UK Location Programme

Benefits Realisation Strategy

Final

Version 2.0

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File Reference:

DOCUMENT CONTROL

Change Summary

Version	Date	Author/Editor	Change Summary
0.9	8th Nov 11	Paula Wilks	First version using UKLP template
1.0	15 Nov 11	Paula Wilks	Incorporates comments from Lisa Smith
1.1	21 Nov 11	Paula Wilks	Incorporates comments from RB
1.2	22 Nov 11	Paula Wilks	Includes targets for benefits measures and plan
1.3	24 Nov 11	Paula Wilks	Includes descriptions of "Yellow Boxes"
1.4	01 Mar 12	Gareth Jones	Amended version to reflect Location Council steer
1.5	13 Mar 12	Gareth Jones	Incorporates approach for identifying key opportunity areas
1.6	30 Mar 12	Gareth Jones	Incorporates amendments requested by Programme Board
1.7	27 Apr 12	Gareth Jones	Incorporates comments from Clare Hadley
2.0	4 May 12	Gareth Jones	Final Published Version

References

Ref.	Title/Version/Publication Date/Author
A	Contribution to the extended impact assessment of INSPIRE
B	UK Location Programme Full Business Case
C	The Value of Geospatial Information to Local Public Service Delivery in England and Wales

CONTENTS

1 INTRODUCTION

1.1 Purpose

The role of the UK Location Programme is to implement both the UK Location Strategy and the INSPIRE Directive in the UK. As a consequence any work that is undertaken in realising the benefits needs to take both of these into account. The timeline for the implementation of the INSPIRE Directive stretches out until 2020 (see the INSPIRE roadmap) and the expectation is that the longer term end benefits resulting from this will not start to be realised to any significant degree until some way along the timeline (the original business case estimates this as being around 2015-2016). Whilst implementation of INSPIRE is fundamental part of delivering the Location Strategy the Location Council, understandably, are keen to start to measure the benefits that are being realised through the use of geographical information, both now and in the short to medium term, as well as the longer term.

This Benefits Realisation Strategy describes the UK Location Programme's (UKLP) approach to realising benefits. It provides details of a structured, continuing process that will be followed to ensure that benefits are sustained and that returns on investment are maximised where possible.

The Strategy

- States what the benefits are.

- Identifies how the benefits will be tracked and measured.

- Identifies the risks that may prevent benefits being realised.

- Identifies the critical success factors that need to be in place to ensure that benefits are realised.

- Defines where the Programme can act.

- Presents a benefits realisation plan for 2012/13 to 2014/15.

1.2 Definition

Benefits realisation is the process of identifying, modelling, planning, achieving and tracking benefits, and assigning responsibilities for carrying out these activities. It enables the success of a programme to be assessed in terms of achievements rather than deliverables. A key feature of benefits realisation is demonstrating and communicating the benefits so that their contribution to business objectives is widely accepted.

The UK Location Programme differs from a typical project in two important ways:

- The ultimate benefits are delivered by a very large number of projects and initiatives each delivering relatively small value. For example, up to £7.5m pa is expected to be saved in efficiencies completing Environmental Impact Assessments (EIAs) and Strategic Environmental Assessments (SEAs). However, this estimate is itself made up of a relatively small cost saving for each of the very many EIAs and SEAs that must be completed.

- Those responsible for delivering the ultimate benefits are found in a diverse set of locations incorporating central and local government, third and private sectors.

In effect, UKLP is setting up an infrastructure and set of services that users may access and exploit as they wish. The end benefits of the Programme will be realised by the users rather than the Programme itself. Tracking the end benefits at the point at which they are realised would require input from each user of the data (across up to 430 local authorities, many central government agencies and representatives from 3rd and private sectors), would involve substantial effort and may potentially act as a deterrent to use of the data. Even in a situation where the benefits could be tracked at an end user level the degree of influence that UKLP could have on how and when they were realised would be low i.e. the benefits cannot be managed by UKLP.

In a similar way the National Grid delivers electricity to homes across the UK, but the ultimate use of that energy is up to each user with the potential benefits of using it too numerous and varied to track, and with the use made of the energy entirely up to the consumer.

Given this situation it is not realistic for UKLP to develop a Benefits Realisation Strategy purely focussed on the delivery of the end benefits. Instead this strategy places an emphasis on the area that UKLP can manage effectively, i.e. that is within its sphere of influence. It sets out the ways in which the Programme will **enable** the end benefits to be realised by ensuring that the infrastructure and services that are delivered are effective in allowing the data to be accessed and used with the ultimate aim of delivering benefits.

This strategy also recognises that the delivery of end benefits is vitally important, and outlines the approach that will be taken to measure these. It presents a number of case studies to demonstrate the ways in which value can and is being realised from the intelligent use of location data. The UK Location Programme will enable greater benefits to be realised by

- Reducing the data costs of each initiative to increase the net benefit;

- Making the data available so that initiatives that would otherwise not be feasible become so;

- Making the appropriate skills available to allow initiatives leveraging location data to be implemented more widely; and

- Inspiring new and innovative ways of using location data to deliver even more value.

In effect the Programme aims to act as a catalyst, expanding on the pockets of best practice for using location data that do exist within the UK so that the effects are felt more widely.

Although it is not possible to track and measure each and every end benefit that accrues from the use of the location data made available via UKLP, the Programme will aim to collect examples of these e.g. via published case studies, papers, presentations etc. It will work with key partners such as Ordnance Survey, Local Government Association, the devolved administrations, the research councils, the Technology Strategy Board and Infrastructure UK to stimulate uptake of location data through both innovation and re-use of existing case studies. Specific targeting will be undertaken in areas of cash savings in government to support economic growth, and delivery of social benefit and wellbeing.

It should be recognised that this will be a subset of total benefits since not all successful initiatives will be reported. Where possible benefits that have robust quantifications may be scaled up to estimate the total benefits that could be achieved if the example initiative where to be implemented more widely. These estimates will be cross-checked against the assumptions made in the business case.

1.3 Aims

The aims of benefits realisation by the UK Location Programme are to:

- Encourage and embed ownership and responsibilities relating to the benefits with the appropriate stakeholders.

- Validate that the nature and extent of the benefits are appropriate and realistic.

- Provide a context for taking decisions that impact the benefits.

- Manage the realisation and measurement of the benefits, and the expectations of beneficiaries.

- Ensure realised benefits are identified and widely recognised.

1.4 Roles

The Programme Manager and other members of the UK Location Programme Board will be responsible for managing the benefits realisation process and its outcomes. They will

- Agree accountabilities for realising the benefits with stakeholders;

- Assess the likelihood of the benefits being delivered;

- Provide a feedback loop on benefits into programme management;

- Establish and implement a process to manage benefits realization,

- Communicate the actual delivery of the benefits; and

- Resolve any differences between forecast and actual benefits.

2 IDENTIFICATION OF BENEFITS

2.1 Role of UK Location Programme as an Enabler

The first publication relevant to the identification and quantification of the type of benefits arising from the UK Location Programme was the Contribution to the Extended Impact Assessment of INSPIRE published in 2003. This document noted that there were two different sorts of benefits that could be identified (a) benefits in terms of cost savings enabling existing needs to be met more cheaply; and (b) benefits in terms of the ability of users to access and to use data in new and innovative ways increasing productive potential or improving the efficiency and effectiveness of policy responses. It goes on to note that "It is not possible to identify in advance what new products and services will be facilitated by INSPIRE, nor is it possible even to indicate how important such gains might be in quantitative terms".

The full business case for the UK Location Programme was published in 2010. This business case used the INSPIRE Impact Assessment as a starting point to quantify benefits. It noted that these were largely operational savings in time saved. The UKLP Business Case extended the principles contained in the INSPIRE impact assessment to identify additional benefits in areas outside of environmental such as health and utilities. The quantified benefits were mostly related to the reduced cost of collecting, cleansing, aligning and managing the data rather than the additional benefits that result from intelligent use of the data.

In July 2010 the Local Government Association published a comprehensive study "The value of geospatial information in local public service delivery in England and Wales". This study estimated that in 2008/9 there was an increase to GDP of £230m driven by the use of geospatial information in public service delivery. This was estimated to grow to £560m by 2015. However the £560m is sub-optimal and could be increased by £40m if barriers to the use of the information for these purposes were removed. The study goes on to identify the three main barriers as

- Lack of awareness of benefits and resistance to change amongst users

- Implementation costs (hardware / software) – real or perceived

- Inappropriate data pricing and/or restrictions on access

Although the changed economic environment will impact on the quoted figures, the principle that removal of the barriers will allow additional value to be realised remains sound.

The UK Location Programme should address directly or indirectly all of these barriers, and also some of the others identified, including lack of skills, data silos and lack of consistent standards and in so doing allow the additional benefits to be realised.

As outlined in the introduction it is not feasible for UK Location Programme to identify or manage all of the areas in which benefits may be realised. It is possible, however, to identify the types of benefits that may be delivered. Appendix A contains a model showing the linkage between the infrastructure and services put in place by the Programme, the enabling benefits expected to arise from this infrastructure and the end benefits of the Programme.

The enabling benefits are related to the 5 strategic actions outlined in the UK Location Strategy and this is shown in the diagram below.

**UK Location
Strategic Action**

**Enabling
Benefit**

(1) We know what data we have and avoid duplicating it

(2) We use common reference data so that we know we are talking about the same places

(4) We can share location related information easily through a common infrastructure of standards, technology and business relationships

(3) We have the appropriate skills and awareness both among geographic professionals and among other professional groups who use location information or support its use

(5) We have strong leadership and governance to drive through change an deliver benefits including the implementation of the UK Location Strategy

Knowledge of What Data is Available

Improved Interoperability and Data Harmonisation

Improved Spatial Data Quality

Improved Capacity and Capability for Use of Location Data

Ease of Access to and Usefulness of Data

Increased Cross-Sector Collaboration

Greater Awareness of the Value of Using GI Data

2.2 Realisation of UK Location Programme as an Enabler

To be able to ensure that the UK Location Programme fulfils its role as an enabler it is important to

- Understand the ways in which it is an enabler;

- Identify measures which can be tracked to ensure that it is functioning effectively as an enabler and that the enabling benefits are realised; and

- Identify actions that can be taken to maximise it's effectiveness

To gain a fuller understanding of how the UK Location Programme drives benefits opportunities in other areas, and how actions taken within the Programme can affect how well it functions in this respect, a cause and effect map of the various drivers was built up with input from a number of interested parties. The Benefits Model was used as the starting point for this cause and effect map.

A cause and effect map is a diagram that shows the effect identified drivers have on a specific outcome. A driver is something that impacts (positively or negatively) on this outcome. The cause and effect map can have many layers of drivers i.e. drivers that impact drivers that impact drivers that impact outcomes and may contain feedback loops that can be manipulated to drive a virtuous (as opposed to a vicious) cycle.

The cause and effect map assists in the development of the Benefits Realisation Strategy by

- Helping to identify all the elements that will need to be in place to ensure that the Programme will function effectively as an enabler;

- Identifying which barriers to increased use of location data (including those listed by the LGA report) are addressed by the Programme; and

- Identifying potential benefits measures that can be tracked during and following implementation to ensure that the Programme fulfils its role as an enabler

The full cause and effect map is shown in Appendix B. Variables on the map in Green and Yellow boxes are consistent with the Green and Yellow boxes shown on the higher level benefits model. This map does not contain all the different benefits shown in blue on the benefits model, but contains the generic "Benefits" box. This is because the map is intended to focus on the Programme realising its role as an enabler, rather than on all of the individual benefits.

The map has been colour coded to identify the following themes

- Blue = data related

- Green = skills and awareness related

- Pink = constraints to achieving benefits

Each theme is considered in turn in the remainder of this section. Potential measures for benefits realisation are identified. It is anticipated that these will be filtered, refined and potentially added to during the next stage of this strategy. As the process by which the data for the measures is collected is developed it may become necessary to revisit the measures to ensure that they can be tracked. It will also be necessary to ensure that the measures cover all of the Enabling Benefits.

2.2.1   Data Section

The Data section of the benefits map relates to ensuring the success of the project in making data of the right quality available to users. This incorporates both technical aspects of the project e.g. publishing of the data on the portal and business change aspects such as the creation and enforcement of a consistent method for recording metadata and creating a consistent set of standards and reference geographies to ensure "we know we are talking about the same place".

Contained within this section there are two areas related to how the Programme engages with the people who are to make use of the data (highlighted in green on the diagram above).

The first relates to the user interface of the data.gov.uk portal, and how the ease of use (or otherwise) of this will impact on the user's ability to find, download and use appropriate data. This has been raised as one of the key risks to ensuring that benefits are realised.

The second relates to the awareness of UKLP as a potential source of data – if the data is to be accessed and used to its full potential then as many people who may make use of the data as possible must know that it is there to be accessed.

Barriers Addressed

One of the barriers identified in the LGA report was "Lack of consistent standards" - by putting in place a common infrastructure, standards and reference data the Programme will help to address this barrier.

Potential Enabling Benefits Measures

How successfully has data been made available?

- Number of datasets with metadata registered on data.gov.uk
- Number of datasets registered for viewing
- Number of datasets registered with download services

How easy is it to access and use the data?

- Number and percentage of open datasets with 3* ratings in the w3c open data rating
- Number and percentage of datasets using the OGL
- Number and percentage of datasets with passive as opposed to active licensing
- Number and percentage of datasets with less than 6 clicks to license / download

Is the data meeting INSPIRE standards?

- Number of datasets transformed to INSPIRE standards
- Proportion of datasets with metadata passing the assurance test

How useful is the data?

- Number of datasets downloaded
- Number of datasets downloaded as a percentage of those previewed
- Proportion of datasets with user ratings
- Proportion of those datasets with overall positive user ratings

How aware are people of UKLP and how useable is the portal?

- Number of hits against location data on data.gov.uk
- Number of UK Location Twitter followers
- Number of UK Location newsletter subscribers
- Number of apps developed using location data

2.2.2   Skills & Awareness Section
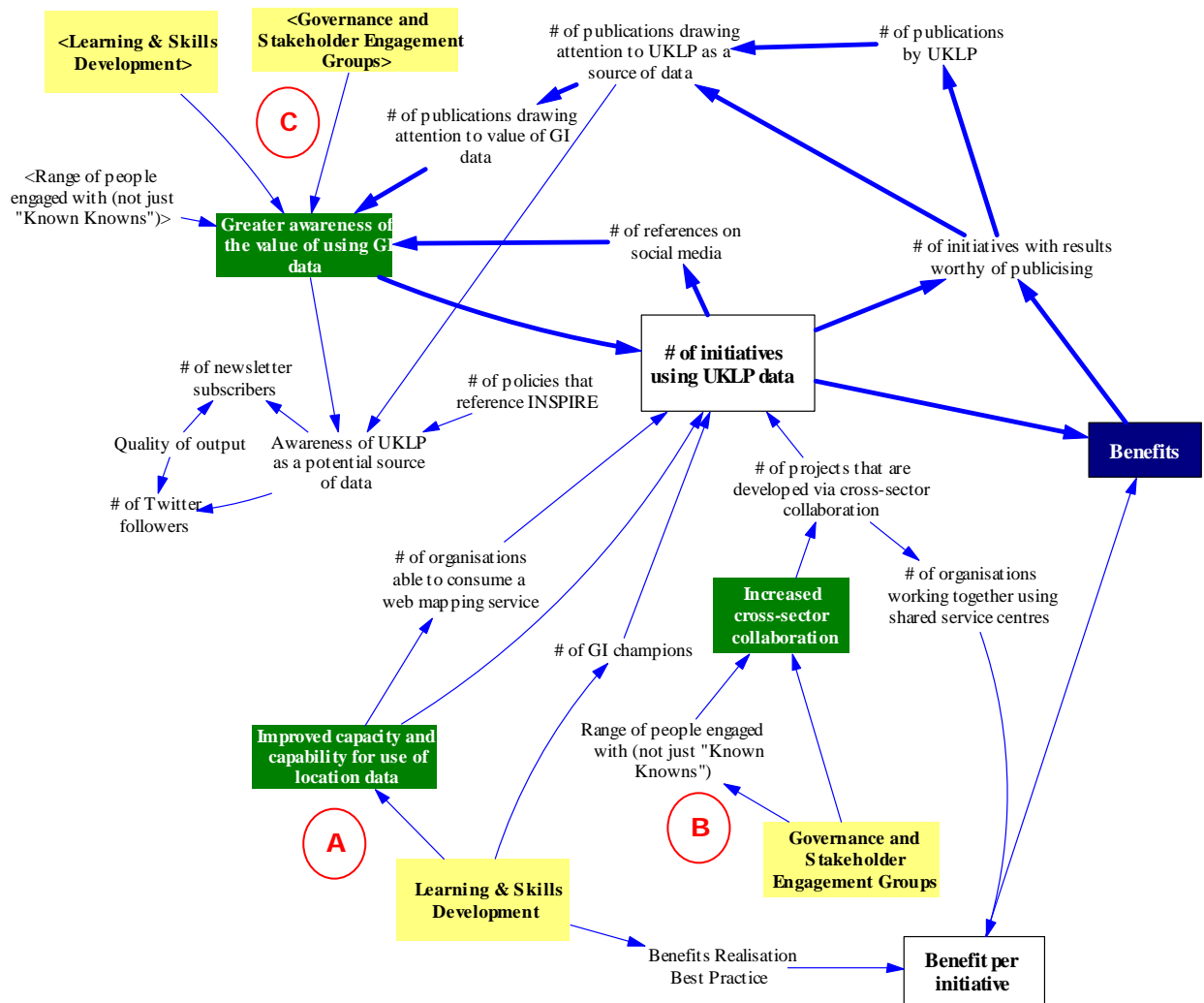
There are 3 key elements to the Skills & Awareness section of the map

A. Building the skills necessary to utilise the location data and those to realise the benefits of using it.

B. Engaging with a defined group of key stakeholders and potential users of the data to drive and promote its use

C. Building awareness of the value of using data in a wider community via communications, publications etc

The arrows in the top right section of the diagram are in bold to highlight a number of feedback loops. As awareness of the value of using GI data increases so does the number of initiatives making use of the data, this in turn leads to an increase in the number of publications, references etc which helps to increase awareness further. The feedback loop is important because an input of effort to drive it will be amplified by the behaviour of the loop itself. It is also important to monitor whether references to the Location Programme and/or INSPIRE are positive or negative, since any negative references could be amplified in a similar way.

Barriers Addressed

- A lack of awareness of the value of GI data was highlighted as the number 1 barrier to greater use of the data in the delivery of public services. This is explicitly included within the map above with a number of actions intended to address this barrier.

- Lack of skills was also identified as a barrier to greater use of location data. The Learning and Skills development part of the Programme should address this.

Potential Enabling Benefits Measures

How well are we engaging with key stakeholders?

- Number of key stakeholders engaged with

- Number of communications to key stakeholders

- Number of new contacts made and engaged with

- Number of sector / industries engaged with

- Number of partnerships facilitated between stakeholders

- Proportion of attendees at UK Location events rating them as very good

How aware are people of UKLP?

- Number of Twitter followers

- Number of newsletter subscribers

How successful are we in promoting greater awareness of the value of GI data?

- Number of publications by UKLP promoting the use of GI data

- Number of communication channels used for promoting the use of GI data

- Number of times communications are accessed (pulled, rather than pushed)

- Number of references to UKLP on www

- Number of suppliers offering GI services on data.gov.uk

How successful are we in developing skills?

The shape that the Learning & Skills Development part of the Programme will take is still to be determined. It is not possible to define a set of measures until this has been done, but possible candidates include

- Number of courses delivered

- Number of practitioners trained

- Number of public sector employees trained in use of GI

- Number of best practice guides developed

- Number of downloads of training material

*How successful are we in enabling initiatives to use UKLP data?*

All of the previous measures are leading indicators that UKLP is achieving its objective to enable the successful use of the data. That is, they may indicate that the prerequisites are in place but they do not explicitly demonstrate that the data is being used to add value. The following measures are lagging indicators, that is, they will not increase until after the objective is achieved.

- Number of references to successful initiatives on social media

- Number of publications referencing UKLP data

- Number of policies that reference INSPIRE

- Number of applications developed using UKLP data

How demonstrable are the benefits?

- Number of case studies with significant attribution of benefits to UKLP in their business case and benefit reporting

- Potential for wider delivery of similar benefits to those already being achieved in one area of government

2.2.3   Constraints Section
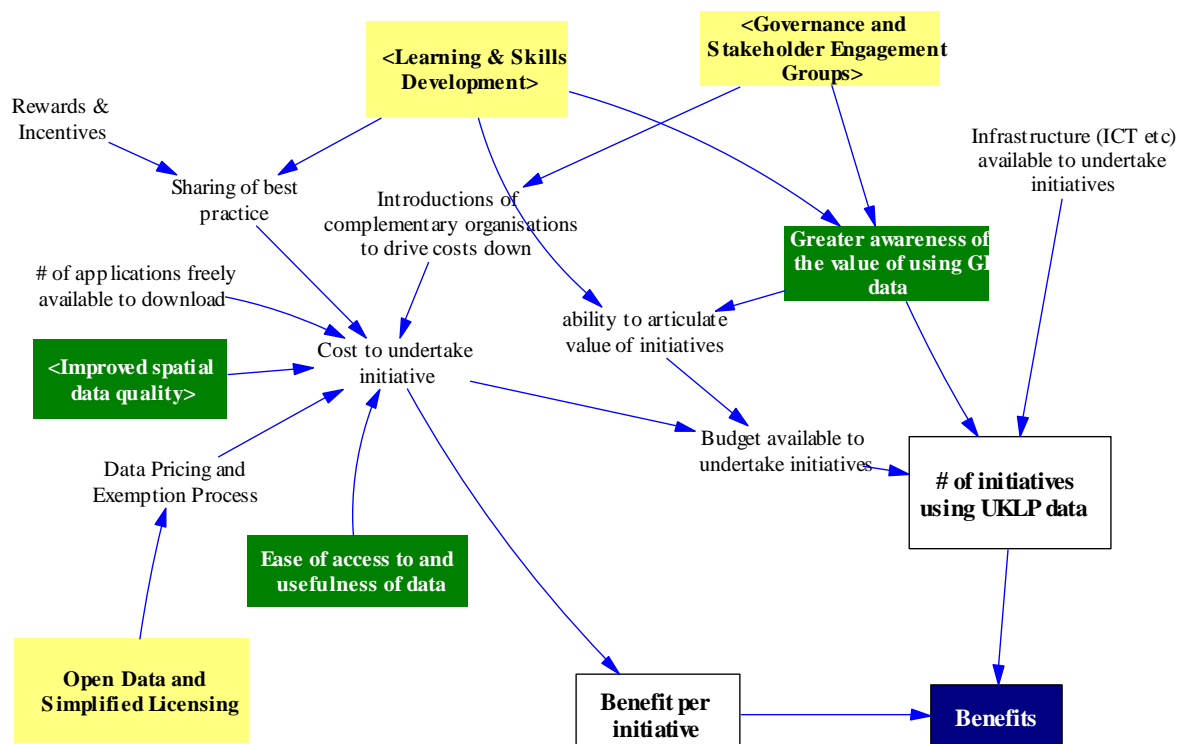
Many of the potential initiatives that could make use of UKLP data will require some up-front funding. Budgetary constraints, especially in the current economic climate will limit

the number of initiatives that can be undertaken. There is little that UKLP can do to increase the funding available but they can assist both in driving down the cost of the initiative and in helping to articulate the benefits of such initiatives to increase the chances that they will be allocated a share of a limited budget.

Such actions include

- Making data available for share and reuse which will drive down costs

- Taking steps to simplify and get consistency in licensing arrangements

- Promoting best practice (and lower cost) methods that may be shared amongst organisations

- Introducing organisations that have complementary resources and objectives so that they may work together and share costs

- Providing training on the building of business cases to support requests for funding.

- Providing applications or "starter kits" available for download

Barriers Addressed

Two barriers identified in the LGA report can be addressed via actions outlined above

- Inappropriate data pricing / restrictive licence conditions

- Implementation costs

In addition, although the report did not explicitly identify the lack of skills to prepare business cases as a barrier it does recommend "upgrading knowledge and skills for those involved in geospatial information to enable them to build and present the business case in financial terms" as a means of helping to unlock the benefits.

Potential Enabling Benefits Measures

- Number of datasets downloaded in relation to price (to assess appropriateness of pricing)

- Number of Best Practice guides published

- Number of applications / "starter kits" available for download

2.2.4   Conclusions

The UK Location Programme incorporates both technical and business change elements in making data of the right quality, which is interoperable and reusable, available to potential users. In addition it is clear that without the right softer "people" elements in place to address the potential user community, and those in a position to sponsor the increased use of location data, the Programme will not reach its full potential to deliver benefits.

Sections 5 and 6 of this document outline the next steps and present a plan for the next 15 months detailing how the insights and measures described in this section will form the basis of the Benefits Realisation plan.

3 END BENEFITS ARISING FROM THE UK LOCATION PROGRAMME

3.1 The Costs of Managing Location Information

Research by OXERA (Oxford Economic Research Associates Ltd) suggests that the contribution of Ordnance Survey to the GB economy underpins 12-20% of economic activity i.e. up to £280 billion of the UK's economic activity each year[1]. In the environmental domain, location information underpins over £7 billion spent each year on environmental planning, protection, monitoring and assessment. The challenge facing many such programmes is that between a quarter and a half of their costs are often spent in finding and accessing data, ensuring that it is fit for purpose and transforming it into interoperable formats[2]. The scope for savings in sharing environmental information is, therefore, highly significant.

In addition, many of the UK's public sector bodies currently spend large amounts of scarce resource managing their own copies of spatial data produced by other organisations, for example, most departments and delivery bodies hold multiple copies of Ordnance Survey's *Mastermap* of Great Britain (11 terabytes of spatial data per copy). The Location Programme will eliminate this costly duplication, deliver cash savings to the public sector and present senior managers with opportunities to make their organisations much more efficient and effective.

A Local Government Association study[3] undertaken in 2010 into the value of using geographic information in local government in England and Wales reached the following conclusions:

a) real output of local government increased by over £230 million in 2009 as a result of the accumulated productivity benefits of using geospatial applications;

b) GDP for England and Wales was over £320 million higher in 2009 using GI;

c) projecting forward to 2015, GDP for England and Wales will be an estimated £560 million higher using GI;

d) Better policies and action to deliver the ideal scenario, could improve GDP by an estimated £600m by 2014-5.

3.1.1 What are the Quantified Benefits?

The EU impact assessment analysed the economic, environmental and social benefits of INSPIRE. It concluded that for every 1€ invested in implementing the INSPIRE Directive, between 4€-8€ in benefits would be yielded. The benefits are largely operational savings

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[1] The Economic Contribution of Ordnance Survey, OXERA final report, 1999
http://www.ordnancesurvey.co.uk/oswebsite/aboutus/reports/oxera/

[2] Atlantis Project 2008: This project is designed to provide consistent and joined up approach to flooding. It found that between 25% and 50% of time was wasted sourcing the right data. http://www.projectatlantis.net

[3] http://www.lga.gov.uk/lga/core/page.do?pageId=12079357

in time saved, although IT spend will also be reduced because there will be a federated system and a single web portal on data.gov.uk for accessing spatial data and information. Based on the expert group report, the financial benefits yielded to UK environmental protection activities alone are estimated in table 1. Given that all these benefits are in the environmental policy domain, it could be argued that they are directly attributable to Defra and its network of activity.

Table 1: Quantifiable benefits to UK (Defra) environmental protection activities

INSPIRE Benefits	£m (p.a.)
More efficient Environmental Impact Assessments and Strategic Environmental Assessments	10-20
More efficient environmental monitoring and assessment	10
More cost effective expenditure on environmental protection	30
More cost effective implementation of EU environmental directives	5
More cost effective implementation of EU environmental projects	1.5
Reduced duplication of spatial data collection	2-25
Improved delivery of risk prevention policies	12-40
Total	**70-130**

The UK Location Strategy also contains examples of additional benefits in areas such as health and utilities. Because the same co-ordinating mechanisms will be used, the cost of supporting additional data themes wider than INSPIRE would be marginal as the infrastructure would already have been put in place by the Programme. INSPIRE requirements would need to be given the highest priority, but the UK public data initiative is likely to drive the early delivery of location data across non environmental areas of Government business too. The quantitative benefits identified above for the environmental sector could be replicated across government departments, leading to significant additional quantitative benefits. These are summarised in table 2.

Table 2: Quantifiable benefits across UK government departments

Location Strategy Benefits	£m (p.a.)
Avoiding unnecessary data capture costs	150
Joined up service delivery across a single set of core reference geographies	200
More cost effective data collation	20-50
Convergence of data strategies across UK and EU	30
More efficient management of core reference geographies	10-20
Increase in shared geographic information services	40
More efficient solutions development and higher skills base	20
Total	**470-510**

These costs, taken from the Defra UKLP Full Business Case 1 February 2010, have been derived from the best available public sector market metrics provided by the Ordnance Survey GB at that time.

3.1.2   What are the Qualitative Benefits?

The implementation of the Location Strategy will bring a number of qualitative benefits for the public sector:

- improved value for money in respect of avoiding wasteful duplication of collection and maintenance of data and improved efficiency of public services;
- improved policy decisions and tangible productivity gains by improved evidence based analysis;
- improved cross-departmental working as information sharing will become common place; and
- knowledge of the existence of datasets and access to them will be significantly improved

It will also ensure that members of the public and businesses exploit the full value of geographic information leading to:

- better delivery of public services, such as transport and utilities enabled by being able to combine information about a specific locality that previously was either not possible or not cost effective;
- better policy development, informed by location, leading to improved and targeted implementation of policy, for example, in emergency response, such as flooding; and
- increased opportunities for the publishing industry to produce value added products, for example, for home insurance and house purchases.

3.2 Identifying and measuring End Benefits

The end benefits of the Location Programme can be broken down into two categories:

1. Benefits relating to cost avoidance, enabling BAU tasks to be undertaken more cheaply and more cost effectively, examples include completion of Environmental Impact Assessments (EIAs) and Strategic Environmental Assessments (SEAs). These tasks would take place with or without the data and services provided by the Programme, but would be more costly without.

2. Benefits resulting from better use of location data – where the Programme enables increased benefits to be achieved. Examples include using location data to optimise route management for waste disposal / school buses etc. These benefits are not just savings in the cost of the location data, but additional benefits, potentially cost savings or increased productivity, brought about by intelligent use of the data. The number of such initiatives is expected to increase due to the impact of the Programme.

The first set of benefits may be considered as "saving money" i.e. doing the same for less. The second set of benefits may be considered as feeding into the Government strategy for innovation and growth i.e. doing more for the same cost.

As we have already seen, the original business case concentrated largely on the benefits in the first category, i.e. the reduced costs of delivering day to day work and the reduced costs of initiatives that would have taken place in any case. It used a top down approach, necessitated by the large number of areas where benefits are expected to

arise, to estimate the value of the cost savings. It is acknowledged that there is uncertainty attached to these estimates, however the business case was conservative both in the scope of benefits identified and in the estimates of the amount of cost savings that could be realised. At the time the business case was prepared approval was sought from the Defra economist for the approach taken and the following response was received:

"On behalf of the Chief Economist, the Deputy Director of Environment and Growth Economics has reviewed the final stage IA on the INSPIRE Regulations 2009. She approves the overall approach taken to the cost-benefit analysis, and advises that the IA represents a reasonable view of the likely costs, benefits and impacts of the leading option. She notes that while the preferred option implements the Directive (but does not go beyond these requirements), other options were also considered – including voluntary approaches and more prescriptive implementation approaches – and discounted. She also notes that there are some key uncertainties surrounding the costs and benefits estimates of the preferred option relating to the timing of the implementation rules, but that the IA makes conservative assumptions about the scale of benefits and when they can be expected to be realised."

At this stage we do not have any better information to develop more informed cost saving estimates but believe that the original approach is still valid. The impact of the current financial climate will, however, have to be factored in. On the one hand, there is less money to spend on new initiatives that will deliver benefit. On the other hand, there is more incentive to re-use and collaborate with others to find new, less costly, ways of solving problems.

It is especially important to identify and champion early/quick wins as these will support the business case for the ongoing work of the Programme and related areas. Section 2.2.2 demonstrates that there is a feedback loop where identification and communication of successful initiatives increases the awareness of the value of location data and therefore increases the areas in which it is used. This is another reason why championing quick wins is important to the success of the Programme.

As explained earlier in this document, the arms length nature of UK Location Programme from the point that benefits are realised makes it difficult to prepare a full benefits realisation strategy that focuses purely on such projects. As a consequence the Programme is working with a targeted group of key beneficiaries to develop an approach which allows it to identify where the benefits may be realised and for measuring and monitoring how successful this has been. The emphasis of this activity will be on the collection of targeted and relevant case studies.

In particular the Programme will place particular emphasis on identifying cases which demonstrate benefits which fall into the following categories:

- Financial (e.g. environmental impact assessments, route planning, estimates of UKLP contribution);

- Economic (benefits extrapolated across wider UK community, contribution to GDP); and

- Societal (Case studies of societal and wellbeing benefits e.g. (level of) environmental awareness and participation).

In order to maximise the impact that the Programme has in this area, it will work with key partner organisations (e.g. Ordnance Survey, Local Government Association and the devolved administrations) to actively identify and share examples of benefits that have and are being realised where this is relevant and appropriate (e.g. OS PSMA cases

studies, open data benefits, LGA case studies). To support this activity the Programme will also be looking for case studies from Council and Board members to demonstrate how their respective organisations are benefiting from the use of location data/information now. Making this information available will aid the Programme in its quest to obtain good quality case studies from other organisations.

The Programme will place particular emphasis on identifying priority opportunity areas, such as infrastructure or civil contingencies, and then engaging with key beneficiaries in these areas (for example , the research councils, the Technology Strategy Board and Infrastructure UK) to stimulate the uptake of location data through both innovation and re-use, and to identify cases which demonstrate how location data and the services that the Programme is delivering are benefitting delivery in these areas. The Programme will review and refresh the list of priority opportunity areas on an annual basis and will look to the Location Council to help it to target those areas which it feels are the most appropriate. A number of potential key opportunity areas are identified in Appendix F. The Programme acknowledges that in identify key opportunity areas and finalising those which it wishes to pursue it must take into account initiatives that apply across the whole of the UK, be they specific to one administration or spanning two or more.

As well as monitoring these opportunity areas the Programme will also play a key role to ensure that it is "plugged" into key initiatives which are or will be using location data at the heart of the services that they will be delivering. Since the launch of the location Programme there are a number of examples, e.g. crime maps, the use of location information in preparations for the 2012 Olympics, where the Programme and Council have either not been aware or not been approached. The Programme will therefore look to do what it can to ensure that such initiatives are on the radar of both the Programme and the Council, and that they are aware of the data and services that the Programme is making available.

The UK Location User Group has an important role to play here, helping to drive the delivery of benefits and to provide examples of where these are being realised. The Programme will therefore work with the User Group to define the role that they can play, which it is envisaged will involve a more programmatic approach to their activities in the future.

The Programme also needs to test out, where possible, the benefits assumptions made in the original Economic Model (as shown above), with an initial focus being placed on testing whether the efficiencies identified in the preparation of Environmental Impact assessments (EIAs) and Strategic Environmental Assessments (SEAs) are being realised.

The Programme is aware that any activity that it is undertaking in this area needs to be consistent with the way that CO and BIS are looking at open data, and will take this into consideration as it looks to develop and deliver the activities detailed above.

As a result of the activities detailed above, the Programme will build up a body of measurable evidence on the benefits arising from UKLP, both financial and non-financial. When this body of evidence becomes sufficiently widespread, the Programme will consider extrapolating from the example benefits to preparing an economic analysis of the overall contribution to benefits.

The Programme will report benefits to the Council and to the Commission and will use evidence of data usage and benefits delivery to determine priorities for engagement.

3.3 Case Studies Demonstrating the Value of Location Data

The case studies outlined in Appendix G have delivered benefits through the use of location data *without* the advantages provided by the UK Location Programme. They demonstrate the sort of benefits that can be realised by using location data in a smarter way. The Location Programme will facilitate the realisation of even more benefits from this type of initiative since:

- Such initiatives will be less costly to undertake in the future, increasing the net benefits delivered by the initiatives;

- These initiatives represent pockets of best practice. In fulfilling its role as an enabler the UK Location Programme will promote the spread of such practice so that it is embedded throughout the UK, rather than taking place in discrete areas; and

- As more location data is made available, the types of initiatives that can be conceived will increase substantially.

The strategy that the UK Location Programme is following means that both spatial and non-spatial data may be accessed via the same portal – data.gov.uk. It is envisaged that more benefits will accrue from the potential uses of combined data than of location data alone.

The Open Data strategy and UKLP are both promoting linked data. Location data is a natural candidate for this and by contributing to the linked data strategy UKLP can claim a share of the benefits arising from it. It is recognised that the unproven nature of the technology means that there is a risk that the pain of implementing this approach may outweigh the gains and this will need to be monitored.

4 RISKS AND CRITICAL SUCCESS FACTORS

The following risks that may prevent benefits being realised and the critical factors that must be in place to ensure success have been identified.

4.1 Risks

- A break in continuity of funding and/or availability of resource means that the scope of the project is cut, raising the risk of infraction fines (i.e. disbenefit) and impacting delivery of (positive) benefit

- Lack of user friendliness of data.gov.uk and the contributions made by data publishers means that the data is not accessed and used

- Success is measured by completion of the technical programme, especially the technical requirements of INSPIRE, rather than the delivery of the business change programme, the INSPIRE data sharing regulations, and the ongoing realisation of benefits

- There is competition for the budget necessary to undertake initiatives meaning that far fewer are undertaken and it is difficult to obtain traction within the user community.

- The skills programme is not successful in enabling the supply of enough resource with the right skills to make good use of the data

- There is insufficient engagement, understanding and "buy-in" of senior management to a spatial data driven approach

- The data is not updated and maintained leading to obsolescence

- A lack of willingness to "share" data – i.e. the belief that own data is the best and only source

- A publication that includes inappropriate or wrong usage of data that undermines the usefulness of using location data

4.2 Critical Success Factors

- A pragmatic and agile approach will be required to ensure success in a changing economic and political environment

- The Programme needs to reach a large enough group of potential users of the data

- Economic growth and the direction that environmental policy takes will impact on the success of the Programme

- Building of commercial applications that exploit the data will help to drive success of the Programme

- Active participation of the stakeholder community will be required to aid in developing case studies and success stories.

- An effective process for benefits planning, management and achievement (see section 5)

- Recognition of the value of benefits realisation. Explicit steps should be taken to demonstrate the value of managing benefits.

5 REALISING THE BENEFITS – NEXT STEPS

The benefits realisation process can be considered in two stages

- Structuring and tracking the benefits; and
- Claiming and sustaining the benefits

Step	Achieved	To Do
Stage 1 – Structuring and Tracking the Benefits		
1. Develop the benefits model	This document presents a model showing how the infrastructure and services that will be put in place by the Programme will deliver benefits to a wide range of end users. It also presents a drill down into the detail and drivers showing how UKLP acts as an enabler for a diverse set of projects and initiatives to deliver benefits.	
2. Define the benefits measures	Potential measures for success in enabling end benefits have been identified. These are listed in Appendix C. Targets for a number of measures have been determined and these are presented in Appendix D.	Review the list of benefits and decide on the key measures to be tracked going forward. Identify the business owners with responsibility for each measure. Define a process by which the measures are to be quantified. Develop a baseline and set of targets for the measure.
3. Develop the Benefits Profiles		Create benefits profiles for each Enabling Benefit. These are a collation of the information from steps 1 and 2 presented benefit by benefit. See Appendix E for an example.
4. Identify the risks	Key Risks and Critical Success Factors are listed in section 4.	Extend the risk section to ensure it is complete. Identify mitigating actions for each of the risks.
5. Track the benefits and risks		Implement the measurement process designed in Step 2. Prior to delivery this will involve tracking the likelihood of the benefits being achieved, and once delivery has taken place it will focus on tracking actual benefits delivered.

Stage 2 – Claiming and Sustaining the benefits		
6. Claim and Sustain the benefits		Achievements to be rigorously evaluated against the benefits model, and evidence of success will be presented to the sponsors and stakeholders prior to sign-off.

The ongoing Benefits Realisation will also involve reporting on progress and achievements, feeding back any implications into the Business Case, programme plan and change activities, managing the risks and escalating exceptions. There is an obligation under INSPIRE to report on benefits realised. The format and timings for this reporting has yet to be set out by the EU Commission, when this has been finalised we will need to ensure that the reporting is aligned to these requirements.

Detailed outcomes will be reviewed to ensure that they are still aligned with the strategy. This will encompass issues such as:

- Which outcomes have been achieved, and were the targets right?

- Which outcomes have not been achieved, and why not?

- Are there any unexpected benefits, and how can they be realised?

- What potential is there for further benefits to be achieved?

- Are any corrective actions required?

There is a potential to use the Benefits Realisation process to increase or bring forwards the benefits that can be realised. For example, if it becomes clear that the data is being exploited effectively in one particular area this could be used as evidence to prioritise the order in which datasets are published. If the use of the data appears low in an area this could inform which potential users should be targeted with communications in an attempt to promote further use.

In some cases the success criteria may be adversely affected by factors outside the control of UKLP. This is a pan government programme with a wide range of potential beneficiaries across a large number of stakeholder groups. Furthermore, developments and changes in Government policy around the release and sharing of data and in establishing the Public Data Corporation could all have an effect. There will therefore be a need to give consideration to these both when the success criteria are developed further and subsequently when it comes to measuring the outcomes.

6 BENEFITS REALISATION PLAN

Task	Q1 2012/13	Q2 2012/2013	Q3 2012/2013	Q4 2012/2013	Q1 2013/2014
Benefits Realisation Management of Enabling Benefits					
Review the list of potential benefits measures and decide which measures should be tracked going forwards. Ensure that the measures cover all of the Enabling Benefits	▉				
Assign business owners to each of the Enabling Benefits	▉				
Define the process by which each measure will be quantified and determine the frequency at which it should be collected		▉			
Develop a baseline and a set of targets for each measure		▉▉▉			
Complete a benefits profile for each benefit	▉▉▉▉▉				
Define a framework for reporting to EU commission to comply with obligations under INSPIRE		▉			
Develop a reporting methodology for each Benefit in isolation and in total. This should include the format of the report, the frequency with which it is published, the circulation list and the actions required following publication.				▉▉	
Develop a tool to produce the required reports and a process for loading data into the tool					▉
Benefits Tracking of End Benefits					
Identify the key beneficiaries to work with to identify and track benefits (NB dependent on download services being available)				▉▉	
Develop a plan to identify whether the efficiencies identified in the original Economic Model for the preparation of EIAs and SEAs are being realised (NB dependent on download services being available)			▉▉▉		
Work with key partner organisations to actively identify and share examples of benefits that have and are being realised			▉▉▉▉		

APPENDIX A – THE BENEFITS MODEL

The Benefits Model considers the benefits that will arise from the following infrastructure and services delivered by the UK Location Programme.

Metadata Catalogue on data.gov.uk

- Metadata for all datasets catalogued and available on a single national portal

- Tools and guidance to enable metadata to be created to the appropriate standards

- Metadata harvester in place to allow the harvesting and uploading of metadata from the data provider/publisher.

Map Based Search and Preview Service on data.gov.uk

- Additional search facility via a widget on data.gov.uk to facilitate map based search using bounding box to allow user to search for data sets within a specific area.

- The opportunity for the user to view up to 10 layers of data on a map based tool, to enable them to preview and evaluate the data before they download

- The opportunity to see sample data for data sets where licencing and charging requirements exist – so that the user can "try before they buy".

Data Publisher View and Download Services

- The provision of INSPIRE compliant view and download services by data publishers

- The provision of discovery metadata to data.gov.uk for both the dataset being published and the services being provided

- Data providers are responsible for provision and subsequent maintenance of these services and quality assurance of the published metadata.

Governance and Stakeholder Engagement Groups

- The establishment of a variety of engagement groups, with appropriate governance arrangements in place, to work in collaboration with the various stakeholder communities. For example:
  - The Architecture Interoperability Board (AIB)
  - The Metadata Working Group,
  - UK Location User Group,
  - INSPIRE Theme Working Groups for Annex I and II

Open Data & Simplified Licensing

- Promotes the Government Licensing Framework for use with location data, and in particular:

  - The Open Government Licence (OGL) which was developed by The National Archive for use by UK Location. The OGL encourages use and re-use of a broad range of public sector information at no cost to the user or re-user. Where no further restrictions, conditions or charges are required the OGL is the default licence for location data.

  - The Non-Commercial Government Licence (NCGL) which is for use in specific circumstances where information may only be released for use and re-use for non-commercial purposes.

- UK Location has a supporting regulatory process, and a clear complaints process.

- UK Location is committed to:

  - the delivery of data sets in re-usable and combinable formats; and

  - the development of comprehensive inventories, with supporting metadata, showing what data is available.

- For INSPIRE data sets in UK Location there is clarity on charging

- UK Location supports sustainability for producers and their data sets.

Common Infrastructure, Standards and Reference data

- A single common infrastructure built on open standards

- An infrastructure that integrates with wider access to Public Sector Information (PSI)

- Adoption of the INSPIRE implementing rules covering

  - Discovery metadata

  - Data specifications and supporting data specification guidelines

  - Data sharing (access and rights of use)

  - Network services

- Reference data captured at the highest resolution, and reused to meet multi-resolution publishing requirements

- Data produced to common standards allowing interoperability

Monitoring and Assurance services
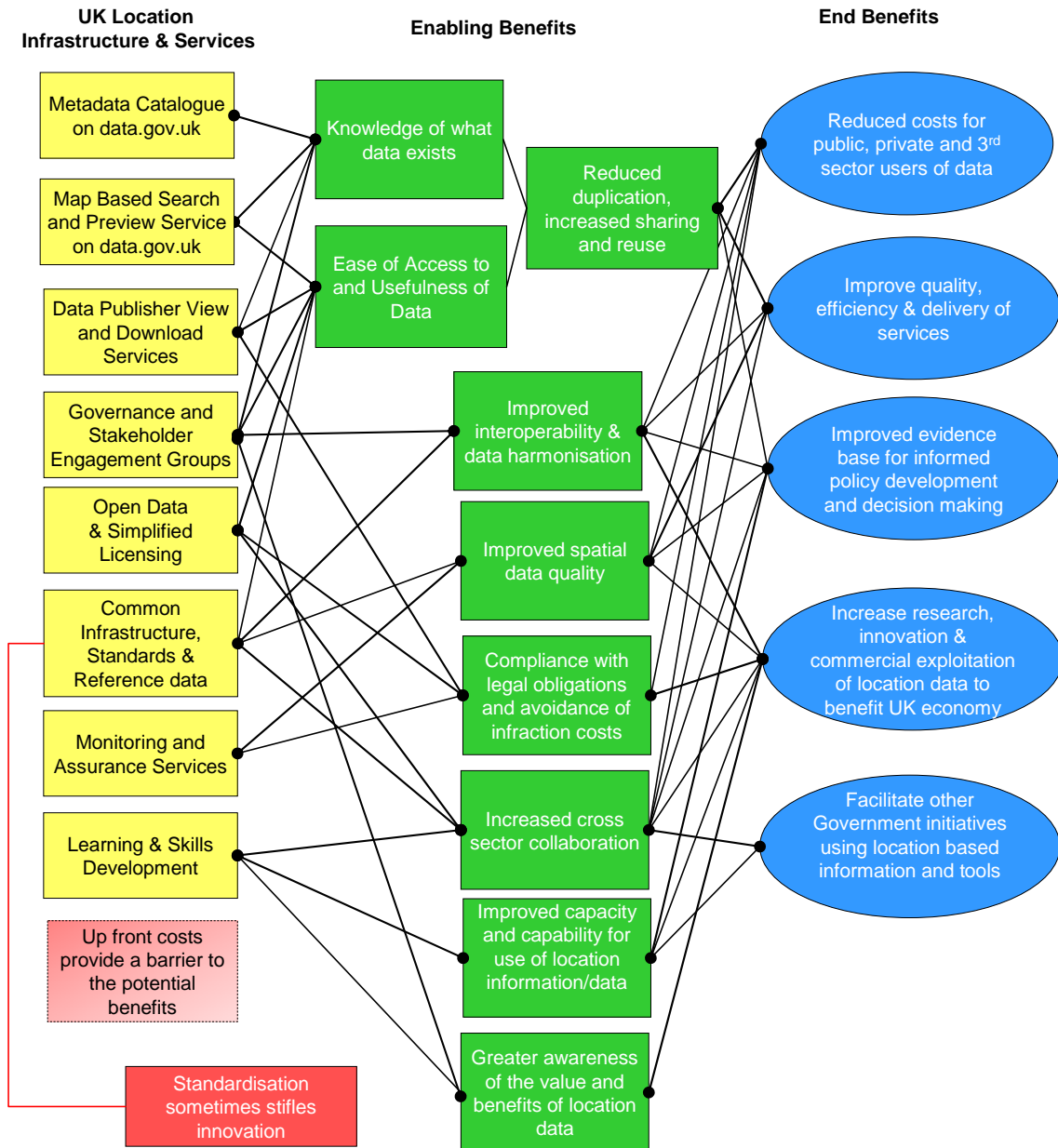
UK Location Coordination Unit acting on behalf of the Secretary of State for the Environment for implementation and compliance with the EU INSPIRE Directive, and acting as the point of contact between the European Commission and the UK on matters relating to the implementation of INSPIRE in close co-operation and agreement with the Devolved Administrations.

The Units functions include:

- Enforcing the INSPIRE regulations, in particular the registration of Discovery Metadata and Network Services

- Monitoring the operation of UK Location and making the results publicly available and to the Commission.

- Issuing guidance to public authorities and third parties on the implementation of the INSPIRE Regulations.

- Maintenance of standards, data specifications and registry items in conjunction with the European Commission.

Learning and Skills Development

- Delivery of a range of resources promoting the sharing of knowledge e.g. in the form of getting started guides, case studies and examples of good practice, published on the UK Location website and/or data.gov.uk

- Working in partnership with other organisations and sector specific innovation and improvement groups to promote awareness and skills requirements,

- The establishment of a community of interest to facilitate the participation, engagement and sharing of knowledge

- Building strong links across the academic sector with a view to embedding location information and knowledge training within existing educational programmes.

UK Location Infrastructure & Services

Enabling Benefits

End Benefits

Metadata Catalogue on data.gov.uk

Map Based Search and Preview Service on data.gov.uk

Data Publisher View and Download Services

Governance and Stakeholder Engagement Groups

Open Data & Simplified Licensing

Common Infrastructure, Standards & Reference data

Monitoring and Assurance Services

Learning & Skills Development

Up front costs provide a barrier to the potential benefits

Standardisation sometimes stifles innovation

Knowledge of what data exists

Ease of Access to and Usefulness of Data

Reduced duplication, increased sharing and reuse

Improved interoperability & data harmonisation

Improved spatial data quality

Compliance with legal obligations and avoidance of infraction costs

Increased cross sector collaboration

Improved capacity and capability for use of location information/data

Greater awareness of the value and benefits of location data

Reduced costs for public, private and 3rd sector users of data

Improve quality, efficiency & delivery of services

Improved evidence base for informed policy development and decision making

Increase research, innovation & commercial exploitation of location data to benefit UK economy

Facilitate other Government initiatives using location based information and tools

UKLP Benefits Model

Version 8.0, 23/11/2011

Key

Relationship

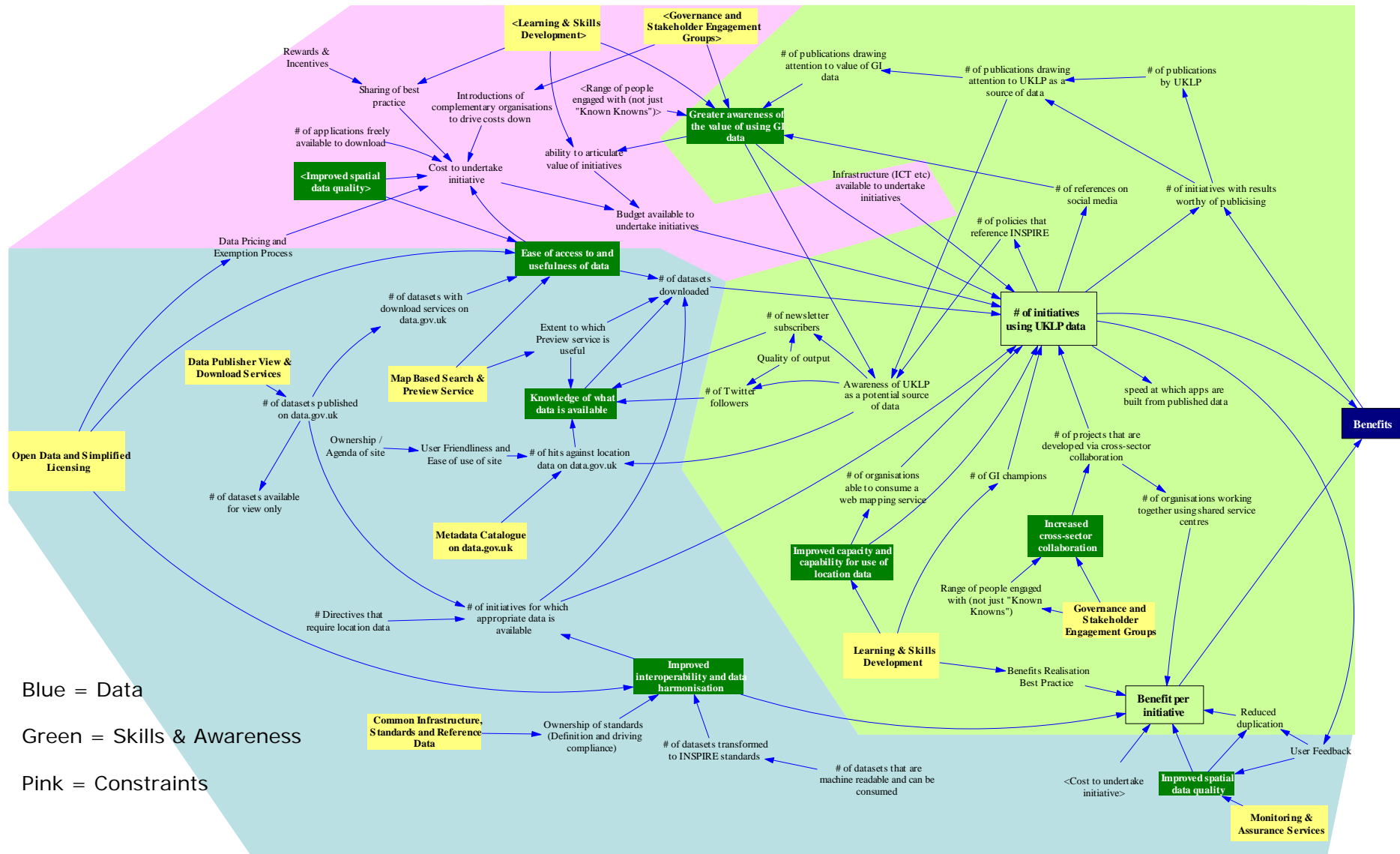UK Location Benefit

Programme Output

Enabling Outcome

Dis-benefit

APPENDIX B – CAUSE AND EFFECT MAP

Rewards & Incentives

<Learning & Skills Development>

<Governance and Stakeholder Engagement Groups>

# of publications drawing attention to value of GI data

# of publications drawing attention to UKLP as a source of data

# of publications by UKLP

Sharing of best practice

Introductions of complementary organisations to drive costs down

<Range of people engaged with (not just "Known Knowns")>

Greater awareness of the value of using GI data

# of applications freely available to download

ability to articulate value of initiatives

Infrastructure (ICT etc) available to undertake initiatives

# of references on social media

# of initiatives with results worthy of publicising

<Improved spatial data quality>

Cost to undertake initiative

Budget available to undertake initiatives

# of policies that reference INSPIRE

# of initiatives using UKLP data

Data Pricing and Exemption Process

Ease of access to and usefulness of data

# of datasets downloaded

# of datasets with download services on data.gov.uk

# of newsletter subscribers

Extent to which Preview service is useful

Quality of output

Data Publisher View & Download Services

Map Based Search & Preview Service

Knowledge of what data is available

# of Twitter followers

Awareness of UKLP as a potential source of data

speed at which apps are built from published data

Benefits

# of datasets published on data.gov.uk

Ownership / Agenda of site

User Friendliness and Ease of use of site

# of hits against location data on data.gov.uk

# of projects that are developed via cross-sector collaboration

Open Data and Simplified Licensing

# of organisations able to consume a web mapping service

# of GI champions

# of organisations working together using shared service centres

# of datasets available for view only

Metadata Catalogue on data.gov.uk

Increased cross-sector collaboration

Directives that require location data

of initiatives for which appropriate data is available

Improved capacity and capability for use of location data

Range of people engaged with (not just "Known Knowns")

Governance and Stakeholder Engagement Groups

Learning & Skills Development

Improved interoperability and data harmonisation

Benefits Realisation Best Practice

Benefit per initiative

Common Infrastructure, Standards and Reference Data

Ownership of standards (Definition and driving compliance)

# of datasets transformed to INSPIRE standards

Reduced duplication

# of datasets that are machine readable and can be consumed

<Cost to undertake initiative>

User Feedback

Improved spatial data quality

Monitoring & Assurance Services

Blue = Data

Green = Skills & Awareness

Pink = Constraints

APPENDIX C – LIST OF BENEFITS MEASURES

How successfully has data been made available?

- Number of datasets with metadata registered on data.gov.uk
- Number of datasets registered for viewing
- Number of datasets registered with download services

How easy is it to access and use the data?

- Number and percentage of open datasets with 3* ratings in the w3c open data rating
- Number and percentage of datasets using the OGL
- Number and percentage of datasets with passive as opposed to active licensing
- Number and percentage of datasets with less than 6 clicks to license / download

Is the data meeting INSPIRE standards?

- Number of datasets transformed to INSPIRE standards
- Proportion of datasets with metadata passing the assurance test

How useful is the data?

- Number of datasets downloaded
- Number of datasets downloaded as a percentage of those previewed
- Proportion of datasets with user ratings
- Proportion of those datasets with overall positive user ratings

How aware are people of UKLP and how useable is the infrastructure?

- Number of hits against map based search on data.gov.uk
- Number of hits against UK Location data site
- Number of registered users for metadata editor tool
- Number of UK Location Twitter followers
- Number of UK Location newsletter subscribers
- Number of apps developed using location data

How well are we engaging with key stakeholders?

- Number of active participants in topic groups
- Number of communications to key stakeholders

- Number of new contacts made and engaged with

- Number of sector / industries engaged with

- Number of partnerships facilitated between stakeholders

- Proportion of attendees at UK Location events rating them as very good

How successful are we in promoting greater awareness of the value of GI data?

- Number of publications by UKLP promoting the use of GI data

- Number of communication channels used for promoting the use of GI data

- Number of times communications are accessed (pulled, rather than pushed)

- Number of references to UKLP on www

- Number of suppliers publishing metadata about GI services to data.gov.uk

How successful are we in developing skills?

The shape that the Learning & Skills Development part of the Programme will take is still to be determined. It is not possible to define a set of measures until this has been done, but possible candidates include

- Number of courses delivered

- Number of practitioners trained

- Number of public sector employees trained in use of GI

- Number of best practice guides developed

- Number of downloads of training material

How successful are we in enabling initiatives to use UKLP data?

All of the previous measures are leading indicators that UKLP is achieving its objective to enable the successful use of the data. That is, they may indicate that the prerequisites are in place but they do not explicitly demonstrate that the data is being used to add value. The following measures are lagging indicators, that is, they will not increase until after the objective is achieved.

- Number of publications referencing UKLP data

- Number of policies that reference INSPIRE

- Number of applications developed using UKLP data

How demonstrable are the benefits?

- Number of case studies with significant attribution of benefits to UKLP in their business case and benefit reporting

- Potential for wider delivery of similar benefits to those already being achieved in one area of government

How well are we reducing the impact of budgetary constraints?

- Number of datasets downloaded in relation to price (to assess appropriateness of pricing)

- Number of Best Practice guides published

- Number of applications / "starter kits" available for download

APPENDIX D – TARGETS FOR SELECTED MEASURES

Measure	Target April 2012	Target April 2013	Target April 2014
Number of datasets with metadata registered on data.gov.uk	1,000	1,500	2,500
Number of datasets with view services registered on data.gov.uk	230	300	700
Number of datasets with download services registered on data.gov.uk	20	300	700
Percentage of datasets with user ratings	1%	20%	30%
Percentage of datasets with user ratings that have ratings of 4* or above	30%	50%	50%
Number of unique hits per week for UK Location website	200	300	400
Number of Twitter followers	100	300	500

APPENDIX E – EXAMPLE BENEFITS PROFILE

NB The table below is an example benefits profile only. A benefits profile, using the template below (or similar) should be developed in consultation with benefit owners and stakeholders.

Benefits Profile			
Ref	xxx	**Title**	Ease of Access to and Usefulness of Data
Description of Benefit Impact			
To Data Users		The ability to find and access relevant data via a single portal will save time in sourcing or collecting new data. The ability to preview data will allow an assessment of the usefulness of the data for the desired purpose. Ease of access to data will enable initiatives that otherwise may not have been feasible due to budgetary constraints.	
To Data Providers		A means of meeting obligations under INSPIRE A method of making their data available to users ensuring maximum benefit is obtained from it	
To Others			
Programme Deliverables required to enable benefit			
Data Publishing Service Map Based Search Map Based Preview Service Direct links to data publisher websites and data access facilities Guidance Simplified and consistent licensing			
Benefit Measurement			
Measure(s)		Number of datasets viewed Number of datasets downloaded	
Current Value		Target Value	
Start Date		End Date	
Method of Collection			
Frequency of Collection			

Additional Comments

Accountability

Programme Manager	
Benefits Owner	

APPENDIX F– KEY BENEFITS OPPORTUNITY AREAS

There are potential benefits arising from the Programme across the public, private, voluntary and academic sectors. The following table identifies a number of key opportunity areas where it is recommended that the Programme should focus to stimulate the uptake and use of location data, and to actively measure the benefits that result.

Initiative	Description	Connection to UKLP
Infrastructure UK	Unit which sits in HM Treasury with a remit to provide a stronger focus on the UKs long-term infrastructure priorities and meet the challenge of facilitating significant private sector investment. Promoting consideration of interdependencies when carrying out large capital projects.	UKLP participation on Infrastructure Data Group. Use of UKLP publication model for sharing data amongst various parties. Joint planning to consider interdependency solutions.
DCLG Capital Assets Project	DCLG project to develop a methodology for managing assets in a local area across the public sector. The project has seen the development of a demonstrator map which has been published on data.gov.uk.	Encourage all location data to be published using INSPIRE standards (some already required under annex III). Potentially re-use UKLP software components in enduring solution.
Smart Cities	Cities of the future need to be smart and sustainable in terms in terms of managing resource, water and energy use, including waste, minimising impacts on the environment. Two main strands of work in this area being undertaken by BIS and the Technology Strategy Board.	Potential benefits for delivery from the use of UKLP standards and infrastructure.
Street Works	There is extensive activity in this area: • The National Street Gazetteer (NSG) is being used to underpin the Electronic Transfer of Notices for street works; • The National Joint Utilities Group promotes best practice, self regulation and a two-way relationship with Government and other relevant stakeholders; • The National Underground Assets Group (NUAG) acts as a single voice for everyone involved with underground and appropriate associated above ground assets; • Mapping the Underworld (MTU) is a 10 year research programme using a multi-sensor device to locate infrastructure in all ground conditions without the need for excavations; • The VISTA Project is bringing together existing paper and digital records with data from satellite and ground-based positioning systems to create a three-dimensional map of pipes and cables buried underground.	NSG provides a standardised location reference. Explore how this links to the requirements of INSPIRE and what are the benefits that can be derived. Look at how this fits with other standards in the area. Work with the different to establish appropriate data sharing arrangements. Efficiencies realised through reduction in time and cost resulting from reduced duplication, greater sharing and reuse.
Civil Contingencies Secretariat	The Civil Contingencies Secretariat sits in the Cabinet Office and works across a large number of government departments at the central and local level, with a focus on planning incident response as opposed to	The unit has introduced a National Resilience Extranet (NRE) to aid information sharing, providing a common platform and secure network and the ability to share information instantaneously.

Initiative	Description	Connection to UKLP
	prevention / mitigation. The Secretariat ensures plans and capabilities are in place to respond to a variety of disruptions and provide a co-ordinated crisis management response.	However, no common standards are being used, and it does not have a map viewer at present, although they are considering a WMS. The NRE is not mandatory for responders so currently there is around 65% coverage nationally. A new version (NRE2) will be developed in following completion of the current contract in November 2013 and the Programme should explore how it can assist in metadata standardisation, common taxonomies and information sharing mechanisms. The will support better emergency planning at the local level as required under the Civil Contingencies Act 2004. CCS is also planning a pilot between Newport City Council, Gwent Police and South Wales Fire Service which may provide a useful case study that the Programme can draw from.
Wellbeing/3rd Sector	Location information is important for the 3rd sector to operate effectively and work with government for societal and environmental benefit, from informing the management of land and engagement with volunteers and supporters, to identifying the right places and people to work with effectively, and supplying services, scrutiny and insights.	A successful 3rd sector will result in better achievement of the wider objectives of the Programme, and in turn will help in the delivery of the well-being agenda. The Programme should work closely with the 3rd Sector to help them deliver benefits such as: • improving 3rd sector capabilities to better create and share their own data as well as accessing others' data; • improving 3rd Sector access to location data, by removing licence complexity and expense so that internal business use may be made of any public location data by any 3rd Sector organisation; • improving the knowledge of location information of the public and so increasing the knowledge of 3rd Sector volunteers; • improving the effectiveness of the 3rd Sector in delivering public services both themselves and in partnership; • supporting 'Big Society' and 'Transparency' Agendas
EU directives	Various environmental directives require collection of data to monitor conditions and measure improvements resulting from EU environmental policy. The data collection and reporting mechanisms lack consistency but we are seeing this being improved and increasing reference to the use of INSPIRE as a standard approach for sharing location related information. There are important changes in the next three years in certain policy areas where joint planning in relation to INSPIRE at an EU and member state level is required. This affects in particular Air Quality, Floods, the Water Framework Directive and the Reporting Directive. The	UKLP should engage with environmental policy makers and relevant delivery organisations to raise awareness on INSPIRE, lobby the Commission, the European Environment Agency and Eurostat for better integration of their directives and initiatives and generate joint plans for UK implementation in specific areas. The Commission is running a workshop in June 2012 to look at discrepancies between the different directives and determine better alignment. The UK should organise a good presence at the event and should continue lobbying to ensure UK needs are met.

Initiative	Description	Connection to UKLP
	recent review by member states of the Annex III data specifications highlighted various discrepancies between INSPIRE and the thematic directives. It is essential that these are resolved to avoid setting up duplicate publication schemes. The European Statistical Programme for 2013-17 led by Eurostat, proposes the creation of a new overarching framework of statistical information which recognises three groups of statistics: • Business • People's Europe • Agriculture, Geo-spatial and Environment Under the geospatial category, there is direct reference to making use of the INSPIRE infrastructure available, providing regional breakdowns of all statistical data where appropriate and integrating all statistical data wherever relevant to allow spatial analysis.	The European Statistical Programme presents an opportunity to better align statistical, INSPIRE and open data publication across UK government. The Council should review the relationship between statistical activities and INSPIRE as part of its strategic oversight.
Natural Environment	Defra works to protect all aspects of the natural environment which underpins economic prosperity, health and wellbeing: • air • water • biodiversity • land and soil • marine environment	There are a number of key initiatives taking place in Defra in this area. In particular the Programme needs to explore interactions with the Natural Value Programme. Areas of particular focus include: • working with the team undertaking the second phase of the UK National Ecosystem Assessment - due to complete at end of March 2014 • aiding the implementation of the commitments made in the Natural Environment White Paper: 'The Natural Choice' • identifying where the Programme can help facilitate research projects, such as on ecosystem interactions • aiding the implementation of the commitments made in the Water White Paper: 'Water for Life'
Environmental Research	The UK Location User Group is in the process of setting up a sector group to represent the Environmental Research Sector. This includes representatives from the Research Councils, Environment Agency and British Library.	Establish partnerships with the Research Councils to stimulate uptake of location data across the academic and private sectors. Identify opportunities for demonstrating benefits. Coordination role aimed at facilitating collaboration across this sector. Efficiencies realised through reduction in time and cost resulting from reduced duplication, greater sharing and reuse.
Space data (GMES)	GMES services are dedicated to the monitoring and forecasting of the Earth's subsystems. They contribute directly to the monitoring of climate change. GMES services also address emergency response (e.g. in case of natural disaster, technological accidents or humanitarian crises) and security-related issues (e.g.	Policymakers and public authorities, the major users of GMES, will use the information to prepare environmental legislation and policies with a particular focus on Climate Change, monitor their implementation and assess their effects. GMES also supports the critical decisions that need to be made quickly during

Initiative	Description	Connection to UKLP
	maritime surveillance, border control). Users will be provided with information through services dedicated to a systematic monitoring and forecasting of the state of the Earth's subsystems. Six thematic areas are being developed: marine, land, atmosphere, emergency, security and climate change. A land monitoring service, a marine monitoring service and an atmosphere monitoring service contribute directly to the monitoring of climate change and to the assessment of mitigation and adaptation policies. Two additional GMES services address respectively emergency response (e.g. floods, fires, technological accidents, humanitarian aid) and security-related aspects (e.g. maritime surveillance, border control). GMES services are all designed to meet common data and information requirements and have a global dimension.	emergencies, such as when natural or man-made catastrophes and humanitarian crises occur. Based on the GMES services, many other value-added services can be implemented, tailored to more specific public or commercial needs (i.e. forecasting services with a local scope, services including socio-economic). UKLP should be encouraging all data to be published to the INSPIRE standard (some already required under annex III). Some quick wins might be possible to publish data covered under existing contractual arrangements using the UK Space Agency as a publication partner. Further data should be available once the UK sentinels are launched.

APPENDIX G – EXAMPLE CASE STUDIES

The case studies outlined in this Appendix have delivered benefits through the use of location data *without* the advantages provided by the UK Location Programme. They demonstrate the sort of benefits that can be realised by using location data in a smarter way.

Improved Efficiency in Delivering Services

The following case studies demonstrate how smarter use of location data can reduce the cost / increase the efficiency of fulfilling standard day to day responsibilities.

Organisation	Defra
Challenge	In response to public enquiries on FMD, BSE and E.coli, the concept for a new IT system which would draw together existing sources of livestock data to provide the means by which we can identify, analyse and track animal disease-related threats more rapidly, was born.
Solution	The RADAR (Rapid Analysis and Detection of Animal-related Risks) IT system connects to all the major sources of livestock data in Government Departments across Great Britain. It holds up to date information about all major livestock populations (cattle, sheep & goats, pigs and poultry) captured from a range of delivery systems (detailed below). It has developed sophisticated processes and algorithms to de-duplicate information across systems and overcome common data problems to provide the best possible estimate of our livestock populations and their movements at any point in time. It can provide estimates on the number and location of animals in GB, animal movements and information on other statistics such as age ranges, breeds and housing types. The system currently connects to 15 livestock related systems across Great Britain - Cattle Tracing System (CTS), Animal Movements Licencing System (AMLS) of England and Wales, Scottish Animal Movements System (SAMS), GB Poultry Register (GBPR), English, Welsh and Scottish Agricultural Surveys, VLA Farmfile System, Animal Health Disease Control Systems (FMD, CSF, AI), Vetnet, Sam, Defra's Customer and Land Database (CLAD) and the Meat Hygiene Services abattoir system.
Benefits	Quantifiable Benefits to Defra - Total benefits of £2.35 million per annum. 2/3rds of which (£1.65m) is about reduced economic impact of outbreaks, including evidence to find the source of disease, lift movement/export bans sooner and prioritise surveillance activities to predict disease spread and get ahead of the outbreak. £0.6 million in cost reduction of Extraction and Reformatting of Livestock Data from Source and £100k on reduced administration burdens on data collection and on cross compliance.
Applicability to other areas	Applicability to other areas – Anyone can request an output from RADAR – so it is applicable to areas such as human health (Dept of Health), the research community (approx. 20 bulk extracts of data per year).
Further Information	http://archive.defra.gov.uk/foodfarm/farmanimal/diseases/vetsurveillance/radar/

Organisation	The Forestry Commission
Challenge	The Forestry Commission is the organisation responsible for managing and regulating almost 12% of Britain's total land area, and its entire business depends on geographic information. They were looking to develop a GIS to help them to streamline their processes.
Solution	The Forestry Commission directly manages more than one million hectares of publicly-owned land. At the heart of all its operations is the overall stock map, showing how land is used, what types of tree are where and how mature the woodlands are. This stock map enables the Forestry Commission to create an accurate model of how its forests will look in the future, which in turn helps them to plan activities, from felling to planting and path clearing. It means that the woods are accessible to the public, they retain biodiversity, and they remain a source of income, through timber sales. The Forestry Commission now plans activity through GIS, equipping foresters with devices that enable them to record activity – and so constantly update the stock map – and then uses all this information to manage the forests at both a micro and macro level. The information is also made available to the public. On the Forestry Commission website, citizens can enter their nearest town or forest and can find out about forthcoming events, animal habitats, cycle paths, picnic sites and much more. The site links directly to maps of the area, enabling citizens to plan activities, and even view weather forecasts.
Benefits	By placing GIS at the heart of its operations, the Forestry Commission has achieved: • Administrative savings of £1 million per year • A 90 percent reduction in time required to update, forecast and report upon Forestry Commission inventory • A 50 percent time saving for new data capture
Applicability to other areas	
Further Information	http://www.esriuk.com/industries/public_sector/lg_cs_forestry.asp

Organisation	National Forest Company (NFC)
Challenge	A significant problem for biodiversity is the fragmentation of important habitats. The NFC's goal is to see a robust network of interconnected woodlands and other habitats covering 33% of the forest area of 200 square miles. To achieve this it needs to analyse habitat connectivity on a landscape-scale across the whole Forest.
Solution	The NFC developed a GIS for mapping ecological connectivity. Initially habitat blocks had to be hand drawn – a time consuming and error prone process. Following the announcement of the Public Sector Mapping Agreement, which opened up access to a wider range of digital products, the NFC started to use OS MasterMap polygons as the foundation for habitat blocks.
Benefits	This has led to increased speed and accuracy in entering data and allows additional detail to be captured.
Applicability to other areas	This case study demonstrates the efficiencies that can be achieved when digitised data of high quality is used as an input to GI projects.
Further Information	http://www.ordnancesurvey.co.uk/oswebsite/docs/case-studies/national-forest-company-maps-ecological-networks-using-os-mastermap.pdf

Organisation	Welsh Government Planning Department
Challenge	To improve the quality of planning and development control decisions in Wales in relation to flood risk management.
Solution	GIS and spatial data modelling techniques have been used to develop a detailed Technical Advice Note (TAN15) which highlights both areas subject to flood risk and those that have received the benefits of protection. Historically published as PDF documents and made available on CD, a recent intervention by the Corporate GIS project in Wales has allowed the low-cost implementation of online mapping resource for the dissemination of this data.
Benefits	The specific benefits associated with the use of spatial data to improve planning policy are at this stage difficult to estimate. It is reasonable however to project significant downstream benefits for many years to come through the better management of risk of flooding. Some initial benefits analysis on the change to the service delivery technique has revealed an estimated saving of 20 staff hours per week, which is a significant return on the investment need to deliver the application.
Applicability to other areas	• GIS techniques to improve planning decision making; • Rapid application development approaches to online map services

Organisation	Environment Agency (EA)
Challenge	EA has an important regulatory role processing and determining over 20,000 applications for environmental permits a year ranging from septic tank discharges to power stations. They needed to streamline their business processes associated with this activity, to make it more efficient both in time and cost. They insisted that any solution should meet the following criteria: • Minimise environmental risk • Quick and easy to use • Key features can be identified without consulting specialists • Use best information available • Consistent and auditable method • Provide a national view, regardless of user location
Solution	The Easimap for National Permitting project has successfully pulled together protected sites and protected species data held by the Environment Agency into one national screening tool used by our environmental permitting staff. An holistic approach to environmental protection is taken, by screening for nature conservation, landscape and heritage interest alongside other designations, such as nitrate vulnerable zones, groundwater protection zones, and flood risk management zones. Using GIS and federated data sources the Easimap permit screening tool consumes data from a number of different sources, EA for flood risk and existing permits, National Biodiversity Network for species data, Datashare for imagery and Ordnance Survey for base mapping. Using set distances for protected sites and species, the applicant is informed that they must apply for a bespoke permit if the site 'fails' the exemption criteria on location. The implementation of the screening tool has enabled EA to streamline their permitting processes; saving money and staff resource whilst speeding up permit determination for many applicants.
Benefits	Internal • Faster and no internal consultation delay • Greater consistency in approach • Improved data sharing opportunities between geographical areas External • More accurate and informed regulation • Increased confidence in data quality due to regular national data updates • Easier to share EA data with other government bodies and third parties (applicants, consultants, research bodies)
Applicability to other areas	This case study demonstrates the efficiencies that can be achieved when digitised data of high quality from a number of different sources is combined and used as an input to assist in the implementation of regulatory controls.

Organisation	West Midlands Fire Service
Challenge	To deliver benefits of a property-based gazetteer throughout the West Midlands Fire Brigade
Solution	West Midlands Fire Service has recently transformed its IT assets to reduce costs and improve the quality of its service delivery, through the creation of an NLPG-based gazetteer which has been integrated with a replacement Command and Control (C&C) system. Working in house, using open source software, they have developed an innovative, highly functional and cost-effective response to the increasing demands placed on gazetteer software in the modern emergency service. This has seen the creation of a dynamic gazetteer-generator and integrated extract, transform and load tool which can coalesce traditionally disjoint data products by generating bespoke and feature-rich gazetteer software. As a result major advancements in frontline capability are being made.
Benefits	The system has brought operational efficiency gains and is highly cost-effective - attributes that are ideally suited to the challenges facing the modern public sector. - The Brigade is better placed to respond to emergencies. - The whole organisation is focused on a single gazetteer, bringing consistency where it did not previously exist - Considerable data management efficiencies are being delivered by managing all external data from a single point. - Improved user experiences and enhanced analytical capability. - This design allows the Brigade to rapidly absorb new data products in order to respond to changing circumstances, while underpinning a drive towards partnership working and location-based interoperability with other emergency services. - Significant reduction in software costs and avoidance of vendor lock-in by exclusively using open source technology.
Applicability to other areas	Both West Midlands and Staffordshire fire services are currently utilising the system, while two further brigades will soon adopt the technology. Scope for other emergency services to do so as well.

Organisation	Scottish Government
Challenge	The planning system plays a central role in coordinating Scotland's sustainable economic growth. The Scottish Government is committed to improving the planning system by strengthening the involvement of communities, speeding up decisions, and improving the quality and enablement of development.
Solution	The programme delivered a single ePlanning Scotland website for submitting planning applications or appeals anywhere in Scotland. The system was released to partners for testing before the website was launched nationally. The easy-to-use site includes standard forms, the ability to attach supporting documents, online help and a fee calculator. A mechanism has been provided for all planning authorities to receive applications and appeals electronically, providing associated efficiencies for the authority and the public, architects, agents and developers. This project has delivered a technical solution but has also acted as a catalyst for driving business improvements and for removing activities from the processes that add little or no value.
Benefits	ePlanning will result in significant cost savings for councils and applicants, including the development industry. The investment made so far in new technology and services has the potential to release more than £60 million in efficiency savings over the next 10 years, with £16 million to planning authorities and more than £40 million to businesses and other users.
Further Information	http://www.ordnancesurvey.co.uk/oswebsite/docs/case-studies/eplanning-scotland-website.pdf

Organisations	Cardiff Council
Challenge	Cardiff Council regularly conducts district retail surveys and community facility audits in order to create a snapshot of neighbourhoods and analyse the specific services found there. These activities involved a team of officers armed with paper maps and pencils going out and logging each individual service outlet. Some larger surveys could take several officers up to a fortnight to complete and the council wanted to reduce the time and resources involved in future surveys.
Solution	Council officers now use Points of Interest as a core data source to supplement surveys. By using the cross reference to OS mapping data within Points of Interest, officers are able to create new polygon layers of the different types of community or commercial use. This helps in the creation of community mapping documents, making it easier to identify concentrations of a particular sub-sector or identify areas
Benefits	• Data about the ever-changing local retail industry is captured much more quickly. • Staff spend more time analysing the captured data and focus on identifying change. • The council can easily target areas for urban regeneration or diversification of the high street.
Further Information	http://www.ordnancesurvey.co.uk/oswebsite/docs/case-studies/cardiff-city-council-points-of-interest.pdf

One area in which the use of location data has been proving particularly successful in delivering cost savings and improved efficiency is in the route management of waste collection services.

Organisations	Daventry District Council West Suffolk councils Newcastle City Council East Hampshire District and Winchester City Councils Surrey Heath Borough Council
Challenge	Waste management is one of the largest areas of local authority expenditure. With growth in housing and population throughout Britain there is both a challenge and an opportunity to save money by doing this in a more cost effective way.
Solution	Each of the councils listed above has implemented a slightly different solution dependent on their individual objectives. They all revolve around the optimisation of collection routes, vehicle requirements and crew allocation. The analysis is dependent on high quality location data.
Benefits	Daventry District Council has made savings of £325,000 pa West Suffolk councils (Forest Heath and St Edmundsbury) are saving £180,000 pa Newcastle City Council are making savings of £248,000 pa East Hampshire District and Winchester City Councils have identified savings of £1.4m pa Surrey Heath Borough Council has increased the recycling collection rate from 30% to 65%
Applicability to other areas	Each local authority in the United Kingdom has an obligation to manage waste collection. With over 400 of these if an additional 10% could make savings in the region of £300,000 pa this would equate to savings of £12m pa
Further Information	http://www.ordnancesurvey.co.uk/oswebsite/docs/case-studies/daventry-district-council-optimises-waste-collection-with-os-mastermap-itn.pdf http://www.ordnancesurvey.co.uk/oswebsite/docs/case-studies/forest-heath-st-edmundsbury-councils-waste-management-cost-savings.pdf http://www.ordnancesurvey.co.uk/oswebsite/docs/case-studies/newcastle-city-council-waste-management-savings.pdf http://www.ordnancesurvey.co.uk/oswebsite/docs/case-studies/east-hampshire-winchester-city-council-waste-management-cost-savings.pdf http://www.ordnancesurvey.co.uk/oswebsite/docs/case-studies/surrey-heath-borough-council-doubles-recycling-rate.pdf

Although the examples above all relate to waste management the principle of using location data to optimise routes can be applied to many other areas of public services. The following case studies use the same principle to optimise school bus routes.

Organisations	Cardiff Council
Challenge	The Council has a requirement to manage the home to school transport for pupils with special educational needs. In the context of rising costs and with a duty to promote the use of sustainable travel and transport a means of optimising the transport whilst maintaining quality of service was required.
Solution	A solution was built using location data and a route optimisation engine to help route planners to quickly and efficiently assess possible scenarios.
Benefits	Savings in the region of £500k pa from the re-tendering of routes Routes reduced by 1,200 miles per day. Average journey reduced from 14 to 12 miles 40 fewer vehicles required
Applicability to other areas	The obligation to provide school transport applies across the country. This solution could be implemented in other areas allowing similar benefits to be realised.
Further Information	http://www.ordnancesurvey.co.uk/oswebsite/docs/case-studies/cardiff-council-special-educational-needs-routes.pdf

Organisations	East Riding of Yorkshire Council
Challenge	East Riding of Yorkshire Council has responsibility for the school transport requirements for 18 secondary schools across what is a predominantly rural, large geographic area. Large, sparsely populated areas often lead to complex school transportation requirements. The Council commissioned a project to investigate the potential for delivering this service more efficiently.
Solution	A route optimisation solution, underpinned by Ordnance Survey location data was put in place, initially for 2 schools, then rolled out to a further 9 schools.
Benefits	Savings of £336k pa
Applicability to other areas	Similar savings may be anticipated in other large rural areas with complex school transport requirements.
Further Information	http://www.ordnancesurvey.co.uk/oswebsite/docs/case-studies/east-riding-case-study.pdf

In addition to waste management and school bus routes there are other areas where route optimisation supported by location data may prove valuable. For example, Surrey Fire and Rescue have incorporated it into a state of the art dynamic mobilising system designed to speed up the response times to incidents.

Improved Quality of Services

A number of councils have developed web portals with a location mapping functionality as a means of interacting with residents. There are two main objectives of this type of project:

- **To provide information to residents** – in the form of a "Where's My Nearest" service to locate GPs, dentists, post offices etc and also information relating to "What is the impact of my location on me?" for example online applications that

estimate the potential energy savings from fitting solar panels given the property location, roof aspect, temperature forecasts etc

- **To receive information from residents** –allowing citizens to report problems such as abandoned vehicles, beach pollution and fly-tipping.

Organisations	Mole Valley District Council Barrow in Furness Borough Council East Sussex County Council
Challenge	To implement a more cost effective way of engaging with citizens in order to deliver better quality information and to receive timely notification of problems with the authority's infrastructure.
Solution	Mole Valley District Council and Barrow in Furness Borough Council have both implemented a map based solution to deliver information on council and other services to residents. East Sussex County Council has implemented a fault reporting system.
Benefits	Channel shift from telephone to internet for enquiries East Sussex estimate savings of £60,000
Applicability to other areas	This type of solution is relevant to local authorities across the UK and most councils have now implemented a system to inform residents
Further Information	http://www.ordnancesurvey.co.uk/oswebsite/docs/case-studies/mole-valley-district-council-website-traffic-increase.pdf http://www.ordnancesurvey.co.uk/oswebsite/docs/case-studies/barrow-in-furness-council-wheres-my-nearest.pdf http://www.ordnancesurvey.co.uk/oswebsite/docs/case-studies/east-sussex-county-council-map-based-reporting-system.pdf

As well as being used to deliver financial benefits in the form of cost savings, location data can be used as evidence to support policy and decision making. Geographical Information Systems are being used to assist in the planning of the emergency response to potential flood events in a number of areas of the country.

Organisations	Calderdale Council
	Cornwall Council
Challenge	In the event of a flood a quick and effective response requires good quality location information relating to evacuation routes, access points, key public service points and importantly the location of vulnerable people to ensure they can be evacuated if necessary.
Solution	GIS are used to give a visual and analytical view of the properties and people affected to the key staff planning the response.
Benefits	The ability to quickly locate and prioritise vulnerable citizens
	Improved location intelligence for decision making (evacuation routes, access / rendezvous points etc)
Applicability to other areas	This solution is most obviously applicable to other areas of the country where flooding is a known risk, however, the concepts could be harnessed for other types of emergency planning.
Further Information	http://www.ordnancesurvey.co.uk/oswebsite/docs/case-studies/calderdale-council-adult-social-care.pdf
	http://www.ordnancesurvey.co.uk/oswebsite/docs/case-studies/cornwall-success-story.pdf

Location data is being used to help inform decision makers where to best locate drug and alcohol treatment services in Bristol.

Organisations	Avon IM&T Consortium
Challenge	To be able to identify the geographic gaps in drug and alcohol service provision to help with the future planning of treatment centres across Bristol.
Solution	Using a GIS and data provided by the PCT and local authority the consortium was able to calculate the accessibility of local treatment centres and analyse the current provision of services.
Benefits	More accurate planning of drug and alcohol services
	Better value for money and use of resources
Applicability to other areas	This approach can be used not only in relation to drug and alcohol services across other areas of the country, but can also be applied to the location of many other types of service.
Further Information	http://www.ordnancesurvey.co.uk/oswebsite/docs/case-studies/avon-imt-consortium-improving-drug-and-alcohol-treatment-provision-in-bristol.pdf

Bristol is also benefitting from Bristol City Council's initiative to share data relating to land and property assets amongst all public service providers.

Organisation	Bristol City Council
Challenge	To plot all major property assets for the local Councils, PCT, Police, Fire and Ambulance Services on a single GIS layer and make it available through a web-based Geographical Information System. Asset Managers to use the Total Place system to record any opportunities or requirements for property space.
Solution	The property and land assets were mapped using the National Land and Property Gazetteer (NLPG) data, and an 'out of area' Gazetteer was created for address searching within the Total Place web application. They then used the NLPG classifications to provide common property types and provided web mapping to display asset data and log opportunities or requirements for local councils, the emergency services & the NHS. Using the NLPG was the key to linking the asset data for the local authorities, emergency services and NHS in the West of England.
Benefits	- Potential savings of £1.5m p.a. from sharing assets have been identified. Further cashable benefits are expected when current projects have been rolled out. - Much improved working relationships across the public service providers along with shared GIS services. - Partner organisations have improved property asset data by matching it to their Local Land and Property Gazetteers. - Asset scrutiny between organisations has led to shared proposals for use of assets, enabling a clearer focus on service delivery and ongoing integration of working practices between organisations. - Asset Managers and planners are now able to understand and map spatially assets enabling them to plan for future community needs and to rationalise existing portfolios. - Improved services through joined up working between police and courts.
Applicability to other areas	This type of solution is relevant to local authorities across the UK. It also demonstrates the benefits that can be realised when consistent data is shared across a number of organisations.

And where to locate a flu contact centre in Swindon.

Organisations	Swindon Borough Council and Swindon PCT
Challenge	In June 2008, the NHS issued the Pandemic Influenza Preparedness Programme (PIPP). The purpose of this programme is to support PCTs, should there be a flu pandemic in the UK. The project therefore required PCTs to work, through partnerships, with local councils to deliver a local strategy to this disaster recovery programme.
Solution	In response to PIPP, Swindon Borough Council and Swindon Primary Care Trust (PCT) needed to find a suitable location for a flu contact centre. The site had to fulfil many different sets of criteria. Sharing data and using maps and aerial photography, they were able to quickly identify a primary site. The council and PCT could then move on to plan other parts of the flu pandemic programme.
Benefits	Joining different organisations data together quickly and effectively enabled a solution to be reached. Analysing and presenting data geographically helped test which solution worked best. As a result resource was freed up to be diverted onto the other parts of the programme.
Further Information	http://www.local.gov.uk/c/document_library/get_file?uuid=aa6b261e-39c6-42a3-bf6d-885929572052&groupId=10161

Providing Open Access to Data Promotes Reuse and Exploitation

The UK Location Project will deliver easy access to a large number of datasets. It will also promote awareness and help to build the skills required to exploit the data. However, for the ultimate benefits to accrue, people will need to access and use the data. The experience of the British Geological Survey (BGS) is that making data easily available leads to a substantial increase in people accessing and investigating the data.

Organisations	British Geological Survey (BGS)
Challenge	To fulfil their requirements under INSPIRE and the UK Location Project to make location data accessible
Solution	The development of the open access data portal "OpenGeoscience". This makes available geological information including maps, photographs, databases, reports, over a million borehole record scans, downloadable 3-D geological models, smart phone apps, educational resources and software. The information can be used free of charge for non-commercial private study, research and educational activities.
Benefits	It is too early to outline the end benefits arising from this initiative but releasing the records online has resulted in a 20-fold increase in records accessed to 30,000 per month. This increased rate of access shows that if data is made readily available the research communities will endeavour to put it to good use.
Applicability to other areas	The data made available by BGS is a subset of that falling within the UK Location Programme, The increased use of their data, enabled by the OpenGeoscience portal, should be extrapolated to the other UK Location datasets.
Further Information	http://www.ordnancesurvey.co.uk/oswebsite/docs/case-studies/british-geological-survey-launches-opengeoscience-data-portal.pdf

Multiple Benefits Can Be Realised From the Intelligent Use of Good Quality Location Data

United Utilities manages water and sewerage for the north west of England and the electricity supply for 2.2 million properties. It has invested heavily in GIS to help to improve service levels, water quality and business performance. Their infrastructure can be viewed as a "miniature" version of the UK Location Programme, with the same objectives of delivering good quality, interoperable location data for practitioners to exploit

Organisations	United Utilities
Challenge	Records used to be kept as paper, microfilm or on CD-ROM in over 700 plan chests in 65 locations. This meant many hours of work to access the correct data for meeting statutory obligations and to provide inputs to the many business models that make use of location data.
Solution	A web based solution allowing access to all of the datasets. These are managed to ensure they are all up to date and interoperable.
Benefits	United Utilities have statutory obligations to make asset data available to 3rd parties who need to dig up the highways. It is estimated that the new system saves at least £1,000,000 pa in delivering safe dig plans. The modelling engineers build 300-400 models a year, By using intelligent mapping data they produce models faster, more accurately and at a lowe cost.
Applicability to other areas	This demonstrates the value that good quality, easily accessible location data makes to one organisation. The UK Location Programme aims to deliver these benefits throughout the UK public sector and beyond.
Further Information	http://www.agi.org.uk/storage/sigs/suppliers/UnitedUtilities.pdf

It is anticipated that the Location Programme will deliver the same types of benefits for the UK as are being realised by United Utilities.

- Quicker, less costly access to reliable data to fulfill day to day business requirements
- More accurate, better quality data to produce better results
- Interoperable data to allow the combination of datasets from different sources

Other Areas Where Benefits May Be Realised

Increasingly the implementation plans associated with EU directives are becoming more consistent and cross referencing other directives. Many of those that are environmentally focused have a location element, for example, the Water Framework Directive, the Floods Directive and the Air Quality Directive all make reference to INSPIRE. The infrastructure and services that the UK Location Programme is putting into place will facilitate compliance with all of these directives as well as others in the pipeline.

Additional case studies can be found at:

http://www.geoplace.co.uk/geoplace/link.htm?nwid=274

http://www.ordnancesurvey.co.uk/oswebsite/public-sector/case-studies/locator/index.html

http://www.ordnancesurvey.co.uk/oswebsite/public-sector/scotland/case-studies.html

http://www.local.gov.uk/web/guest/geographic-information/-/journal_content/56/10161/2896238/ARTICLE-TEMPLATE

http://www.dfpni.gov.uk/lps/index/gi/gi_consultancy.htm