Northern Ireland Assembly

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COMMITTEE FOR FINANCE AND PERSONNEL

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OFFICIAL REPORT (Hansard)

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Geographic Information Strategy for Northern Ireland

26 October 2011

NORTHERN IRELAND ASSEMBLY
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FINANCE AND PERSONNEL

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Geographic Information Strategy for Northern Ireland
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Members present for all or part of the proceedings:
Mr Conor Murphy (Chairperson)
Mr Dominic Bradley (Deputy Chairperson)
Mr Leslie Cree
Mr David Hilditch
Mr William Humphrey
Mr Ross Hussey
Mr Mitchel McLaughlin
Mr Paul Maskey

Witnesses:
Mr Alan Brontë   )   Land and Property Services
Mr Trevor Steenson   )

The Chairperson:

With us today are Alan Brontë, the commissioner of valuation in Land and Property Services (LPS), and Trevor Steenson, its chief survey officer.

I invite you to make some opening comments, after which the Committee will ask some questions. The purpose of the evidence session is for you to assist us in deciding whether the geographic information strategy is an area that the Committee should hold an inquiry into or whether we are content with the information that you have provided to date.

Mr Alan Brontë (Land and Property Services):

Good morning. As the Chairman said, I am the commissioner of valuation in LPS. You are probably more familiar with my work in that role, but I actually have responsibility for mapping and valuation in LPS. Hopefully, some of the rationale behind my responsibility crossing both disciplines will become clear later.

Trevor and I welcome the opportunity to appear before the Committee. I am very glad to have him with me. As the Chairman said, Trevor is the chief survey officer for Northern Ireland. His total career so far has been in what is more commonly known as Ordnance Survey, and I am sure that he will be able to explain fully the issues to do with geographic information, or GI, as we will refer to it.

We have brought some packs for Committee members. They contain what I hope is useful reference material, whether or not the Committee decides to proceed with it as a subject of an inquiry. I will give you the brief overview that you asked for, and I hope that you found our advance paper helpful.

The Chairperson:

For members' information, that paper is in members' packs.

Mr Brontë:

It is estimated that some 80% of government-held data contains information that relates to location. That geospatial information is essential to economic planning and development. However, in our view, too few government-owned data sets that incorporate location data can be easily combined and analysed with reliability. There is too much duplication, too little reusing of information and too few linkages across databases.

The GI strategy for Northern Ireland aims to address those issues by improving the sharing of geographic information to facilitate more effective decision-making. It is also about educating and improving everyone's understanding of the power of geographic information and promoting its benefits; about controlling the costs of data management by co-ordinating the creation and maintenance of data sets, and, hopefully, eliminating duplication in existing data sets; about increasing skill levels so that all who need to use geographic information knows what they need to know to work with it effectively; and about conforming with emerging national and European

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legislative requirements that relate to geographic information. No doubt we will touch on that last point at some stage.

The current GI strategy builds on previous Northern Ireland GI strategies, which dealt with issues such as technology, the conversion of paper records, common reference data, orthophotography and addresses. Previous strategies also dealt with the cost of data, which is something that is now dealt with in the public sector through the Northern Ireland mapping agreement.

Ordnance Survey of Northern Ireland (OSNI) played a lead role in taking forward the GI strategy, as mapping data provides a framework, or tapestry, for all other spatial data in Northern Ireland. As the Committee will know, that role now lies with Land and Property Services, following the merger of Ordnance Survey, the Valuation and Lands Agency (VLA), the Rate Collection Agency (RCA) and the Land Registers of Northern Ireland (LRNI).

We will highlight a few of the benefits, and we have provided examples of those benefits in the pack. Some of the benefits lie in having better informed decision-making and in having a good way of explaining those decisions to the public. Many of the examples in the pack are about the review of jobs and benefits offices, school estate planning, and so on. There are also cost-saving benefits, going on the basis of collecting data once and using it many times. There are also examples of operational delivery benefits — how best to deliver services in Northern Ireland — from mapping the habitat of salmon to delivering blue-light services. Indeed, the 2011 census was very important because it used the Pointer database, which is name- and location-based.

The public sector is a huge source of information, and Europe has estimated that its market value is about €27 billion. If it were to be reused, that public data could generate new businesses and jobs.

Finally, I want to give a personal example of how GI has enhanced and improved the efficiency and effectiveness of valuation services, which is the area with which I am most familiar. The 2007 domestic revaluation in Northern Ireland was unique in the UK and much wider afield in its use, for the first time, of a computer-assisted mass appraisal (CAMA) system. That was made possible by geographic information. Our everyday rating business is also greatly

enhanced by the availability of online mapping, aerial photography, geospatial unique identifiers for every property, which tie properties to a precise location, and Pointer, Northern Ireland's single-address database that links place names to actual locations.

All of that GI has helped improve the valuation business. It has made it more effective and efficient. We still have plenty of room for improvement, but, in our business — LPS — and wider afield, GI is great enabler. That is why we were very excited about the opportunity to tell the Committee a little bit more.

The Chairperson:
Thank you very much. Is the information that you provide on a demand-led basis from the Department? Is it a matter for the Department to decide whether it wants to use your services, or is there any onus on the Department to deploy your services in decision-making?

Mr Brontë:
There is no onus, but we have a Northern Ireland mapping agreement, which covers the public sector. It certainly covers the core Departments and their constituent bodies. There is an agreement there on the type of services that they want or need. Different services will require different products. Perhaps Trevor can give more detail on that.

Mr Trevor Steenson (Land and Property Services):
We are seeing a lot of use being made of the data for operational purposes, but probably less so for strategic planning purposes. The use of the data for strategic planning is increasing, and we are working very closely with colleagues in the Northern Ireland Statistics and Research Agency (NISRA) to support its statisticians.

The Chairperson:
We have a very dispersed rural population and some urban centres. Services, particularly if the ideas have been imported from Britain, tend to concentrate on numbers and on providing services where people live. The work that you do is obviously very important, because you can highlight how a decision affects services in rural or less-populated areas.

That is one of the areas that prompted the Committee to consider holding an inquiry. You have been marketing your services to other Departments, with increasing success, and using

geographic information to influence their decision-making. What role do you see a Committee inquiry having?

Mr Steenson:

We have a unique opportunity in Northern Ireland. Owing to its size, we can get Departments and decision-makers together. GB has struggled for a long time to try to co-ordinate the use of geographic information, whereas, in Northern Ireland, because of the size of the place and the structure that we have, it is much easier to do so. We have seen the savings that have been delivered through shared services throughout the Northern Ireland Civil Service (NICS). We are now talking about shared data, which is really the next step. The more that we can share data, the more that we can reuse and combine data. That will support and strengthen decision-making across the NICS, and it will support our Ministers.

Mr McLaughlin:

I was on a visit to your offices, and you and your colleagues gave me a quick briefing on geographic information. I find it a very exciting project.

I have a number of questions. Do you charge for the data service that is available to Departments?

Mr Steenson:

To separate the two sides, there is the data that Ordnance Survey creates, and there is support in the use of that data. The use of the data is somewhat funded by the licensing people. Departments pay for it, but we also have a number of staff embedded in Departments. Indeed, a member of staff is embedded in the Assembly's Research and Information Service (RaISe).

That is done in response to some of the skills issues, because the use of GI for strategic purposes takes a little bit of knowledge of the systems and of the data. There is no GI profession at the moment, so people who are doing GI work sometimes get promotion or move on, which leaves Departments very vulnerable. LPS has decided to have a pool of staff trained to support Departments. That is charged for, and so Departments pay their wages.

Mr McLaughlin:

One topical issue is flooding. We know that the Department of Agriculture and Rural

Development (DARD) has done a mapping exercise on the floodplains. I suppose there are two factors: the effect of climate change and how the built environment affects the propensity for flooding to occur. Is there a project addressing that particular aspect? We are talking about strategic planning, and we were talking about the Planning Service. It appears that the combination of the two is creating some of the difficulties for householders at the moment.

Mr Steenson:

One example in the information pack is the creation of flood-risk maps. Our data, along with other information, has been instrumental in that. The proposal that we are putting to the Committee is that that data on its own is useful, but it becomes much more useful if information such as planning and the location of schools and rescue services is combined. If that is done, people can be housed in the event of a flood.

That is one area that we want to emphasise. There are a lot of data sets out there, and by combining them through working together and using geographic information, much greater benefits can be achieved than would be the case were data sets used on their own.

Mr McLaughlin:

The point that I am getting at is whether there is anything that we can do about this almost annual event that is affecting different parts of the North? Can we do more than provide emergency flood protocols, for example? Does the system that is being developed and the data that has been collected allow planners to come to the conclusion that they should call a stop to development in particular areas because they have reached breaking point, where, if there is heavy rain, there will be occurrences of flooding?

Mr Steenson:

Interestingly, if you look back at the early Ordnance Survey records from the turn of the 20th century, you will often find that someone has indicated that parts of the land are liable to flood. Unfortunately, that kind of local knowledge and information has been lost in the many map updates. Some of the data that we provide is terrain modeling. That has been supplemented by some of the Departments doing more precise terrain modelling using a technique called LIDAR — light detection and ranging — which gives a very accurate surface model. That is being used now to model areas at risk. The insurance industry is very keen on using geographic information for insurance purposes in that type of area, so, over the past couple of years, an awful lot of

research has been done because of the flooding. Our role is to capture the data and make sure that it is available.

Mr McLaughlin:

You seem to be saying that the information could be of use in, say, planning decisions on further or additional development. That begs the question, which might come up if we have an inquiry, of whether the planners are actually using and accessing that information to inform their decisions.

Mr Steenson:

Operationally they are, although I am not sure of the extent to which they are using it strategically. LPS/Ordnance Survey mapping is embedded in the planning process. Indeed, the Planning Service's ePIC system — electronic planning information for citizens system — is based on —

Mr McLaughlin:

That was not without its problems.

Mr Steenson:

Not to do with the mapping, I hasten to add.

However, it is the combination. Planners can use the mapping, but to develop a GI structure in Northern Ireland, we need to know what other data is available from Departments. That information is sometimes buried in Departments, so it is hard to find out whether the Department has it. We then end up collecting it again, or paying someone else to collect it.

Mr McLaughlin:

OK. Thank you very much.

Mr Hilditch:

To what extent do you work with private sector companies, particularly those that are looking for energy underground? In my constituency, there is salt-mining. I know that that may apply to other constituencies as well. Is there much work going on in that regard?

Mr Steenson:

Not as much as we would like to see in Northern Ireland. Most of our work is in the public sector. We are just starting to engage with insurance companies. The salt-mining people work very closely with our Geological Survey of Northern Ireland (GSNI) colleagues, with whom we share a building. The mapping information that they produce is based on LPS mapping, although, obviously, they include geological layers. We do a lot of work with the ports and harbours, and a couple of examples are included in the pack.

Mr Brontë:

We have licence agreements with a lot of companies. For example, we gather satnav information in Northern Ireland, which is then licensed to other people.

Mr Steenson:

At present, we license between £2 million and £3 million worth of data to the private sector.

Mr Hussey:

I will go back to Mitchel's point. When is a civil servant not a civil servant, we sometimes ask, but when is a floodplain not a floodplain? Some statistics are based on the 100-year plan, which says that flooding occur only once every 100 years. Yesterday and the day before, a housing estate in Beragh in my constituency was flooded for the umpteenth time in a number of years. You must gather historical evidence that makes you aware of the location of floodplains.

Another example is in Omagh, where the Tyrone and Fermanagh Hospital, which provides for people with mental health issues, decided to build what it called "villas" on a certain part of the hospital grounds. Patients said that the hospital should not build there because it is on a floodplain, but, of course, the authorities knew better and built on it. Yesterday, yet again, the patients were evacuated from the area. Local knowledge is there, but at times it is being disregarded. The Beragh area is always affected, but it does not seem to have appeared on the radar. Everyone knows what happens, but, for some reason, it has not been picked up on. This is a wonderful system, if and when it works.

Mr Steenson:

Exactly, yes.

Mr Hussey:

I live in the wilds of Tyrone. In my part of the world, people know where they live by the name of the road — Gillygooley Road, for example — or the townlands. Everyone in the area knows where Gillygooley is. You would not have a clue, but everyone there knows where it is. Therefore, geographic information has to include that element as well. We are discussing strategic planning, but distances to hospitals is another major issue in my part of the world. Although it may be 28 miles from Omagh to Enniskillen and 34 miles from Omagh to Londonderry, it is a hell of a journey when the road is rubbish. Is all that taken into account?

Mr Steenson:

It is. We have moved forward in recognising that. A lot of planning used to be straight-line planning, because there was no road network, nor was the software available to make those calculations. With the advent of in-car navigation systems technology, geographic information systems (GIS) can do proper planning and road links, and they can take account of rivers that people cannot cross. We saw that information being used in the most recent census, as Alan mentioned. In the past, census enumerators simply drew a line or a circle on a map to denote a district. That might have meant crossing a motorway or driving around a river. The technology allows us to take in much more of that type of information.

I must stress that we do not collect an awful lot of that information. It t exists somewhere in the Civil Service, so it is about bringing that information together. That is the point that we are trying to make.

Mr Hussey:

My concern is that there is an overdependence on that type of information. It may have made sense to somebody to put a hospital in Enniskillen, and it does if there is a road that gets you there. However, when there is flooding and the A32 is closed, and you cannot get an ambulance across it unless you have a boat, the information is important. The same goes when building houses. The area is continually changing, whether because of global warming or changes in the river patterns, so the information has to be continuously updated. It is something that planners have to be aware of. We cannot have another scenario in which people put their hard-earned cash into a house, and, because it was one or two blocks too short going up, the water comes into the house. All those things are very much in our face and still happening today. Indeed, that has been quite clear in the past few days in my constituency.

Mr Brontë:

To reinforce the point that Trevor made, we do not see ourselves as the collector of information on everything that happens in Northern Ireland. I said at the start of the evidence session that around 80% of government-held data has a location element to it. However, it is about ensuring that all the information held by the various bodies is linked to location so that when someone wants to do something at a particular location — whatever that may be — other data sets can be plugged into it. It is really a hub scenario.

Mr Hussey:

I would prefer it if all the information were available. I worked for an insurance company, and if it knew that something was a risk, it would not pay out. For example, if, unlike the wise man who built his house on the rock, you built yours on the sand, you were snookered, and the insurance company had the information to back its position. However, we also want information to back the person who is building a house, so that he is not caught on the heels of the hunt simply because he assumed that everything was OK because everyone said that it was OK.

Mr Steenson:

That is our difficulty. We know that that information exists in different pockets. Our proposal is to do some work to bring that information together.

Mr Hussey:

Let us open the pockets.

Mr Steenson:

Exactly.

Mr McLaughlin:

We are discussing the GI strategy. However, is there a strategy or is it just an aspiration?

Mr Steenson:

There is a strategy, and there is an update on it in your pack.

Mr McLaughlin:

Is it a strategy, however? Are all Departments obliged to share the information? If not, we are only waffling.

Mr Steenson:

They are certainly not obliged to. In some countries, it is mandated, and it is called a spatial data infrastructure — or SDI, to use another three-letter initialism — instead of GI.

Mr McLaughlin:

Therefore, in some countries, it is required.

Mr Steenson:

Yes. When creating data in the American Administration, it has to be put through a clearing house and a record made of it so that it is available to everyone else. I am not sure that we necessarily have the capability to do that in Northern Ireland without legislation. However, that is what the GI strategy intends to do.

Mr McLaughlin:

You know the old saying in Northern Ireland: whatever you say, say nothing.

Mr Steenson:

In the briefing paper, we refer to the EU's INSPIRE directive — the infrastructure for spatial information in Europe — which requires every public authority to make its data available, for it to be collected in a particular way and for it to be described through Metadata. Again, LPS is co-ordinating that. Therefore, that is legislation, and there could be infraction if Departments do not make the data available.

Mr D Bradley:

I was looking at two of your case studies, which are delivering blue-light services and GIS as a core component of emergency planning. The Chairperson will be aware of the recent situation in Newry where, sadly, a person went missing and was later found dead. The search operation was co-ordinated by the police and local people. There was an earlier incident in County Antrim where a lady went missing, and a search operation was also launched. You would be in an ideal position to put together a module that could be used immediately in those circumstances and that

could co-ordinate sightings of the person, the location of the search teams, feedback from search teams, the weather conditions, potential risks and hazards in the terrain being searched, the person's usual route and, as Ross said, local information. It would make it easier for the police, the other blue-light services and local people to handle such situations. What would it take for you to consider developing the module of that type?

Mr Steenson:

We have been doing some work on that. A civilian search agency has been set up. I apologise, I cannot remember its title. You may remember that it had a van burnt out about a year ago.

Mr D Bradley:

Yes, I remember that.

Mr Steenson:

We provide that agency with our total range of mappings, so it has full access and is using that in a search and rescue module in its mobile headquarters unit.

Mr Brontë:

We work closely with the Northern Ireland Fire and Rescue Service, which has a comprehensive range of mapping data that we provide, and it is important that, like all data, it is kept up to date. So, in the event of a critical or a large-scale emergency, staff in Fire and Rescue Service headquarters have access to online mapping.

Mr Steenson:

We also work closely with Belfast City Council, which has a control centre for emergency services that also has full access to our mapping. That includes one of the more interesting and useful data sets, orthophotography, which involves aerial photography of Northern Ireland. We worked closely with the Department of Agriculture and Rural Development in its mapping programme to upgrade that aerial photography. Again, that is useful for flood response and other responses.

Mr P Maskey:

Is your service sustainable in the long term? I take out my phone, which is switched off, although Mitchel's is not — *[Laughter.]*

Mr Steenson:

We could not possibly comment on that.

Mr P Maskey:

My phone has GPS, Google maps, satnav and all. I hit a search button and can pull up information that I have seen in some of the documentation. I ask whether the project is sustainable in the long-term because all that modern technology is out there now and more is becoming available every year. It would cause me concern if Departments are not mandated to give you the information, because I imagine that it would diminish your role if I can punch a button on my phone and get some of that information.

Mr Steenson:

Some of that information originates with us and we license it to them. The difference between the information on the phone or the satnav is that it does not include some of the other work that needs to be done, such as land registration and the defining of the DARD field boundaries. It is just not accurate enough. For example, the Land Registry is used in the legal process, so it needs the backing of what was Ordnance Survey and is now LPS mapping because that has more of a legal basis.

Mr Brontë:

We would say that we can provide that service to all the public sector in Northern Ireland. We would not want one Department to go off and engage with Google and for someone else do the same with other providers. That would be an inefficient way to do business. We overfly Northern Ireland. We have a camera that is top of the range in being able to pick up the information that enables the mapping of field boundaries for DARD.

Mr McLaughlin:

How often do you is it updated? Is it three yearly or something like that?

Mr Steenson:

The new digital camera that we put in will involve a two-year refresh cycle. Previously, it was normally three to five years.

Mr Brontë:

The weather is the biggest issue. If we could improve that, we could fly more often and make the maps more up to date. Whether for the blue-light services or whatever, it is important that the data is kept up to date. It is of no or limited use if it is out of date. In an emergency situation, it is absolutely important that the information is the most up to date possible, because a new building or a new road could be there. A failure to show such changes is disorientating for the map users.

The Chairperson:

In doing a case study of provision or potential use of service, particularly in the border areas, do you confine that study to within the boundaries? Do you analyse what service may be available on the southern side of the border or what size of population may be devoid of such a service and may use it in the North?

Mr Steenson:

All the studies include the border regions. We have worked very closely with and been engaged in some of the cross-border EU-funded initiatives in the use of geographic information. Next month, I am speaking at a conference in Omeath on cross-border information. We have a land border, and that is very important for INSPIRE. Roads and floodplains do not stop at borders. We work very closely with our colleagues in Ordnance Survey Ireland in creating cross-border data sets. Cuilcagh Mountain is another example of where we did some work. As a result of flooding of Marble Arch Caves, we worked closely with colleagues to ensure it was a cross-border data set.

Mr Hussey:

You mentioned DARD and the mapping of farms. That has caused some consternation among farmers. Has that been improved?

Mr Steenson:

It is being improved. As you can appreciate, about 750,000 fields are registered to DARD. We are using the new photography to improve the mapping. We are working very closely with DARD. We will issue farm maps at the start of 2012, which will be based on improved mapping. It will take probably another sight to fully align those boundaries because we will need feedback from farmers.

Mr Hussey:

What sort of feedback are you getting at the minute? There have been quite a few instances of people saying, "That's not mine" or "Why has he got mine?". How many complaints have you had about what you have already provided?

Mr Steenson:

The improved mapping has not been issued yet. Maps for 200 farm areas will be issued before Christmas, so we will very quickly get the feedback. We are also issuing orthophotography, so farmers will see the boundaries, what they relate to on the ground and will, hopefully, recognise that any change has been aligned to a physical feature.

Mr McLaughlin:

Is orthophotography a more detailed and accurate process that will ensure that the Registry of Deeds is rationalised?

Mr Steenson:

Yes; part of the work that we are doing with the Department of Agriculture and Rural Development involves bringing the mapping up to modern standards. GPS was mentioned, and much of the mapping was captured prior to that type of technology being available. LPS has a work programme called positional improvement that helps to make it compatible with accurate GPS; that is not necessarily the sort that people have on their phones. You can now achieve accuracy of 2 cm to 3 cm. We are bringing our mapping up to date with that. There will then need to be a programme for Land Registry, which in now within LPS, to realign the boundaries, some of which were based on 6 in mapping that dates back to the turn of the century.

The Chairperson:

Thank you very much. That was an interesting presentation. We have to decide whether we want to further consider that as a potential area of inquiry. We will be asking whether the Committee will agree to staff drawing up draft terms of reference for consideration at a later date to see whether this is something that we want to pursue. However, your presentation was helpful for our further consideration of the matter.

Mr McLaughlin:

Will we get a wee run out in a plane with a camera?

Mr Hussey:

The Committee could be squeezed into the back of a helicopter.

Mr Steenson:

You may want to do that once, but you may not ask for a return flight.

The Chairperson:

We also need an app for switching off Mitchel's phone.

Mr McLaughlin:

They can do it in virtual mode. I have been down there and it is amazing what they are at.

Mr Brontë:

Thank you very much indeed for the opportunity to tell you a little bit about that aspect of LPS business. As Mitchel has already provided a great advertisement for coming to Colby House, we welcome any other members of the Committee to come to see some of the action and work that is going on there, because it puts it in context. I think that members would find it very interesting.

The Chairperson:

We will certainly consider that. That is our second invite of the morning. We will see how much time we have.