



Northern Ireland  
Assembly

Committee for Regional Development

# OFFICIAL REPORT (Hansard)

Strategic Drainage Infrastructure/Infraction  
Risk: Department for Regional Development  
Briefing

8 October 2014

# NORTHERN IRELAND ASSEMBLY

## Committee for Regional Development

### Strategic Drainage Infrastructure/Infraction Risk: Department for Regional Development Briefing

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**Members present for all or part of the proceedings:**

Mr Trevor Clarke (Chairperson)

Mr Seán Lynch (Deputy Chairperson)

Mr Joe Byrne

Mr John Dallat

Mr Alex Easton

Mr Ross Hussey

Mr Chris Lyttle

Mr Declan McAleer

Mr David McNarry

Mr Stephen Moutray

Mr Cathal Ó hOisín

**Witnesses:**

Mr Robert Crawford

Department for Regional Development

Ms Louise Green

Department for Regional Development

Mr Mark Stranaghan

Department for Regional Development

**The Chairperson (Mr Clarke):** I welcome Robert Crawford, Mark Stranaghan and Louise Green. We are running tight now, Robert. Are you leading off?

**Mr Robert Crawford (Department for Regional Development):** Yes, indeed, Chairman. I will be as quick as I can, and I hope there will be time for questions.

We are here to brief the Committee on the strategic infrastructure initiative, an interdepartmental initiative proposed by our Minister, the Minister for Regional Development. It was approved by the Executive in July, and the Committee has received a paper which explains the initiative. In view of time constraints, I will not repeat everything in the paper. I will try to give you a quick overview.

The key objective is to prepare a comprehensive plan for future strategic drainage infrastructure. That would be taken forward by an interdepartmental programme board which is in the process of being set up. On the board will be representatives of four Departments — DRD, which is responsible for water and roads; DFP; DOE, which is responsible for the environment; and the Department of Agriculture, which is responsible for rivers. We will also have representation on the board from Northern Ireland Water (NIW), the Strategic Investment Board (SIB) and Belfast City Council.

I would like to recap the key drivers for why this is necessary. On 17 September, Northern Ireland Water briefed the Committee on infrastructure and explained why it was becoming inadequate in

response to certain threats. Effectively, those threats include inadequate drainage infrastructure to support future economic growth and where further investment is necessary. One of the points that NI Water made in the briefing was that, on average, its level of investment in waste water infrastructure — sewers — would allow a sewer to be replaced every 1,200 years. Clearly, the lifespan of a sewer is considerably shorter than that. So that is an example of the investment level.

We also have a difficulty in relation to environmental protection, particularly in regard to the water quality in Belfast lough, where it appears likely that we are not going to meet the standard required of us by the water framework directive. We are required in the inner or central harbour area to reach a standard of "moderate" in 2015. The standard is currently "bad", and it does not look likely that we will be able to recover that position in the next year.

Let me say a little bit on the growth aspect of that. At the 17 September meeting, NI Water provided examples of waste water treatment plants that need to be upgraded, and there are 100 on its list at present. During the next six years, it will be able to deal with only 19 of them. Of the 100, 71 are in areas currently constrained in relation to growth or, in other words, in relation to the capacity of the waste water treatment works, which makes it an issue for NI Water whether to connect further properties or businesses to it. Only 13 of those 71 works will be upgraded or replaced during the next six years. So, over the next six years, NI Water's investment will effectively fall behind the needs of future investment in environmental protection.

I will not give you much detail on flooding, Chairman, because I think that everyone is familiar with the problems we have had in recent years. I will say only that, in relation to the overall cost that we anticipate being attached to the investment plan that we might produce, the current estimate is that it will cost an additional £750 million.

If you do not mind, Chairman, I would like to say very quickly how those problems arise. I will take the example of water falling here at Stormont; what happens to it, and how it creates the problems we are trying to address. If you have a light drizzle, or no rain at all, the system will operate normally. Water will fall on the roof, go into the private sewers in the Stormont estate, through a 300 metre culvert and into the Knock river or the combined sewers.

**The Chairperson (Mr Clarke):** You left a part out. It comes into the offices on the third floor first.  
*[Laughter.]*

**Mr Crawford:** So, it eventually flows through the Building, taking a little tourist detour, into the combined sewer and then runs into the Kinnegar treatment works. That is the normal situation; the way it is supposed to happen.

If you get heavy rain, like we had on Sunday night and Monday morning, then along that journey, at various points in the sewer network — and there are around 20 such points between here and Kinnegar — the water may overflow. It may spill out of the combined sewer network and into the Knock river and the Connswater, with the result that you damage the environment and ultimately damage the Belfast lough water quality. That happens far too often throughout the overall network around the greater Belfast area. The worst example is Belfast waste water treatment plant. On a normal, wet day, that is spilling out into a water course and then finding its way into the lough. The problem is that, effectively, it is not treated, so you are getting diluted sewage flowing in that direction.

In a severe storm situation, water cannot flow quickly enough into the water course, which could flood on itself. What happens then is that the pressure in the combined sewer network forces up manholes and you get diluted sewage running into people's homes and businesses. That is where serious difficulty arises with flooding: the flooding that is caused there is unpleasant because it is not just storm water, it is diluted sewage.

In considering a comprehensive plan for the greater Belfast area, we are looking for a variety of solutions. There is the traditional solution approach, which would be, for example, increasing capacity in waste water treatment works, bigger sewers and so on, and perhaps including storage.

The Assistant Assembly Clerk is passing out some photographs to members. Last week, we visited Llanelli, which has a very similar problem to Belfast with water quality in the marine environment. It does not have rivers or watercourses in the area to help with this, so the people there have been looking at a sustainable drainage solution. As I said, the comprehensive plan that we are trying to develop for the greater Belfast area would have a lot of traditional solution elements in it, but one of the things that we particularly want to consider is a more sustainable drainage solution.

I will not go through the pictures in detail, but, if you look at the second set of photographs, you will see a little primary school project. The water authority in Llanelli entered into an agreement with the primary school and paid for the resurfacing of a lot of its courtyard areas. The brown surface you see in the photographs is permeable: water drains through it. It then drains into the box; the plastic-crate in the top right picture. That is a geo-cellular solution to sustainable drainage.

There is a box underneath the surface, and there are layers of those boxes underneath the whole of the surface area that you see there. They are lightly filled with soil so that they slow the water draining through the ground. This means that the water is held in the ground, a bit like a sponge, and it trickles away. There is flow regulation on it, so it trickles into the combined sewers. Instead of pouring along the hard surface that existed there before, running into the combined sewer and flooding downhill, the water is held and released much more slowly into the system.

The key point of most sustainable drainage solutions is to slow down the water and get rid of some of it. If you notice the planting there and in some of the other slides, you will see that there are some planted areas with trees and shrubbery and so on. When water drains into an area that has trees and shrubbery above it, of course, the trees soak it up. Through evaporation from the tree leaves and through the use of the water to grow the trees and so on, Llanelli has been finding that a very significant volume of water is removed from their system.

Finally, if you look at the second last slide, this is what we would call a back-entry situation. It is simply a gully that takes the water down that back entry. One of the slides shows drainage under a roadway. You will see the same kind of situation. That roadway has geo-cellular cells underneath it. In this case, because there is traffic over it, the water will go in through the normal road gullies, but, instead of going into the sewer network, it goes into the geo-cellular cells and is then released back into the combined sewer system much more slowly.

Llanelli tells us that in relation to the Queen Mary's Walk area, which was in the slide you were just looking at, in four months that it has monitored this, 4,600 cubic litres of water has not gone into the sewers. That has just been removed through the trees and plants. The water has been held to allow the foliage to use it; it is water that never went into the system. In addition, in a one-in-five-year storm, Llanelli estimates that it would remove 125 litres per second from that area. That is 125 litres per second slowed down and not rushing down into the sewer network, with potential flooding or overflow. The primary school project removed 1,200 cubic litres in four months, and 53 litres per second was slowed down.

I have gone through that extremely quickly, Chairman. I emphasise that we hope that we are at the start of a planning project to put this in place. I have used Stormont as an example. There are other opportunities here as well. For example, if you have playing fields, you can put sustainable drainage underneath them. The best way of doing all of this is when you are doing infrastructure projects involving playing fields, roads or whatever, because that keeps the cost down. Sustainable drainage is estimated at 75% of the cost of traditional drainage at no greater operating cost. That is going to be a big part of the project that we want to take forward.

I will stop here to give you some time for questions. NI Water, at our request, has produced a summary of what I just went through very quickly. It is about four journeys of a Belfast rain drop in the Stormont area. We would be happy to forward that to you if you would find that interesting.

**The Chairperson (Mr Clarke):** Thank you for your presentation, Robert, and thank you for your cooperation in terms of speed. I am slightly frustrated that we are being presented with this as if it were a new concept. Sustainable drainage has been out there for a long time.

**Mr Crawford:** That is right.

**The Chairperson (Mr Clarke):** Your Department and other Departments have not worked collaboratively to enforce the situation where sustainable drainage is used. It is certainly not a new concept. Firms in Northern Ireland are involved in that industry, but, unfortunately, the Departments do not bang their heads together to make it a requirement in new developments, where we could mitigate problems in the future. We are coming late in the day to try to fix some of the stuff. That type of stuff frustrates me because it should have been coming as part of the development plan instead of coming to fix the problems. Many of us round this table have made suggestions about development

proposals in our own areas, but planners, in their wisdom, seem to know more than everyone else, and they put the pressure on the system. That is just a wee pet hate of mine.

The paperwork that you have provided to us states:

*"Infraction proceedings by the Commission might be avoided if there is evidence of a credible plan in place to resolve the problem and the European Commission can be satisfied that appropriate action is being taken."*

Would that require a firm indication of a budget in order to be deemed credible? The other part of it goes back to my first point: how would it be seen as credible given that some of the technology has already been there but NI plc has refused to use it?

**Mr Crawford:** I will deal with the question in relation to the infraction proceedings first. NI Water's experience has been that, where a plan is in place and the European Commission can see that action is being taken or is planned to be taken, the fines that come with infraction proceedings are not levied. There is an example of that from our experience in the north coast area, where a waste water treatment works is being put in place to deal with an infraction issue. Llanelli has just been put into infraction proceedings, notwithstanding the work it has already done and the plans it has, but it hopes to avoid the fines because of the fact that it moved ahead and started to do the work.

The Commission will judge based on what is practical and feasible. If we have a plan, the Commission will not expect implementation very quickly. The comprehensive plan that I spoke about would probably take about 10 years to implement in full, but you could make some modest progress quite early, which we think would be sufficient to show the Commission that we are serious about it. The fact that we are investing in it comprehensively is something that we think has resonance with the Commission. There is no certainty with that, but that is our hope.

The £750 million that I mentioned is not needed in one lump sum right away.

**The Chairperson (Mr Clarke):** That is good.

**Mr Crawford:** It is particularly good. We need a plan that says how we will spend that additional funding over, say, 10 years. Many of the projects that could be taken forward in advance would be relatively inexpensive.

You talked about your pet hate, and you asked why we are not doing it already and why the technology is not being used. Llanelli is the first example I am aware of where a sustainable urban drainage system (SuDS) retrofitting to roads has been done. I am not aware of any others. Engineering colleagues may well know of some, but this is an example of how you can spend £2.1 million on putting SuDS underneath the roads. The picture I have chosen shows long streets with terrace housing and we have plenty of those.

There are reasons why people have been cautious about it. There are also issues we need to settle in terms of long-term maintenance, which has been one of the issues that has caused authorities not to do it. Wales, being a mutual water authority, wants to do it to keep costs down. Private water utilities in England and Wales would not bother because they could spend the money and charge people for it.

**The Chairperson (Mr Clarke):** You are sort of straying off, Robert.

**Mr Crawford:** Sorry.

**The Chairperson (Mr Clarke):** In terms of the European Commission and infraction, Llanelli is further advanced than us and is getting an infraction. We are much further behind them.

**Mr Crawford:** We are.

**The Chairperson (Mr Clarke):** So, what is the possibility of us getting any leeway? If you could stick straight to that question as opposed to —

**Mr Crawford:** OK. First, the European Commission does not know yet, formally, the latest situation in relation to Belfast lough, because that report is due next year. There will be a series of meetings on

that issue next year. Although we have the results now and do not expect them to be better, we are talking about towards the end of next year, perhaps, when the Commission would have to consider whether to begin infraction proceedings.

We have a bit more time than Llanelli, which was facing this situation a couple of years ago and is now taking action. Infraction proceedings have only just begun, but fines will follow only if the Commission is unhappy at Llanelli's response to infraction proceedings. We probably have several years to act.

**The Chairperson (Mr Clarke):** You indicated a figure of £750 million. You are not wanting £750 million up front. How credible will the European Commission see that as being unless there is a firm commitment of money being set aside, or are you going to tell us that money has been set aside?

**Mr Crawford:** No, money has not been set aside for it. I need to make a couple of distinctions here. First, in the PC period 2015-2021, NI Water does not have money in its budget that will allow us to avoid the difficulty with Belfast lough or fix the problem. A big part of it will include some serious traditional investment. About £90 million will be needed to upgrade the Belfast waste water treatment plant. That is not in the budget for the next six years and could not be because of the level of the other things that NI Water has to do.

That is a big block of money on its own, but some things will be done. A little bit will be done on sustainable drainage, in particular looking at demonstrations and pilot projects. We need to get developers to see how this works as well and to work with us. We hoped that Stormont would be a demonstration project but have not managed to convince the Finance Minister of that just yet. We are looking for an area to start that work.

We need a plan to make sure that we use the investment properly. The more we can do to take water out of the system so that it never goes into the sewer in the first place —

**The Chairperson (Mr Clarke):** I think many of us understand that. Developers would not have a choice in using the system if it was a mandatory planning requirement. Conversations should be expanded between yourselves and the DOE to make it a mandatory requirement.

Developers are not going to put in a more expensive system when they are not required to do so. If it were mandatory, and this was not a request but a requirement in terms of an application, then we would not be *[Inaudible.]*

**Mr Crawford:** We have an opportunity to discuss this on 22 October when we are in front of the Committee again in relation to the Water Bill, because we plan to put in legislation that would make it a requirement that we could impose just such a requirement or at least a requirement that SuDS would be considered because it would not be feasible in every situation.

**The Chairperson (Mr Clarke):** NI Water is a standard consultee on all planning applications.

**Mr Crawford:** Not yet; it will not be a statutory consultee until RPA goes through. That is one of the problems that the RPA legislation will fix; it will make NI Water a statutory consultee.

**The Chairperson (Mr Clarke):** You are making it a suggestion rather than a requirement.

**Mr Dallat:** I am totally confused at this stage. As you know, we had Northern Ireland Water in front of us last week and there were no fears of infraction at all, but you turn up this week and talk about infraction. We are all conscious that we will leave a legacy to a future generation, but I do not want to go down in history as someone who sat as a nodding dog at a table listening to this stuff only for future generations to discover that they will be paying out millions of pounds for the neglect that we caused. Is there a more scientific way of establishing the risks of infraction?

**Mr Crawford:** When it comes to the risk of infraction, all we can point to is, for example, the extent to which the water quality in Belfast lough has fallen in recent years. The lough is divided into three sections: the outer harbour; the inner harbour, and the harbour area. It is in the harbour area, right where the outfalls are, that the problems occur. Those problems used to be described as "moderate" but they have fallen to "bad". We cannot see how this can improve in the one year that we have to convince the European Union that it should not bring infraction proceedings. That is probably the best way I can put it.

We know, for example, that the Belfast waste water treatment works spilled one million cubic metres — that is the overflow spilling — last year, when, in fact, the original design capacity was 200,000 cubic metres. We know that we are doing things that we should not be doing or that we would prefer not to be doing. There is no improvement that we can foresee that will avoid infraction proceedings. Those, effectively, are automatic if the Commission finds that you did not meet the compliance standard.

**Mr Dallat:** That is very useful, but the Committee as a whole needs to listen very carefully to what Robert is saying. Maybe at some future time we could have a serious discussion about the risks of infraction. You and I know, and last week we were told, that Northern Ireland Water put plans back for six years but that it would not make much difference. I am sure that someone in the Commission will look at this overall and say that we are not seriously investing in clearing up the mess that a previous generation created.

**Mr McNarry:** I have a couple of questions. I want to follow up on the Llanelli situation. If their efforts — and they seem to have been pretty positive — are not acceptable to the EU, will our escape route against infraction be superior to theirs? In other words, what standards are you trying to meet to get up there?

**Mr Crawford:** The standards are the water quality standards. The Commission will understand that it will take quite some years, even if we had remedial measures in place now, before we could improve the situation. Northern Ireland Water is always very good on that, because all around the coastline we have excellent compliance standards; it is just this one area that is the problem.

**Mr McNarry:** We know now that these standards have not been good enough, so I take it that we are going to say, "That is not good enough and we have to go up here".

**Mr Crawford:** What Llanelli is doing today may well be good enough, if it does enough of it. It was what it was doing a couple of years ago that caused the problem in the harbour there that was not good enough. The town had exactly the same problem we have, where it was spilling far too often. Effectively, it had dilute sewage going into the harbour area, where there are shellfish beds just as we have.

**Mr McNarry:** I want to ask about SuDS. Some developers are already putting SuDS in and they do so primarily to obtain planning permission rather than for any other reason. What would happen if SuDS became the subject of a directive? You may not have the answer to that but, perhaps in time for the next meeting, would you be able to supply the Committee with information about what the extra costs are likely to be for a house owner where SuDS has been incorporated into a house? That will be a factor that the developers will talk about.

**Mr Crawford:** We would be happy to say something about that in the meeting on 22 October, because it is relevant to the legislation proposals we are bringing forward. How to do ongoing maintenance is one of the issues. Without going into too much detail, Llanelli, at that time, seemed to have some solutions to that which I had not been aware of before.

**The Chairperson (Mr Clarke):** There is another side of this as well. David made the point that the homeowner is responsible for that, but if they do not do it, the homeowner is also the one who pays for the infraction.

**Mr Lynch:** You mentioned that the roof restoration here provided an opportunity but that the Finance Minister had not bought into it. What ideas did you have? Did he reject it because of the cost?

**Mr Crawford:** Our Minister wrote to him a few months ago. We simply saw Stormont as an opportunity to demonstrate some of the SuDS ideas. There are some opportunities here; for example, some of the playing fields are going to be re-laid and so on. Anything that we can save reduces the risk of flooding downstream. To be fair to the Finance Minister, he was aware that considerable money had gone into flood defences in the Stormont estate; and, perhaps, we had not explained what we were hoping to do in detail. It was a preliminary letter simply inviting him to engage in discussion on the point. We have not gone back yet; it is possible that our Minister will decide to do that.

The point about flood defence investment, sadly, is that while that would protect the government buildings, it just moves the water down into the sewer more quickly and increases the risk of pressure on the system further down. We were happy to do that, but we felt that there was more that could be done. We are looking for another area to demonstrate some of these ideas, and NI Water has installed a couple in various places, but we really want to find an area in which we can do a number of different things to see what works best.

**Mr Lynch:** Just on that point, it would be more beneficial if there was a cross-departmental approach to this issue.

**Mr Crawford:** That is exactly what today's briefing is really about, although I have strayed a bit from where I started. The interdepartmental programme board involves DARD, through Rivers Agency, DOE, DRD and DFP. The idea is that, out of this, we will have a plan that involves all those interests and responsibilities.

**Mr Lyttle:** Thanks for your presentation. There are two major problems or challenges; flooding and water quality. NI Water's business plan says that we need £750 million in investment to respond to those two challenges. You have said that this will take time; what period is that investment over?

**Mr Crawford:** There is a third challenge that I do not want us to forget. If we have a system that is operating at or close to capacity, we cannot connect new businesses to it, so there is an economic growth challenge as well. We will not know the investment timescale until we produce a plan. Some of this could get off the ground fairly quickly if we come up with the answers that say that this is something we have to do anyway. Indeed, some of the investment in the six years might well be useful for this. If you are looking at completing it, you are probably looking at an investment timescale of 10 to 12 years. We believe that you need a longer investment horizon for this kind of infrastructure anyway.

**Mr Lyttle:** How do think that is going to be financed?

**Mr Crawford:** I have not given any thought to the financing at this stage. The proposal is to develop the plan and put together an interdepartmental approach. Financing could only be addressed once we have a clearer understanding of what would be involved in that programme of work.

**Mr Lyttle:** OK. Do you have a timescale for the completion of the plan?

**Mr Crawford:** If we are talking about completing the plan in its entirety, we are probably looking at around three years. Within that, we will have emerging conclusions. There are some things about which we will be able to say that whatever we do, we are going to need, for example, an upgrade of the Belfast waste water treatment works. It may be that individual projects can be hived off and taken forward more quickly than that.

**Mr Lyttle:** If I understood you right, it is going to be impossible to avoid breaching those EU directives.

**Mr Crawford:** It will be very difficult to avoid the commencement of infraction proceedings on the water framework directive. NI Water is currently complying with the urban waste water treatment directive, which measures the quality coming out of the waste water treatment works. The problem with the water framework directive, which measures water quality in Belfast lough, is where water takes a detour and goes into the water course and then into the lough.

**Mr Lyttle:** At what point would those proceedings lead to fines?

**Mr Crawford:** It is hard to say. It depends how much the Commission is content with what we are proposing to do. It can move to the European Court to get fines levied at any point in time. Our expectation, from experience in the north coast at Ballycastle, is that provided we are making progress the Commission would not rush to the European Court to seek fines. There is no expectation in Llanelli of any fines. However, Whitburn, in England, is being fined heavily for having, effectively, done nothing until it was too late. The risk is a real risk.

**Mr Lyttle:** So, you are operating at risk until that significant plan is in place, which will require significant investment either way.



**Mr Crawford:** Happily, the significant investment can happen over time. It does not need a massive and quick injection.

**The Chairperson (Mr Clarke):** Members are content to leave it at that. You will be here again on 22 October.

**Mr Crawford:** We will back on 22 October to discuss the Water Bill.

**The Chairperson (Mr Clarke):** OK, thank you.