

Installing shoreline protection under the new ABCA regime

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The water levels in Lake Huron (and the other Great Lakes) are at or near their all-time high levels. In my case – a lakeshore property at the north end of Cedarbank Road, about 6 kilometers north of Grand Bend – the high levels have caused very significant erosion during the summer and fall of 2019. Our original cottage was built in 1981, so we were here for the last period of high levels, around 1986. The erosion and impact on our beach and bank in 1986 was much less significant than what we have experienced this time (so far) – 2019 is much worse, even though the USACE monthly report suggests that the water levels are not *quite* as high now as they were in 1986. Judging by the impact at our place, as well as considering the height of the water against the north and South piers in Grand Bend village as compared to 1986, my own view is that the water levels are considerably higher at this point than they were then, perhaps 6 inches or so - even though as I said this is not what is shown in the USACE monthly report (<https://www.lre.usace.army.mil/Missions/Great-Lakes-Information/Great-Lakes-Water-Levels/Water-Level-Forecast/Monthly-Bulletin-of-Great-Lakes-Water-Levels/>).

Consequently, I and two of my cottage neighbours decided to band together and organize the installation of a seawall protection structure to span across our three properties. We discussed this initially with a contractor in the fall of 2018, prior to the implementation of ABCA's new "strategic plan" for shoreline management. We were working towards having him to the job during the winter period, when freeze-up on the lake makes it easier to do shoreline work with heavy equipment. However that contractor disappeared – he just left the area and never contacted any of us beforehand. In the meantime, a second local contractor did install a protection structure for my neighbour on my immediate north side, a structure of large granite stone blocks ("armorstone"). My two neighbours to the south, and I, discussed the possibility of doing the same – armorstone blocks – but another problem arose. The armorstone contractor lost his right to use an access roadway at the end of our cottage road, though a falling-out between him and the property owner who owns the access road. This would mean that he would have had to access the site using a barge, which would add substantially to the overall cost. Also, because of that, he himself was not at all keen to even take the job on. So we gave up on him and went to a third contractor.

The three of us elected to install a *steel* structure, as opposed to armorstone. Plus, by this point, ABCA had implemented its new strategic plan (<https://www.abca.ca/planning/shorelinemanagement/>), the main implication of which for us was that we would first have to have a study completed by a **coastal engineer**. A key purpose of the coastal engineering study would be to convince ABCA that our

installation of a shoreline protection structure would not negatively impact our immediate neighbors.

So I obtained a list of potential coastal engineers from ABCA. I contacted a number of them, to try to obtain at least a rough estimate as to how much such a study would cost. Not one of them actually came right out with an estimate, but we did obtain some very approximate costing figures from a couple of them, and decided on one to proceed with. Most of this effort was conducted by email, and, not surprisingly, took some weeks to complete. The coastal engineer we selected conducted a site visit one day in mid-May, during which he took some photographs, and gathered some local data. He then went away, and eventually wrote a 17-page report (nine pages of text, plus eight pages of drawings, charts, and photographs), much of which entailed a review of the local conditions, geology, etc. it took between three and four weeks to get the draft report, once he had done his site visit. The key thing for us was that his report did indeed state that if we were to install a steel shoreline protection structure, there would be no significant impact on our neighbors. It's important to note that until we actually received his draft report, we had no idea whether he would make that conclusion or not. The final bill we paid for the coastal engineering report was around \$4500 plus tax, split across three different properties – approximately \$1650 each.

One important thing to note: the coastal engineer requires an engineering drawing of the structure to be built and installed. This basically means that the property owners have to decide on your contractor first, then get the contractor to prepare an appropriate engineering drawing for the work to be done, and provide that drawing to the coastal engineer, before the coastal engineer can complete his report. (In our case, we didn't appreciate how critical this engineering drawing was from the point of view of ABCA, and we provided an incorrect drawing to the coastal engineer, a drawing that had been prepared by a previous potential contractor. The result of this error on our part was that ABCA rejected the initial version of the coastal engineering report, because it was prepared with respect to the wrong engineering drawing. We had to go back to the coastal engineer and have him adjust his original study in light of the somewhat different engineering drawing. Of course this took another week or two.)

While not required, I met personally with a couple of people at ABCA – Geoff Cade and Daniel King - to discuss the whole business face-to-face, in part so that I was confident I had not missed a step or misunderstood something about the process. While this did not really change anything that we did, I think it was a worthwhile thing to do.

Once we had the coastal engineering report, complete with the (correct) engineering drawing from the contractor, we could then submit an application for a permit to ABCA. Another little "gotcha" that we ran into at this point is that there needs to be a permit application from *each* property owner, each of which must include a copy of the coastal engineering report and the engineering drawing along with appropriate signatures. It is not sufficient to submit just one permit application for all three (or however many) properties, there needs to be one from each. Initially we submitted just a single

application with all our signatures on it, and it was only a couple of weeks after that when I phoned ABCA to inquire about status that they told me that they needed a permit request form from each of the property owners. (I was somewhat surprised that they did not contact me to let me know about the oversight, but there you go.)

ABCA will then take a couple of weeks at least to review the permit request, before issuing the permit itself (assuming they don't find anything wrong with the application). Furthermore, they do not issue a permit immediately. Rather they first issue a "draft" permit, which needs to be reviewed by each property owner. The draft permit has a cover page which needs to be signed off by both the property owner and the contractor, as well as two other pages that require the property owner's initials at the bottom. There will be one of these for each property owner. It's not enough to just do one for all three properties. Each one of these must have the property owner signature and the contractor signature on the cover page, as well as the property owner's initials on the next couple of pages, otherwise it won't be accepted. Once the signed copies of the draft permit are all returned to ABCA, a few days later they should issue the permit itself.

One other thing that ABCA may well also require is written confirmation concerning the way in which the contractor's heavy equipment will be able to access the building site. For example if there is a roadway that the contractor intends to use to move his equipment, as well as the construction materials (e.g., steel) down to the beach level, whoever owns that roadway must provide written permission to ABCA that the access owner agrees to allow the contractor access. This written permission note is also required before ABCA will issue the permit.

We began the process described above in the fall of 2018. This is the point we are at as of October 22, 2019. We understand the contractor has secured access rights, and he will be providing written confirmation of that to ABCA before he begins the installation work. Our assumption is that the work will be at least begun, if not be completed, before the end of 2019, and failing that, sometime during the coming winter months. (These contractors often prefer working during the winter, since the buildup of ice at the shoreline mitigates waves coming in and affecting their work.) I'll provide an update to this note once the work is underway.

Follow-up to the foregoing note... I received an emailed inquiry from another cottager, asking how our seawall project had gone and what was its status at this point (**July 7 2020**). My emailed reply (with the contractor name removed).

I'm very happy to respond to any of your questions about our seawall project. I'll briefly answer the one you raised below, but if you have any others don't hesitate to email me or telephone me if you prefer that approach.

First of all, my wife and I both commiserate with your situation. While we are not at lake level, we're up on top of a substantial bluff which is mostly dense clay, nonetheless the erosion at the base of the bluff was starting to work its way back, and in fact has completely denuded our bluff: all the vegetation - bushes, trees, etc. - has been washed away due to erosion, especially heavy erosion that took place over the last eight months or so.

We had hoped to have our steel wall installed by last fall, but unfortunately the contractor wasn't able to do it until late March this year. Over the winter months, the erosion ate away a considerable portion of our bank, and resulted in enough slippage that we now have no vegetation on the bank to speak of. Fortunately we haven't yet lost any significant property at the top of the bank, but we probably will experience some slippage at some point in the near future as a result of the erosion over the winter. (Instead of a gentle slope from the top, down to the water, we now have about a 12 foot nearly vertical drop before the slope becomes more gentle.)

The work we had done was the installation of a steel protection wall. The steel panels are something like 18 inches wide, and about 16-18 feet long, something like that. The contractor uses a very large excavator with a special kind of vibrating heavy metal plate on the end, to vibrate and force the panels down into the ground. It's actually quite fascinating to watch (I'm an engineer!). The panels are about two-thirds underground, with about 5 feet left above ground. Once the panels are in, a lot of welding takes place, horizontal beams are welded on, some steel rods called "tiebacks" are also installed to connect back into the bank, and when everything else is done the contractor backfills the space behind the wall, bring it up to the level of the top of the wall. No wooden beams are used in this kind of wall, just steel.

We've only had the completed wall in place since early April, so haven't had a lot of experience with heavy storms, but we have had a few, and it seems to hold up just fine. I'm pretty confident it will still be here in 40 or 50 years, although some maintenance might be required at some point.

The contractor we used was a fellow named ***** . And yes I would definitely recommend him. He lives in the area (south of Port Franks) and has been doing this kind of work for nearly 30 years. The trick with him is that his services are in big demand these days for obvious reasons, so you may have to wait some time, perhaps up to a year or so, before he could get at your project. On the other hand, these things don't

necessarily go in a completely linear fashion. For example if he had some other project he was going to undertake somewhere close to your place, he might very well be able to combine yours with the other one and thereby be able to do the work for you much more quickly.

And by the way, here on Cedarbank Road, we have a series of groynes that were installed somewhere around 1990, after the previous high water time in 1986. Those groynes are essentially the same construction as the seawall we have had installed - i.e. they consist of long steel panels pushed down side-by-side into the lake bed - only they stick out into the lake (they are perpendicular to the shoreline), rather than running parallel to the water's edge. They are made of the same steel panels and welded beams as is our new seawall. And they've been there for over 30 years, and are still holding up quite nicely, although some repair work was done on them about 15 years ago (by the same contractor who built our seawall!).

***** charged us \$650 per foot. We did inquire of some other potential contractors, and this price was within the broad range that the others also charge.

Good luck with your seawall project... Sid Huff