourists, regaining its economic vitality. The importance of the public’s awareness of the project’s progress avoided conflicts and created instead new opportunities.

IJsselmeer Lake Friesland, the Netherlands

As a result of the Intergovernmental Panel on Climate Change (IPCC) reports on climate change, the Netherlands government commissioned a study into the question of whether the current national water and flood protection systems are sufficiently robust for the next 100 years (Delta Commission 2008). The study concluded that one must prepare for a maximum sea-level rise of 1.3m in the next century. It also found that as fresh water needs are expected to increase in the future, the reservoir function of the IJsselmeer Lake had to be reinforced. These conclusions were accepted by the Netherlands government as a sustainable, forward-looking strategy and it developed a plan to prevent flooding and improve the lake’s function as a reservoir.

The communities along the lake were far less happy. They saw the government plan as possibly destroying their livelihoods and the historical towns along the shores of the lake. Faced with these conflicts, the Building with Nature (BwN) programme was asked by the national government to initiate a pilot study along the Frisian coast. Representatives of BwN approached the Frisian governments to seek collaboration. The BwN programme is carried out by EcoShape, a consortium that includes myriad stakeholders such as dredging contractors, engineering consultants, government agencies, municipalities, applied research institutes, universities and academic research institutes.

The struggle for coastal protection in the Netherlands is a never a surprise and innovative methods and technologies are always a priority. Consequently, when a pilot project for sand nourishment was suggested for the IJsselmeer coast in the North of the Netherlands, this was for dredging contractors a continuation of a long history of battling the seas.

For the residents along the IJsselmeer coast, it was also a long story, but not a positive one. A formal protest letter was presented asking that the consortium be denied work permits. They had witnessed too many failed interventions – old sand shoals, failed nourishments and breakwaters claimed by the waves. Another failure would risk their livelihoods, as recreational boating, swimming and surfing could be destroyed. For the national government and the BwN researchers and engineers, doing nothing was not an option for the long-term. Facing staunch opposition, a public relations crisis was brewing and community participation was imperative.

Slowly it became apparent that regional parties were willing to talk but were diametrically opposed to the plans of the national government. Local communities saw the urgency to join in the policy and political deliberations about the lake, but their aim was to stop the project. The BwN representatives sought support among Frisian officials and local experts, but without a regional coalition of authorities and decision-makers in favour of the idea the regional authorities hesitated to become active advocates for the BwN plan. Unable to get support from local civil servants who were wary of a looming conflict with national authorities, the initiator of the BwN pilots reconsidered strategies and sought a coalition that would signal the need for change at a convincingly influential level. The deputy of the Province of Friesland, the chair of the Water Board and the director of an NGO were approached.

Together they decided to make a video of this group philosophising about the potential role of BwN and post it on YouTube. The video turned out to be an important motivating factor during encounters, showing that political superiors were in favour of the BwN experiment. This gave the project some legitimacy in the eyes of experts and policy makers – it gave BwN the opportunity to reach out to others in the community and to start a deliberation process with stakeholders.
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It is never easy to translate innovative ideas into policy. Most people are not thinking about the future and what can be achieved by innovation. They are thinking about the here and now. One lesson learnt in the case of “building with nature” was that solutions should be linked to existing problems already acknowledged by stakeholders, who may then consider connecting their resources to the new initiative. Furthermore, this process should start as soon as possible and be carried out on a continuous basis, as the sands so to speak are constantly shifting.

The development of regional plans often occurs on multiple scales of governance, hence the client and contractor have to act on multiple playing fields almost simultaneously. Local arenas and local decision-making are important but the threat of getting trapped in short-term interests and local political dealing is a real possibility. A combination of top-down and bottom-up communication is probably most effective, certainly in situations where innovative policies are trying to win acceptance.

METHODS FOR PUBLIC PARTICIPATION

No one size fits all, but a few basic guidelines do give impetus for further thought and action. In 2002, the US EPA (Environmental Protection Agency) was confronted with the difficult task of ‘selling’ the idea of cleaning up the Hudson River in New York State. The presence of PCBs from prior industrial activities led the government to a decision to name the river a SuperFund Site. It was determined that removing this toxicity was imperative. Opposition to this clean-up action was widespread, promoted by the company that was one of the major polluters of the river. This opposition went on for years. To communicate the urgency of removing the contaminated sediments, a neutral team of public participation professionals was contracted by the EPA. More than 144 Hudson River Valley community members were interviewed regarding how the public should be meaningfully involved in the design and implementation of the Hudson River PCBs dredging project.

Out of the many questions, concerns,
opinions and reactions expressed by this diverse group of individuals, a list of anticipated impacts from the dredging project, the public’s expectations for participation on the design and implementation of the project and opinions concerning past public involvement were identified. These viewpoints resulted in a report, Hudson River PCBs (2002), suggesting recommendations about further communications for pro-active public participation. A similar environmental clean up challenge occurred at a SuperFund site on the Passaic River in New Jersey (Figures 7a and 7b).

**LESSONS LEARNT FROM VARIOUS PROJECTS**

By reviewing the above projects, a series of basic “best practices” for public participation emerges for clients and contractors. These are applicable to a wide variety of dredging and maritime infrastructure projects. These are applicable to a wide variety of dredging and maritime infrastructure projects be they in ports along coastlines, in industrialised nations or emerging economies (Figure 8). Whilst this list may not be complete, here are 12 best practices for increasing public awareness and participation:

1. Engage with stakeholders as early as possible in the process by, for instance, creating a stakeholder advisory committee.
2. Recognise that public participation must be included in the decision-making process in order for the outcomes to be viewed as legitimate.
3. Be aware of the multiple scales of governance and consider a combination of top-down and bottom-up approaches.
4. Do not presume that the public has prior knowledge. Therefore, keep the process transparent – all aspects of decision-making for the project should be visible and understandable to all stakeholders.
5. Make the process meaningful – focus the attention on tasks and issues where public input can have significant influence on decisions. Give participants clear roles and responsibilities.
6. Acknowledge the public’s input so that stakeholders feel that their opinions are valued. A community information session, where a dialogue takes place, is preferable to a “public meeting” where only project proponents get to speak.
7. Support the public’s deliberations with regular, accurate and timely information.

Figure 8. Community projects are welcomed by the local population and have a positive effect on both the project execution as well as general living standards of those living along the river where dredging was taking place.
and provide regular feedback from the governing authority.
8. Respond ASAP to public feelings – positive and negative.
9. Recognise that stakeholders do have reasonable concerns.
10. Recognise that stakeholders do have information that can contribute to improvements in the dredging programme.
11. Be flexible in responding to changing conditions and situations.
12. The process of community participation carries a price-tag. Allocate moneys for this process if it is to be carried out in a useful way.

**SPECIFIC COMMUNICATIONS ACTIONS**

Depending on the situation, many communication tools are available:
- Stakeholders appreciate the opportunity to meet the experts including the dredging contractor and to ask questions. As mentioned above, meetings where a dialogue between experts and the community can take place is much better than meetings where only the experts speak.
- Regular presentations and briefings with community liaisons will help keep the public updated and can avoid unwanted surprises on both sides.
- Print and electronic newsletters can be used to keep various groups informed of the project’s developments.
- Programmes for schoolchildren, when viable, can be organised to teach the next generation more about the port, waterway and other related issues thus planting the seeds for future cooperation.
- Television / radio / print advertising campaigns and press releases cost time and money but are well worth the investment to help explain why a project is beneficial for the community and the economy.
- Establishing a dedicated website and toll-free telephone information line is a sign of transparency and cooperation.

All these measures contribute to keeping the lines of communication open between client, contractor and community. They can help avoid confrontations and lead instead to cooperation.

**CONCLUSIONS**

Inclusiveness when planning a maritime infrastructure project regardless of whether it is a major development or a smaller operation is a must. All stakeholders, including the public, have a right to transparency and to know what is happening in their neighbourhood. Economic considerations that lead ports to plan expansions or for waterfront protection or coastal replenishment as well as contaminated sediment remediation projects need to be explained from a social-environmental viewpoint as well.

When people are informed, they feel recognised. They feel ownership. And they then react differently. Rather than protesting, they can think along. Local residents may actually shed light on important issues that perhaps have been overlooked by project developers.

Utilising a system for public participation should be part of the project planning and should occur at the start of a proposed project and should be ongoing every step of the way. Funds for this research should be budgeted and the value of the public’s opinion must be recognised in all aspects of the infrastructure project.

The public has to trust that the authorities and the dredging contractor have a fundamental belief that the public has the right to know. To create this trust, the experts must accept that the process of creating awareness must be initiated by the contractor and client. However, given that dredgers are engineers and technicians – not public relations specialists – they may lack effective communication skills. To achieve a true exchange of information may require specialised training to improve these skills or employing outside agents that are versed in public policy and communications.

**REFERENCES**


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