

Feasibility study to establish
a system for monitoring the
supply and re-use of previously
developed land

The National Assembly for Wales





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Foreword

Land is a precious and finite resource. We are fortunate that so much of Wales, even the countryside adjoining our major urban centres, is of high environmental quality. Our good fortune in this respect reinforces the need to ensure that when development takes place any harm to the environment is kept to a minimum and that the places we build become attractive places to live and work in.

The National Assembly is committed to these principles. They are central to the notion of sustainable development and have been incorporated into planning guidance. One of the most important ways we can achieve a more sustainable pattern of development is by recycling land wherever this is more sustainable than building on green fields. For this reason Local Planning Authorities are encouraged to allow re-use of previously developed land before considering development elsewhere.

Although few would disagree with the principle of building on 'brown fields' rather than green fields, at present we know little about how much previously

developed land there is in Wales, where it is, how much is being generated or how it is being used. There is no easily accessible national data source that would tell us whether or not these sites could play a greater role in our urgent drive towards a more sustainable way of life.

For this reason in December 1999 the National Assembly commissioned Hyder Consulting and Landmark Information Group to explore the options for setting up a Wales-wide system for monitoring the supply of previously developed land and its re-use and to gather the views of a wide range of organisations with an interest in such sites.

This is the report of their findings. It will be of interest to all concerned about how the Welsh urban environment develops over coming decades. The report reaches a number of conclusions and makes several recommendations about the setting up of a national monitoring system for previously developed land and views are now being sought on these recommendations to help the Assembly decide how to proceed.



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Summary

Introduction

The aim of this project was to investigate the feasibility of developing a system for monitoring the supply and re-use of previously developed land (PDL) to support the statutory commitment of the National Assembly for Wales (the Assembly) to sustainable development. Planning Guidance (Wales) Planning Policy (First Revision 1999) encourages the use of previously developed land for all types of development. The study also identified what land use monitoring systems and information technology initiatives were already in place within Wales, and their compatibility with any English initiatives. The project was undertaken through a detailed programme of consultation, research and analysis.

Key Principles

One of the primary requirements of a monitoring system would be a firm and consistent definition of PDL. Until a definition is selected comparison of statistics associated with PDL throughout Wales will not be possible. The system should also effectively integrate other information technology and land use monitoring initiatives in order to achieve maximum ownership amongst stakeholders.

Another key conclusion from the consultation process was that the system should be simple, based on a core of data which will satisfy a defined set of core outputs (primarily of a statistical nature). This will minimise problems associated with Intellectual Property rights. A facility to link related specialist datasets to the core should be included, creating a distributed

database (where data is not retained within a centralised system, but on a number of different servers managed by the various stakeholders). This would provide a far wider possible range of outputs on many specialist subjects. Linking of the datasets would be possible due to the use of Unique Reference Numbers describing each site.

Options

The selection of options will depend on the intended user-groups and final function of the system. In many instances, the choice of one option may influence or determine the selection of other options throughout the process. The key aspects for which there are different options are: System Funding; System Custodian and Data Specification. The key issues associated with these are as follows:

System Funding

- Central funding by the Assembly- This supports rapid decision making and a clear direction, but may alienate other stakeholders.
- Co-operative funding -There would be an increased incentive for success, however stakeholders have diverse agenda, which may conflict.
- Self-funding - Market forces might encourage regular updating of the system, however this is unlikely to work unless the system is franchised to a commercial publisher, and this may not work in Wales alone.

On balance, it is recommended that central funding is the option most likely to deliver a satisfactory system. An annual budget of £100,000 should be sufficient to maintain the system.

Custodianship

- Stakeholder - Although a stakeholder would be aware of the complex issues involved in previously developed land, custodianship by a stakeholder may result in changes to the project to fit their agenda. It may also be an expensive option, and difficult to criticise objectively.
- Commercial - A commercial custodian is likely to provide the appropriate data handling and IT skills to undertake the role. Provided the requirement is tightly specified, and the project well managed, this may be the most cost effective option.
- University - Provided a University department can be treated with the same contractual rigour as would be applied to a commercial host, this would be an acceptable option.

The choice of the custodian must be made by the funder. If central funding is selected, the decision can be made on operational grounds alone. If co-operative funding is the preferred route, the stakeholders will want a say in who the custodian is, as the position will potentially carry power and could be offered as a contribution in kind, in lieu of a financial contribution.

Data specification

- Simple - It is strongly recommended that the data specification be kept as simple as possible on grounds of cost, operational efficiency and utility.

- Complex - A complex data specification that seeks to answer all possible questions is likely to be unsustainable on grounds of both cost and maintainability.
- Intermediate - There may be demands for an intermediate solution, but they should be resisted unless those that demand extra functions also provide the required resources.

The criteria that determine the inclusion of a site in the system will be the most complex aspect of data specification. Strong central control should ensure that this issue is handled decisively and that the criteria for inclusion are applied uniformly, both across Wales, and from year to year.

Recommendations

The main recommendation of the study is that any proposed system be tested out using a pilot study, covering one of the four Welsh voluntary regional planning groupings. This would provide a robust platform for testing assumptions about budgets and the data specification, and would reduce the financial, technical and political risks of the end project.

It is also recommended that the system be internet based to allow free access to the core dataset by all interested parties. Access to the associated linked datasets could be controlled by a password system. Furthermore, it is strongly recommended that custodianship of the system be controlled by the Assembly, but undertaken by an independent body.

1. Introduction

1.1 A legal requirement has been placed on the National Assembly for Wales (the Assembly) to develop a scheme to promote sustainable development, to periodically review it and to assess how effective it has been (Government of Wales Act 1998 s.121). Planning Guidance (Wales) Planning Policy (First Revision 1999) encourages the use of previously developed land for all types of development. Hence, the Assembly is committed to the principle of sustainable development and, as part of this, is keen to ensure that emphasis is placed on the re-use of previously developed land.

1.2 The Assembly wishes to monitor the extent to which its policies for the re-use of previously developed sites for residential, industrial, commercial, infrastructural and other forms of development are being achieved. It has therefore commissioned research to advise on the feasibility of setting up a cost-effective and accurate system to monitor the supply and use of such land in Wales. This document reports on the findings of this research.

Aims of Project

1.3 The aims of the project can be found in Appendix A and are summarised below:

- to find out whether suitable data sources exist which could help establish the supply of previously developed land and its current characteristics
- to establish the ease with which such data are being, and could be kept up-to-date
- to determine whether existing reporting mechanisms could be used to monitor the re-use of previously developed land, or modified to do so
- to determine, if necessary, what new monitoring and data gathering exercises would need to be put in place to monitor the re-use of previously developed land
- to advise on the most efficient and cost-effective approach, and the likely costs of such a system

Methodology

1.4 The project was undertaken through a detailed programme of consultation, research and analysis. The consultation programme divided into three main areas, namely:

- Questionnaires
- Interviews
- Workshops

1.5 The purpose of the consultations was to provide a picture of the current situation in Wales concerning the collection of information on the supply and re-use of previously developed land. A broad spectrum of organisations interested in land use change in Wales were contacted including; The Assembly, local government, government agencies, the commercial sector and voluntary bodies. The list of consultees is presented in Appendix B, and includes the list of those interviewed, and those who returned questionnaires. The attendees of workshops 1 and 2, and the results of discussions, are presented in Appendices C and D, respectively.

1.6 Research into relevant information communication technologies and likely future directions within Geographical Information Systems was also undertaken. Analysis of the results of the research and

the consultation process, allowed the project team to devise a series of options to establish a system for monitoring the supply and re-use of previously developed land (PDL).

2. Main Findings

2.1 The aim of the project was to advise the Assembly on the feasibility of gathering and updating information on the supply of previously developed land in Wales, with details of its current use and characteristics, and in monitoring its subsequent re-use. Each of these aspects of the project aim has been examined by the project team, and the results are presented in this and the following sections.

2.2 From the interviews and workshops it was clear that a prospective system must accommodate four quite different spheres of interest:

- **Sphere One** - the interests of Assembly Ministers, members of the Assembly, and their civil servants who require the answers to questions such as Where? How much? How many?
- **Sphere Two** - the interests of local planning authorities, who want to understand sites in the context of local development, how they sit in relationship to one another and how they fit with Unitary Development Plans. The questions asked at a local level will be different and more detailed than those asked by the Assembly. However, many local authorities already feel they have the information they require to answer such questions.
- **Sphere Three** - the interests of those concerned with the development potential of individual sites. This will include local authority planners and economic development officers, but more particularly potential

developers, landowners and the Welsh Development Agency (WDA). Their focus will be on costs, grants and values, before and after remediation, if remediation is required. These groups also felt that they had most of the answers to these questions, or at least knew where to find them.

- **Sphere Four** - the interest of Assembly Sponsored Public Bodies and community groups asking questions such as 'What does the development of particular sites mean for us in terms of employment or for the flora and fauna?' These groups strongly supported the idea of a system that would provide them with more information, and often made the point that many abandoned industrial sites provided more valuable habitats for species under pressure than "greenfield" sites currently dedicated to agriculture.

2.3 It was clear from discussion at the second workshop that one way of looking at the proposed system is that it will primarily provide better information for those operating at *Spheres One and Four*, enabling a more constructive dialogue with those operating at *Spheres Two and Three*. However, there is no doubt that the proposed system could provide valuable inputs for local planners, property developers, inward investors and other interested parties.

2.4 It was also clear that the proposed system is one among a number of overlapping national and local initiatives,

including the Wales Information Society project, and the Welsh Local Government Association (WLGA) proposals for the management of statistical information. The relationship among these different initiatives and the best ways of exploiting complementary strengths would need to be taken into account at the design stage.

Other findings fell within 5 main themes:

- Theme 1 - Support from consultees
- Theme 2 - Roles of key Stakeholders
- Theme 3 - The planning process
- Theme 4 - Other information / communication technology initiatives and developments
- Theme 5 - Issues of implementation

Theme 1 - Support from consultees

2.5 The principle of an information system to monitor the supply and re-use of previously developed land has won widespread support from all consultees, including Local Authorities (LAs), the development industry and environmental protection groups.

2.6 It is generally considered that a regularly updated database of this kind could help to stimulate interest and action on the opportunities for development or suitable use of previously developed land. However, there exists a wide variation in expectation on what such a system should deliver. Each stakeholder will need to be able to tailor outputs from the systems to meet their own requirements, responding specifically to their own business drivers.

Theme 2 - Roles of key Stakeholders

2.7 Local authority planners will need to

accept a key role in co-ordinating, supplying and interpreting information subject to sufficient resources. With its wide spectrum of interest in land for housing and industry, the Welsh Development Agency (WDA) could have a major role to play in any future system.

2.8 Within the National Assembly for Wales a monitoring system would have an important cross-cutting function, connecting information requirements from several Divisions, including Housing, Planning, the Welsh European Funding Office (WEFO), and Environment (including Sustainable Development).

Theme 3 - The planning process

2.9 Environmental protection groups are concerned that landscape, wildlife, heritage and amenity considerations should be properly recognised in all site assessments and protected by planning policy where appropriate. There is a strong feeling that despite Government pressure to develop on previously developed land, each site must be considered on its own merit and should be subject to normal planning procedures.

Theme 4 - Other information/communication technology initiatives and developments

2.10 Many electronic information initiatives are being developed at local, regional and national levels, which need co-ordination and rationalisation. There is a need to have a system that interacts flexibly with other Welsh initiatives, and can respond to changing policy drivers in Wales. Valuable lessons can be learnt from the English National Land Use Database, which has a commitment to producing a continuously updated picture of land use.

2.11 Ordnance Survey are currently preparing digital data for the UK which will present key features as uniquely referenced polygons to which other data can be associated (Appendix D). The Environment Agency Wales will seek to ensure that its own system for regulating contaminated land is compatible with any system for monitoring previously developed land.

Theme 5 - Issues of implementation

2.12 A rigorous definition of previously developed land and its characteristics will be required to ensure a consistent information base.

2.13 Other key issues for implementation of a monitoring system include: intellectual property rights, data security, confidentiality, quality assurance, functional specification and pricing access. There is a need to minimise transfers of intellectual property into a central system, either by local authorities or other data providers.

Existing Systems

2.14 There are a number of national monitoring systems and locally focused research on monitoring systems currently operating in Wales. These include:

- Welsh Development Agency (WDA) Land use & property database
- Joint Housing Land Availability Studies
- Countryside Council for Wales (CCW) Landmap
- Urban Mines Brownfield sites

Further details of these other systems are presented in Appendix E.

2.15 In addition there are a number of ongoing national Information Technology (IT) and information management initiatives including:

- *Wales Information Society (WIS)*

Programme

This initiative has developed a strategic framework for the transition to the Information Age in Wales. It aims to exploit the benefits of the new information and communication technologies (ICT) to transform the competitiveness of Welsh business, the skills of the Welsh people and the effectiveness of public services in Wales. This is being achieved by:

- stimulating demand for the new technologies, by raising awareness of the benefits and by identifying and demonstrating best practice;
- satisfying the increased demand by developing a strong indigenous ICT/multimedia supply-side industry in Wales;
- enhancing the ICT infrastructure to ensure that there is improved equality of access across the region; and
- developing the institutional capacity needed to handle large-scale ICT programmes

The WIS initiative is now well into a second phase, which involves developing and stimulating a wide range of projects and initiatives aimed at putting the Information Age strategy into effect. WIS is a partner in over 40 ICT initiatives, either directly as the lead organisation (e.g.

the "Wales smE-Business" programme), or indirectly by providing catalyst/match funding to other partners. These projects involve funds of over £12 million.

- *WLGA Statistics management initiative*

This initiative is concerned with the collection of statistics from, and the provision of statistical services to, Local Authorities. In February 2000 a consultation paper was produced, presenting a summary of the current role, weaknesses and future requirements of official statistics in Wales. The report put forward five options as a basis for tackling and improving the processing of statistical information on local government services and activities, ranging from maintaining the current regime, to the establishment of a local government statistics unit, or setting up a central statistics unit (managing Assembly and local government datasets).

The option to establish a discrete statistics unit, which will manage both central and local government data, has been agreed and the unit is currently being set up. It is situated within Syniad, the Improvement Development and Employment Agency for Welsh Local Government.

The Unit's main functions will be:

- to collect, process, interpret and disseminate statistical data on local government services and activities;
- to participate in and promote local government capacity-building on statistical data matters;
- to be an effective ambassador for local authorities and the National Assembly for Wales on statistical

issues;

in accordance with local and central government requirements and priorities.

The Unit will be known as the Local Government Data Unit, Wales and will be going out to consultation on its priorities for the first two years during February and March 2001.

Any system developed to monitor the re-use of PDL will need to take these other systems into account if it is to succeed in its objectives.

Analysis of National Land Use Database (NLUD)

2.16 A study of the NLUD system, and consultation with the consortium members, was undertaken. This was in order to ensure that the valuable experience gained and lessons learned during the development of NLUD could be considered when developing a Welsh system for monitoring the use and re-use of previously developed land.

2.17 NLUD was set up in 1997 jointly by Ordnance Survey (OS), LAs, English Partnerships, DETR and academia in England to collect data on vacant and derelict sites and other previously developed land and buildings that may be available for redevelopment. A main purpose was to test whether a target of 60% of future homes could be built on previously developed sites. Although the exercise revealed the availability of some 30,000 sites, the publication of Phase 1 results was complicated by contractual problems over local authority data.

2.18 A number of problems were identified with the NLUD system, particularly legal issues relating to the problems of data release from LAs to the

NLUD system. In addition, the Phase 1 data specification did not provide for site boundaries to be identified as a polygon, but were identified by a National Grid Reference for the centroid of each site. Another issue is that the original data collected for NLUD has not been updated, and represent a snapshot of rapidly decreasing usefulness. The option suggested within this document, for a Welsh system, addresses all of these issues, so building on the experience gained during the development of NLUD.

2.19 The NLUD Phase 1 exercise was successful in a number of ways, in particular that the majority of the Local Authorities did provide information for about 30,000 previously developed sites throughout England. The system also served as a demonstration or 'dress rehearsal' for Phase 2, now referred to as NLUD Previously Developed Land (PDL), which has been re-launched as on-going exercise to be assimilated by Local Authorities into their own planning process under Planning Policy Guidance Note 3. The new NLUD PDL Data Specification and supporting software package was supplied to all Local Authorities in early October 2000. Local Authorities have been requested to update Phase 1 data and to commence monitoring of all new previously developed land and buildings. NLUD PDL will also include the capture of polygons for all sites. Local Authorities will establish their own local NLUD PDL database and provide an annual return at the end of each financial year to the NLUD

Partnership. For the financial year 2000/01 Local Authorities have been requested to supply returns by end of April 2001. These data will be validated and assembled into a national database by the Partnership to support publication of national statistics, dissemination to governmental bodies and, following completion of a legal agreement with Local Authorities, to third-party users.

2.20 It is evident that some of those interested in data about previously developed land will be looking across regional boundaries to seek data about the whole of mainland Britain. It is intended that the system proposed in this document will be more flexible than the specification currently adopted for NLUD, and it should not inhibit the development of information services covering the whole of the United Kingdom.

2.21 A number of developments and initiatives, including but not confined to: the National Land Information System; Central Information Technology Unit (CITU) & DETR; the Digital National Framework (Ordnance Survey); the National Geospatial Data Framework; and the National Statistical Framework; mean that the context in which the proposed system exists should be far richer and more complex than that existing today.

2.22 Property-related information systems are developing rapidly in both the public and private sectors. This feasibility study, which is based on the best information available today, may look quite dated in



3. Needs and Opportunities

one year's time.

3.1 There are a number of reasons why a system for monitoring the use and re-use of PDL is needed in Wales. One reason was highlighted in section 2, and is that it could improve the provision of information to all levels of stakeholders. Another reason is that it should promote consistency in monitoring PDL throughout Wales, thus increasing the transparency of the development process in general, and the actions of the planning authorities in particular. This increase in transparency, and access to information to Welsh PDL sites, may potentially encourage more inward investment into Wales and assist urban regeneration, but at the very least should provide a clear overview of the Welsh situation with regard to PDL.

3.2 In order for the system to work, it must be appreciated that different stakeholder groups will require different outputs. The outputs that each requires will obviously determine the information which must be fed into the system. However, given the limitations imposed by resources and time, it is considered that the information input into the system should be limited to that which will provide the essential system outputs.

Initial list of outputs

3.3 Sphere One users, who are in one sense paramount if the National Assembly is to fund the development of the System, need to be able to calculate:

- The amount of previously used land (and vacant premises) available for redevelopment in each local authority;
- The rate at which previously used land is recycled in each authority;
- The geographical distribution of

vacant previously used land, (and vacant premises) in each authority;

- The national distribution of vacant previously used land; and
- The rate at which previously used land is becoming vacant, locally & nationally.

3.4 This requires that the system should reflect both status and process. Status tells us that a site is or has been previously used and is, potentially, available for redevelopment. Process tells us what has happened to a site after it has been incorporated into the system. There are two key sources of tracking data. The first would be an annual return from the local authority, noting any significant changes in the status of sites included in the system, such as the beginning and completion of construction and development. The second would be to track planning applications in respect of any of the sites. Planning application data could be provided by the local authorities, or possibly from one of the commercial suppliers of planning application data. The latter may be the more cost-effective option and would remove a quite onerous obligation from the local authorities.

Core System

3.5 In order to achieve the above listed outputs, the database must contain the following core information:

- identifiers (unique reference numbers) (further information on Geographical Referencing issues are presented in Appendix E),
- locations (map co-ordinates),
- extents (the site boundaries),
- status flags (e.g. planning allocation,

planning applications),

- links (direct links to other websites and contact information)
- hooks (enabling other bodies to link back into the system).

These data are sufficient to answer the Sphere One questions (Where? ... How much? ... How many?) and to derive statistical tables.

Specialist Information

3.6 The system envisaged therefore is not a centralised collection of data providing answers to every question that might be asked by any enquirer concerning the site. The core dataset would be strictly limited in the information it provides on each site. However, it would contain sufficient pointers (metadata) to enable enquirers to obtain the specialised information they need for their particular purpose. This information may be open to all or restricted to a particular subset of enquirers and may be free or available only on payment of a fee. The data would, therefore, be distributed across a number of sources. This would help to deal with the problems of

cost, intellectual property rights, currency and consistency, that would inevitably arise if the attempt were made to build a centralised dataset.

3.7 Each of the stakeholders might use the system and enrich its content in different ways. Provided all were using the same Unique Reference Numbers (URN), there would be many opportunities to pool data or to create derived data sets. Although community groups may initially see themselves as being merely consumers of information provided by the System, they could quickly become indispensable providers of information on the habitats of threatened species or on the existence of historic relics, on secondary and tertiary uses of vacant sites, or on the social or environmental pressures likely to be created by proposed developments.

3.8 The main source of content enrichment would be linked datasets created by special interest groups pursuing their own agenda. A highly centralised database would require an editor/censor balancing the demands of users against the

4. Options for a Monitoring System

resources available to satisfy them. In a distributed model, there is virtually no limit to the potential outputs of the system. Everyone would be free to build their own associated datasets, linked by geography and the unique identifiers. This would shape the response to anyone seeking to change the data specification in order to produce an output that meets his or her own specialised agenda. They would be free to produce their own customised application that produces the outputs they require.

3.9 It is important to note that the National Assembly would not carry any editorial responsibility or legal liability for information held by other stakeholders with respect to the sites in the system. This would be made clear to users, through an appropriate health warning, when they were leaving the core dataset and linking instead to associated datasets. It would, however, be impossible to prevent anyone from building an associated data set, but it would be up to the custodian to provide a link from the core data to associated data, and clear criteria could be set. For example, it could be decided that a link would be provided only if the provider of associated data followed the metadata guidelines of the National Geospatial Data Framework, giving details of the provenance of the dataset, its ownership and maintenance cycle. This would have the effect of encouraging good data maintenance across the system.

Extended list of outputs

3.10 The distributed database described above would enable access to a far wider range of outputs than the list described in section 3.1. By combining the statistics with data from other sources, it should be

possible to calculate:

1. The relationship between brownfield and greenfield development in each authority; this would be done by looking at development on sites included in the monitoring system as a percentage of the overall development in the authority in question.
2. The allocation of previously developed land among different types of re-development; this would be achieved through tracking changes to

the sites in the system from year to year, taking planning applications into account.

3. The level of demand for previously developed land, nationally and locally; this would be achieved through tracking changes to the sites in the system from year to year, taking planning applications into account.
4. The impact of new investment on local demand for previously developed land; consideration of fluctuations in allocations and demand (see 2&3 above) against some major inward investment or other regeneration scheme.
5. The relative ability of the infrastructure (transport, energy, water, schools etc) to support redevelopment of previously used land for new purposes (e.g. housing); with a better understanding of the distribution and location of PDL, it should be easier for planning authorities (local and national) to build urban capacity models.

4.1 The options listed below are devised using previous experience of building information systems, the feedback received during the consultation process, and building on the experience of NLUD in England. The key issues of the options are summarised in Table 1 (Page.21)

4.2 The approach outlined is market-driven, minimalist in the effort required from any one stakeholder, and largely self-funding. It also depends on a variety of players to add value to the core dataset, building on the existing strengths and normal activities of each of the stakeholders.

4.3 However, it needs to be recognised that the "options" are interdependent and need to be considered sequentially in building a system. Even within the recommended solution, a number of choices will have to be made. The various options which make up the monitoring system are as follows:

- System funding: The issue of funding is one of the most significant choices/options, as this will determine a number of other issues.
- Access to the System
- Data Specification
- Data Collection
- Custodianship
- Data Maintenance

System funding

Start-up funding

4.4 The method of funding selected will influence decisions about all the other options, either directly or indirectly. For example, if it were decided to franchise the

system to a commercial publisher, it would be essential to involve the chosen publisher in making some of the choices on data specification and maintenance. If Local Authorities or other stakeholders were to be asked to fund the system, the specification would have to be negotiated with the funding bodies.

4.5 To begin with, at least, it is thought that the system should be centrally funded, with the emphasis on controlling costs rather than on raising revenues. Only once a complete, consistent and current system has been established, can alternative funding mechanisms be considered.

4.6 Consultations and the results of the two workshops indicates that any system should be Internet based and free at the point of access, allowing the widest possible usage, with dynamic feedback from users. This implies a degree of "central funding". Given the balance of interest and the balance of resources, it is unlikely that a workable system could be achieved if it were to seek funding across the wide spectrum of stakeholders and potential users. Internet access to the system raises the issue of intellectual property rights and confidentiality. This is discussed in greater detail in section 4.14-4.16.

Funding of maintenance

4.7 Once a funding mechanism has been agreed, it would be prudent to set a sustainable budget for maintaining the system, as the financial resources available will constrain many other decisions. A satisfactory outcome is more likely if the specification is built around a target budget rather than if the specification is undertaken without any financial constraint and then curtailed due to lack of funds. It is suggested that an annual budget of

£100,000 should be sufficient to maintain the system (see below).

Estimated yearly costs

4.8 Ahead of a pilot project, and associated decisions on the parameters of the system, it is extremely hard to make accurate estimates of likely costs, as the range of possible spends is too wide. Two fixed annual costs will be data collection and the tracking of planning applications and other indicators affecting the future use of sites in the system .

4.9 It is estimated that there are unlikely to be more than 3,000 sites in Wales, 10% of the English total (estimated using a Landmark database of old industrial sites in Wales); so the total annual cost of data collection should be no more than £60,000 (£10 per site for the annual survey and £10 per site for tracking). With system management (custodianship) costing around £30-40,000 this gives a total of up to £100,000 a year. These figures assume that either a university department or a commercial bureau will maintain the database. The costs would be substantially higher if the National Assembly decided to resource and staff a dedicated department solely to build and maintain the system described in this study. The significant costs are almost all associated with the costs of skilled personnel as recent advances in technology, including the widespread uptake of the internet, and improved PC based mapping systems such as Map-Info and Arc-View have greatly reduced the costs associated with any data collection and mapping exercise.

Custodian costs

4.10 It is thought that the cost of custodianship could be covered by commercial sponsorship. Undoubtedly,

there would be set up costs, but these could be controlled through a tight specification process, and risks minimised through a well-planned and managed pilot (see section 5). The sponsor, however, would be likely to want some return on the investment. This might consist simply of being able to use the data in other ways, or it might involve marketing opportunities. This option should be explored further.

Other funding options

4.11 Other funding options need to be considered, including co-operative funding. However, more time may be spent securing and negotiating the contributions of stakeholders than could be justified by the amount of money collected. At this stage of the process, it is not thought that this is a feasible option.

4.12 It is also possible that the System might become self-funding through usage payments. The only way this would be possible would be through enrichment of the data content. However, enriching the data content carries its own cost implications, and would raise all the problems of Intellectual Property Rights that led to the conclusion that the pooled Intellectual Property (IP) should be minimised, reducing to an absolute minimum the IP in the core dataset.

4.13 Franchising the management and exploitation of the database to a commercial publisher would be an option if it covered England and Wales. However, it is doubtful if Wales on its own represents a commercial opportunity for an information service provider. If NLUD decided to take this road, then the scope of the opportunity and the potential to work with the English in this enterprise would be worth exploring. It is understood however,

that NLUD is a long way from moving in that direction.

Access to the System

4.14 It is recommended that access to the core dataset should be via the Internet, open to all, and free. If access to the core system is to be open, then that decision underlines the need for a distributed dataset, allowing confidential information to be held in a secure location with appropriately controlled access. This modular approach would also enable a mixed economy, with some free information and some specialist information which is charged for.

4.15 One potential issue that could arise early would be potential users, who want a copy of the whole core dataset to integrate into their database. This is a potential source of revenue, and a decision would have to be taken on pricing. There is no scientific way of determining the "right price", as it depends on a number of variables, including the frequency of updates and whether the data might be passed on in its entirety to others. This is an issue for the National Assembly to consider with the chosen Custodian, who would be responsible for maintaining these third-party relationships, which in turn would carry cost and resourcing implications.

4.16 If the data specification is widened, it is essential that IP Problems are addressed. These would be exacerbated by widening access to the data. Confidentiality problems, would also be increased with lower barriers to access.

Data Specification

Control of data specification

4.17 The specification process would need

to be tightly controlled. Last minute, high-level demands to enrich the data content of the NLUD system has complicated the task and made it less likely that a sustainable system will emerge. The system should include sufficient content to deliver the required outputs, which is why the outputs need to be fixed before considering the Data Specification. Any requests to change the Data Specification should be clearly linked to those required outputs.

4.18 The most important decision concerns the criteria for including or excluding a site from the system, which would depend on the definition of PDL selected. How sites enter and leave the system would largely determine its usefulness. If a pilot system is built, this would be one of the most important issues to be tested. The issue of vacant premises was highlighted a number of times during the consultation process. It was suggested that these are included within the definition of PDL.

4.19 The overall aim would be to provide a maintainable system, not a snapshot. This means that when deciding on the data specification, needs rather than wants and future maintenance costs should be considered .

4.20 These decisions cannot easily be made in the abstract. It is suggested that a robust data specification is one of the principal benefits that would emerge from a pilot system. For example, different size thresholds could be tested for the inclusion or exclusion of vacant premises. The need for prototyping is a strong argument in favour of central funding through a pilot process (section 5).

Suggested PDL definition / Criteria

4.21 The complexity of this issue is well set out in a paper published in the Journal of Environmental Planning and Management, 43(1), 49-69, 2000, "The Definition of Brownfield", by Sandra Alker, Victoria Joy, Peter Roberts and Nathan Smith. This short paper emphasises the way in which changing policy priorities can affect the outcome of any land use survey. The same word, "brownfield" for example, is used to mean different things by different people in different contexts. The authors, all of whom have been associated with the Urban Mines project, advocate a broad and inclusive definition, which is sufficiently neutral to command widespread use, and sufficiently flexible and inclusive to accommodate changing policy priorities:

4.22 "A brownfield site is any land or premises which has previously been used or developed and is not currently fully in use, although it may be partially occupied or utilised. It may also be vacant, derelict or contaminated. Therefore a brownfield site is not available for immediate use without intervention."

4.23 It is recommended that the principles of a broad, flexible and inclusive definition, as demonstrated in the definition described, are adhered to, rather than

necessarily adopting this particular definition. Consultations and testing of proposed definitions amongst stakeholders could occur before the instigation of a pilot system.

4.24 It is essential that the resulting dataset is consistent, complete and current. If one of these characteristics cannot be achieved, the data specification is flawed. The data specification could be confined to:

- A Unique Reference Number for each site (Appendix E);
- Date on which information has been collected; and its provenance (i.e. who collected and checked the data);
- The location of the site. This should be defined by the site's boundaries registered on Ordnance Survey's large-scale digital mapping and the name of the Electoral Division(s) within which it lies. The latter information is important for determining the site's eligibility for some types of grant aid;
- The name of the planning authority responsible for the site;
- The area of the site and the apparent developable area;
- A simple classification of the site:

Urban	Rural
Derelict	Vacant
Commercial	Partially used
Residential	Industrial
Buildings	No Buildings

- Where there are buildings, the Unique Reference Numbers from

Ordnance Survey's National Buildings Dataset should be provided;

- Changes in the classification of the site and the reasons for the change.

4.25 This is simply an example of the scope of the data specification envisaged, not a definitive recommendation. Most of this information could be generated automatically by the data collection software (section 4.28). The only intervention by the operator would be to decide what part(s) of the site were developable, and to classify the site according to 'the rules'. The 'rules' for application of the specification are not defined within this report, as they would be determined by policy ruling at the time of specification. It is recommended, from an operational point of view, that they should be kept simple.

Data collection

4.26 The most significant issue surrounding data collection would be clear and consistent rules for bringing a site into the system. These rules need to be set centrally, or local variations will arise. Equally, there need to be clear and consistent rules for indicating that the site is no longer available for development. This should occur when the site has actually been re-developed and construction is underway. The record should be retained, (so that the history of a site/area can be monitored) with its unique number and with the date on which its status was changed.

4.27 If the data specification is over elaborate, the following problems could arise: it could be interpreted differently by different local authorities (or even by different data collectors in the same authority); it would require the involvement of (probably scarce and

expensive) professionally qualified staff; and it would be impossible to balance benefits and obligations. The best way to develop a robust and workable data specification would be to test several variants in a pilot project (section 5).

Data Collection by LAs

4.28 The process of data collection would involve the local authorities, who would hold most, if not all, the required data in their planning departments. However, resources would be required to carry out this process. It is estimated that, with appropriate software tools, provided free of charge to Local Authorities, the cost of data collection and the annual review can be constrained to £10 per site.

4.29 The conclusion of the NLUD consortium that LAs are best placed to collect the data and to be responsible for entering sites into the System is likely to be as appropriate in Wales as in England. In England, this role has been supported by employing firms of Chartered Surveyors with local knowledge to review the data collected by the local authorities, and to comment on its quality (it should be noted however, that this option requires a relatively simple data specification).

4.30 The experience of the English NLUD system indicates that careful management can greatly mitigate the resource 'burden', just as poor management of the process can add to the load. It is thought that there would be substantial benefits to local authorities if everyone concerned with the supply and re-use of previously developed land (the stakeholders) is using the same reference system and using common terms to discuss the issues that surround changing land use and evolving development priorities.

Technical Support to LAs

4.31 Each local authority needs to be supplied with the software required to undertake the data collection. This should include both direct entry by LA staff on site, or importation of data from a LA Geographic Information System (GIS). The data collection tool could be provided in one of two ways: either a data collection tool is procured centrally and provided to each LA; or system suppliers are invited to provide an appropriate data collection tool within their general product offerings. The data collection tool must be compatible with each of the different GIS systems used by the Welsh LAs.

Future Research

4.32 Provision needs to be made for providing technical support to those involved in data collection. This should be provided by the Custodian of the System (see below). Given the amount of data that

is already collected in local authorities concerning vacant land, (and given the experience with NLUD, where the data specification was much more complex), it is thought that the initial data collection should involve no more than ten person days (excluding training and prior discussion), provided the nominated person receives the support and co-operation of colleagues. It is likely that the annual update would require no more than five person days.

Funding of data collection

4.33 Under this model, the Local Authority would be paid for the number of sites entered onto the system and the number of sites removed. The payment should cover the basic cost of data collection, perhaps £10 per site. However, although Welsh LAs are not paid to undertake other data gathering exercises and English Local Authorities were not paid

Table 1: Summary of Options

	Option A	Option B	Option C
Funding	Central funding	Co-operative funding	Self-funding
Comments	Supports rapid decision-making and a clear direction. May alienate other stakeholders.	Increased incentive for success but stakeholders have diverse agendas, and might all pull in different directions.	Market forces may encourage regular updating of system, but unlikely to work unless system is franchised to a commercial publisher, and this may not be viable in Wales alone.

It is recommended that Central funding is the option most likely to deliver a satisfactory system, certainly at the pilot stage, and probably through the initial roll-out. There will be many more opportunities for controlling costs than for expanding revenues, and the key to cost-effectiveness will be a tight specification. Care will have to be taken to keep the other stakeholders on board.

Custodian	Stakeholder	University	Commercial
Comments	Although a stakeholder would be aware of the complex issues involved in PDL, there are several dangers here. 1. The project could be skewed to fit the agenda of the stakeholder involved. 2. It could be an expensive option. 3. Could be perceived as prioritising own objectives.	Provided a University department can be treated with the same contractual rigour, as would be applied to a commercial host, then this is an acceptable option.	Provided, the requirement is tightly specified and the project well managed, this may be the most cost effective option.

This is the funder's decision. If the central funding option has been selected, the decision can be made on operational grounds alone. If co-operative funding is the preferred route, then the stakeholders will want a say in selecting the custodian, as the position will potentially carry power, and could be offered as a contribution in kind, in lieu of a financial contribution. Likewise, a commercial publisher would almost certainly wish also to be the custodian of the system.

Data Spec.	Simple	Complex	Intermediate
Comments	One of the strongest recommendations is that the data specification be kept as simple as possible, on grounds of cost, operational efficiency and utility.	Provides answers to the great majority of possible queries from stakeholders. However, a complex data spec that seeks to answer all possible questions is likely to be unsustainable on grounds of both cost and maintainability.	There may be demands for an intermediate solution which provides answers to most questions from stakeholders, but they should be resisted unless those that demand extra functionality also provide the required resources.

The trickiest issue concerns the criteria that determine the inclusion of a site in the system. Strong central control should ensure that this issue is handled decisively, and that the criteria for inclusion are applied uniformly, both across Wales and from year to year.

5. A Pilot System

5.1 Many of the central decisions that have to be taken, concerning long term funding, custodianship and the data specification, are best considered in the context of a pilot system, covering one of the four Welsh voluntary regional planning groupings. The duration of the pilot study might be 6-12 months, with costs in the range of £30-60,000, depending on its scope. The main differences between the pilot system and a full-scale system would be:

1. Access to the system might be limited by password to those directly involved (across all the stakeholder groups); and
2. Decisions about custodianship and data specification would be provisional and subject to change at the conclusion of the pilot; and
3. No provision would be made for on-going maintenance of the pilot; and
4. The geographical extent of the system would be limited.

5.2 Benefits flowing from the pilot system would include:

1. A prototype that could be tested and criticised by potential users; and
2. A robust platform for testing assumptions about budgets and the data specification; and
3. A basis for securing the commitment of stakeholders to a national system; and
4. Confidence that the scaled up system would deliver the expected benefits; and
5. Reduction to almost zero of all the risks associated with projects of this kind (i.e. financial and technical); and
6. Different definitions of PDL could be tested during the pilot study, and problems/issues with each identified.

5.3 The cost of the pilot would depend on how it was managed, but it is suggested that whoever manages the pilot should also be responsible for custodianship of the pilot system, as splitting these functions would unnecessarily add to the cost of the exercise.

6. Conclusions and Recommendations

1. There are a number of interdependent options that need to be considered in building a system and it is important that the process of specification follows a structured path in order to produce a sustainable and integrated solution.
2. A pilot scheme covering one of the Welsh planning regions would minimise the risks associated with designing any new system and provide an opportunity for the stakeholders to test the idea in practice and to modify the design where necessary. It is recommended that the pilot scheme should be managed by a small steering group.
3. If the system is to meet the requirements and expectations of the stakeholders, it is essential to secure the widest possible participation, and the pilot project would provide another opportunity to publicise the initiative and secure buy-in. Evaluation of the pilot project should include direct input from users and further workshops at which outstanding issues can be debated.
4. The system should be distributed and not centralised, with the core database containing identifiers (unique reference numbers), locations (map co-ordinates), extents (the site boundaries), status flags (e.g. planning allocation), links (direct links to other websites and contact information) and hooks (enabling other bodies to link back into the system).
5. The System should be Internet based and free at the point of access, allowing the widest possible usage, with dynamic feedback from users. This implies a degree of central funding.
6. Custodianship of the system should be controlled by the National Assembly for Wales, but undertaken by an independent body. The actual costs of custodianship (as opposed to data collection) could be covered by sponsorship.
7. The study identified a number of other projects, national and local, that would overlap with the proposed system. If the above recommendations are followed, inter-working with other projects should be facilitated. However, it is essential that the progress and evolution of these other complementary projects is monitored and taken into account.

Appendix A - Project Specification

A Feasibility Study to Establish A System for Monitoring the Supply and Re-use of Previously Developed Land

Research Specification

The National Assembly for Wales wishes to monitor the extent to which its policies for the re-use of sites for residential, industrial, commercial, infrastructural and other forms of development are being achieved. To this end, it is commissioning research to advise on the feasibility of setting up a cost-effective and accurate system to monitor the supply and use of such land in Wales.

A legal requirement has been placed on the National Assembly to develop a scheme to promote sustainable development, to periodically review it and to assess how effective it has been (Government of Wales Act 1998 s.121). Hence, the National Assembly is committed to the principle of sustainable development and, as part of this, is keen to ensure that best use is made of brownfield sites. In general, using such sites in preference to undeveloped land contributes more to the regeneration of existing urban areas and has a lesser effect on transport demands. (The general principle of sustainable development is outlined in Planning Guidance (Wales): Planning Policy para. 4).

There are many kinds of previously developed sites. They include land lying vacant following demolition or vacation of buildings, land subject to mineral extraction or dumping which has now ceased and transport arteries which have fallen into disuse, but currently there is no agreed definition of 'previously developed land'.

The National Assembly collects some information on site developments such as

housing completions and the availability of residential land but there are no consistent, detailed Wales-wide data on the supply of previously developed land nor the degree to which this is contributing to land take by residential and other forms of development. The setting of appropriate targets and monitoring is therefore not possible.

In England, a National Land Use Database has been developed to establish a baseline position on the potential supply of brownfield sites. Land Use Change Statistics, based on information supplied by Ordnance Survey and used by DETR for more than a decade, are intended to provide a monitoring mechanism, but this work does not cover Wales, Scotland or Northern Ireland.

Aims and Objectives

The aim of the project is to advise the National Assembly on the feasibility of gathering and updating information on the supply of previously developed land throughout Wales, with details of its current use and characteristics, and in monitoring its subsequent re-use.

At a minimum such a monitoring system must be able to distinguish between re-use for residential, industrial and commercial, and infrastructural development. It is also important that small sites be included in the system and that the potential for compatibility with the English National Land Use Database system be examined.

Appendix B - List of Consultees

MEETINGS

Ordnance Survey
NLUD
National Assembly for Wales
Welsh Development Agency
Environment Agency Wales
Cardiff County Council
Newport County Borough Council
Pembrokeshire County Council
Blaenau Gwent CBC & Urban Mines
City & County of Swansea
Countryside Council for Wales
Neath-Port Talbot County Borough
Council
Vale of Glamorgan Council
Welsh Local Government Association
Carmarthenshire County Council
Environmental Groups
Torfaen County Borough Council
Powys County Council
Wrexham County Borough Council
Flintshire County Council
Gwynedd County Council
Isle of Anglesey County Council
Sustrans Cycling Consultant
Rhondda Housing Association

QUESTIONNAIRES

Conwy County Borough Council
Eurostat, European Commission
Groundwork Bridgend
Merthyr Tydfil County Borough Council
The Housebuilders Federation
Groundwork Wrexham
RSPB
Denbighshire County Council
British Geological Survey
Wales Tourist Board
Groundwork, Merthyr & Rhondda
Cynon Taff
Caerphilly County Borough Council
Lovell Partnerships

Appendix C

Workshop 1 - 03/03/2000

Attendees (including project Team)

Delegate	Organisation	Workshop Discussion Group	Role
Dennis Canney	Blaenau Gwent County Borough Council	B	
Mike Cuddy	Senior Planning Manager Land Division Welsh Development Agency	A	
Keith Davies	Countryside Council for Wales	C	
Adrian Dolecki	PB Kennedy and Donkin Ltd	C	
John Edwards	Vice- Chairman Campaign for the Protection of Rural Wales	B	
Graham Fry	Principal Planning Officer (Policy) Newport County Borough Council	B	
Steve Gill	Head of Strategic Planning and Information Powys County Council	B	Group Chair
Peter Harding	Housing & Community Renewal Division The National Assembly for Wales	A	
Andrew Harrison	School of Geographical Sciences University of Bristol	C	Group chair
Darren Hendley	Cardiff County Council	C	
Mike Hollingsworth	Land Division Welsh Development Agency	A	Group chair
Graham King	Hyder Consulting Limited		Project Team
Heather Kitts	Hyder Consulting Limited	B	Project Team Rapporteur
Alan Leonard	Urban and Rural Development Division The National Assembly for Wales	C	
Gavin Lewis	City & County of Swansea	B	

Nicola Martin	Hyder Consulting Limited	A	Project Team Rapporteur
Jonathan Matthews	Land Manager South Wales Area Office Bovis Homes Limited - South Wales	A	
Nick Mills	City & County of Swansea	A	
Christopher Roper	Chief Executive Officer Landmark Information Group Ltd		Project Team
Helen Taylor	Hyder Consulting Limited	C	Project Team Rapporteur
Ian Williams	Hyder Consulting Limited	A	
Gareth Williams	House Builders Federation	B	

Workshop 1 - Summary of Events

Workshop 1 was held at Hyder's Penarth office on 3rd March 2000. Following registration, delegates were officially welcomed to the event by Peter Harding, Head of the Social Inclusion Branch in the Housing and Community Renewal Division of the National Assembly for Wales. This was followed by a brief presentation by Graham King, Hyder Project Director. Mr King outlined the current situation with regard to land use data in Wales, the aims of this study, and the research and consultation that the project team had undertaken thus far.

Mr King was followed by Christopher Roper, Director of Landmark Information Group Ltd who outlined the "Questions to be addressed by this study". During the presentation, Mr Roper addressed some of the key technical, technological administrative issues associated with the developing a monitoring system for the supply and re-use of previously developed land.

Delegates were then divided into three groups. Each group discussed a specific questions relating to a different aspect of the study. The discussions were each chaired by a designated delegate, with minutes taken by a member of the project team. The discussions continued for approximately one hour, after which there was a break for lunch. During lunch, a representative of the NLUD team gave a demonstration of the internet based English National Land Use Database.

After lunch a feedback session chaired by Graham King was held, at which each of the chairmen of the three breakout groups provided a synopsis of the discussions. There was an opportunity for questions and discussion following each of the group chairmen. This was followed by a brief summary of the day's findings from Christopher Roper, and a look to the future direction of the project.

Workshop 1

Summary of Feedback session, following Breakout

Groups Discussions

Group A

Aims and Purposes of a Monitoring System

Discussion Group A, restricted discussion to consideration of issues associated with previously developed land in urban areas, and in the urban fringe. The following points were highlighted during discussions:

What key purposes should the system serve?

- A time series of data / information which is continuously updated as some information can change very rapidly. A 'snapshot' updated at long intervals would not be particularly useful.
- Information describing a site and some detail of its surroundings e.g. type of access, whether it is surrounded by small/large businesses, residential areas etc, would be of benefit.

Who would use the system?

- The information should be, if possible, universally available (this may not be appropriate for sensitive information).
- The information on previously developed land should be used by the LAs in compiling their Unitary Development Plans, along with other background information land value.
- The use of this system by NGOs and

statutory or non-statutory consultees in the planning process should be encouraged, to prevent new constraints being discovered halfway through the development process.

What user requirements have to be met?

- A standard definition and interpretation for PDL and other data is urgently required, Within this context however, the importance of local knowledge should be recognised.
- A monitoring system should be viewed in terms of facilitating the creation/ development of "Sustainable Urban Communities" and should not encourage allocation of sites for high value uses, simply because they may require high costs to get ready for development.
- Development value of a site is frequently increased when aggregated with neighbouring parcels of land. It would be useful if this facility could be included within this system.

Would different user groups require different outputs and what would they be?

- Information is required which can be presented in aggregated form (for the

policy makers such as the Assembly), and in disaggregate form (for developers, private and public).

What data links to other information might be desirable?

- Local Authorities should begin to undertake development appraisal to consider whether a site can be developed for the planned type of development it was originally allocated for (allocation may have originally occurred a number of years ago). This information could be linked to the monitoring system.
- Group A expressed concerns regarding percentage targets for development on previously developed land. The prime concern should be the development of long-term sustainable communities.

General Comments

There appears to be at present an over-emphasis on data collection in general. All decisions must be based on partial information, so it is necessary to sharpen the existing planning policy process and develop systems for dealing with brownfield sites/ previously developed land.

Questions

There was a query regarding whether the inclusion of information from Development Appraisals into the system might "add value" to the data in the system, whereas the system is not intended to contain judgements on the data. It was suggested that the data should be as value-free as

possible, but where value assumptions were applied, these should be indicated.

A delegate stressed that a monitoring system should be used to inform the planning process, not to assess the strategies set out in the UDP. A member of Group A stated that with regard to production of UDPs, the data within the system should not yield strategies, but feed into strategies.

It was suggested that the process of updating the information within the system could be a mammoth task. However, if specific information for sites was updated as it changed, the process would be made much easier. Some site information remains fairly constant (such as contamination), whereas other information changes frequently (e.g. land price). Pointers within the system to indicate which information may be out of date, would still be useful, as some older information may well still be relevant.

It was suggested that a development appraisal should be carried out for each site, providing background information that others can interpret as they may. However, this assumed that all sites will be developed, which reflected the potential urban bias of the system. Comments that a development appraisal would still need to be undertaken to determine whether development should go ahead were also raised.

It was suggested that the study undertaken by the WDA in Newport could be used as a model throughout the whole of Wales. Undertaking a development appraisal at

Group B

the outset, would be likely to save time

SOURCES	USERS
LAs	Assembly
WDA	Cadw
OS	Investors
Housebuilders	Developers
Coal Authorities	Archaeology
BGS	Public
other minerals	Employers
MOD	RICS
Conservation	Legal
Utilities	Commerce
Landowners	

and money at a later date.

Data Sources

Clarifying the users of the information (those providing input/ using output/ otherwise affected) within a potential system, will help to determine the aims and objectives of the system. If all of these bodies have a full participating role, then all are involved in the information loop.

DATA

What data is already available? Existing information should be drawn together so as to not 're-invent the wheel'. It would

not be essential to put all the information on one server, as it could be a gateway site to send people to the correct website/other place to find the correct information.

Data already available

- Development plans
- Land Availability
- Contaminated Land
- Geological
- Mineral Sites
- Land Registry
- District Valuer

Group B suggests that any Welsh system devised does a similar job to the NLUD system in England. They suggest that the mapping of brownfield sites is only stage 1, leading to the categorisation of all existing land uses. The information contained within such a system should be as objective, transparent, and as free from political influence as possible.

NLUD Principles

- Explain whole process
- Build on what exists
- Involve all parties
- Keep it simple
- No value judgements
- Agree minimum standards
- Integrate partner processes
- Costs / Resources / Training

It was suggested also that we should build on what already exists, as LAs do not have the resources for site evaluation etc. If the system is to be achievable, and keep to a given timescale, the information included should be kept simple, and meet minimum requirements. Cost, resources and training should also be kept in mind at all times.

Other Data Issues

- Need for National co-ordination
- External data feeds into NLUD
- National Forum
 - Definitions - Aims/Objectives
 - Data - format/specification
 - Quality
 - User's views
 - Technical - especially maintenance
 - Ownership / Intellectual property
 - Monitoring / PIs/Value

It was proposed that a National forum get together to discuss data and definitions. There are many specific Welsh perspectives and needs which must be considered when arriving at a definition. Technical issues will need to be considered, but are less important than ensuring the data is fit-for-use, and value-for-money.

It was suggested that individual data-sets reside with their owners, thus solving intellectual property rights. If any public information is included, there should not be a problem with IPR, although there may be a concern regarding mis-representation of

Group C

data. With a dynamic data set, monitoring should not be an issue, as it should be updated due to operational needs of the dataholders.

Some form of Performance Indicator would also be required.

Questions

A query was raised that the concept of 'fitness-for-use' implied a future use for the land, which has implications on what data you require. A delegate responded that issues such as potential site development comes late in the process after all land uses have been categorised.

NLUD was said not to be a stand alone system. All constraints from other organisations are visible through the same GIS system, including all UDPs and regional planning guidance if spatially represented. People should then have all the information necessary to make judgements.

It was suggested that the first thing that is needed to be defined is what sort of sites the system is interested in (size etc). This system should be the start of a total land use map, and geared for that purpose, not for political uses.

A comment was made that local groups may have a level of local knowledge that is not contained even within the LAs, and that these should also be included for the purposes of transparency. There are many other departments in LAs other than planning who may have useful data and data requirements.

Delivery Systems

Information into the System

The information on PDL is in the form of a rapidly changing cycle. Strategic information is required, but also information is required at different stages, for different users to support different uses. At one stage factual information will be needed, at another stage, judgement information. PDL can be vacant, derelict, in need of treatment. The information contained within the system needs to reflect different stages of the cycle.

A system is needed that is simple, but which meets the needs of the whole cycle.

Do we develop a tailor-made system, or adapt an existing one?

During discussions, Group C had agreed that an existing system should be adapted.

What systems are appropriate for adaptation?

- Local Authority: these systems serve internal purposes well, but they may not be able to effectively combine different LAs information. There may be issues of consistency and completeness.
- Private Sector: the private sector are experienced at integrating data sets. They frequently act as a '1-stop-shop' adding value to data/information (adding site history etc).
- NLUD: This is based primarily on the LA system. An advantage is that it gets detailed site information from the LAs which couldn't have been obtained from the private sector.

There is a need to develop a LA/private sector hybrid system. Standards need to be developed regarding defining PDL, and also for sharing information.

What the data is to be used for also needs

Workshop 2 - 24/05/2000

Attendees (including Project Team)

to be considered. One of the problems is that the more people are included, the more data requirements there are. Therefore there is a need to identify key drivers for the system, which can be added to at a later date. In England these are embodied by 2 key members:			
<ul style="list-style-type: none"> • DETR who require a consistent picture to inform policy • Private sector who need to know a subset of information about how land can be redeveloped 			
Access of Information			
The most convenient way to access information would be to go to a single location. It would be possible to have a single central information repository (where the custodian would need to go back to, or get information from, a network of sources).			
Funding and Custodian			
Such a system requires money for requirements such as proactive data collection to fill in gaps in data. LAs have access to data but it is sometimes patchy. Where data is valuable (e.g. in the South East where land is at a premium), the cost of collecting the information is justified. So, if further data collection is being considered, this will cost money. Re-engineering of existing systems to better present what data is available will also cost.			
There are a number of funding models:			
<ul style="list-style-type: none"> • Private company: A private company provide the data via a 'data service access engine'. This would increase revenues for LA data, so that the private company would be able to make a charge whenever this data was accessed. • CCW model: In the Landmap project, where LAs provided information for the Landmap database, CCW provided 50% of the funding, which was matched by LAs (as money, or staff time). • Agency model eg DVLA type funding • Assembly provide funds and act as custodian 			
Questions & Comments			
It was suggested that a PDL system could be integrated into other existing systems such as Landmap. The PDL system would not make policy decisions, but, like Landmap, would inform decisions. Landmap started off as collecting and evaluating information on landscape and coming up with recommendations.			
It was commented that the DETR is very keen to share information and feedback with this,			

and similar investigations. In England, the land re-use study is slotted into an existing land use system. The NLUD system may be linked, by use of OS structured data, to land registry and MAFF data. Products are currently being devised for use throughout the UK. These may include the use of satellite information to provide backgrounds to databases.			



Delegate	Organisation	Workshop Discussion Group	Role
Julian Anderson	Housing and Community Renewal Division	C	
Tom Billingham	The National Assembly for Wales Hyder Consulting Limited	A	Project Team Rapporteur
John Butcher	Westbury Homes Holdings Ltd	B	
Michael Buxton	Town Planner Bovis Homes Limited, South West Region	C	
Dennis Canney	Blaenau Gwent County Borough Council	B	
Jane Carpenter	Wilson Homes Southern Ltd	A	
Charles Coombs	Sustainable Development team	D	
Andrew Crompton	The National Assembly for Wales Persimmon Homes	B	
Mike Cuddy	Senior Planning Manager Land Division	A	

Workshop 2 - Summary of Events

Development Agency	Welsh		Renewal Division
Adrian Dolecki Donkin Ltd	PB Kennedy and C	The National Assembly for Wales	
John Edwards D	Vice- Chairman	Mike Harmer Community Project	Housing and
Protection of	Campaign for the		Renewal Division
	Rural Wales	Manager	
Graham Evans Officer Group Chair	Chief Planning D	Assembly for Wales National	The National
Borough Council	Wrexham County	Assembly	
Simon Farmer Inspectorate Agency	Planning D	for Wales	
Graham Fry Officer (Policy)	Principal Planning C	Andrew Harrison Geographical Sciences Group Chair	School of C
Borough Council	Newport County		University of Bristol
Steve Gill D	Head of Strategic	Nicola Hawkeswood TrustB	Gwent Wildlife
Information	Planning and	Alan Hooper Department	Research Fellow, A
Council	Powys County	Regional Planning	of City and
Peter Harding Community	Housing and D	Cardiff	University of
		Glyn Jones	Director National

Workshop 2

Summary of Results of Discussions of Breakout Groups Groups A & B

Brownfield	A	Rapporteur	
Mines Ltd	Sites Project Urban	Emma Plunkett Dillon	Council for British Archaeology
Margaret Lewis Assistant	Senior Planning D Rhondda Cynon	Cath Ranson	Royal Town C
Taff C.B.C.	Planning Dept	Christopher Roper	Chief Executive Officer
Sioned Lewis Community	Housing and Renewal Division The National	Project Team	Landmark Information Group Ltd
Assembly for Wales		Henry Small	Housing Statistician C
Richard Lewis Caerphilly	Groundwork B	Directorate	Statistical
Martin Lewis Holdings Ltd	Westbury Homes D	Assembly for Wales	The National
Gill Lock Limited Project Team	Hyder Consulting	Harold Symonds	Robert Hitchins A
Adrian Lovegrove C	Ordnance Survey	Helen Taylor Limited Project Team	Hyder Consulting C
Nick Mills Swansea Group Chair	City & County of A	Rapporteur	
Andrew Muir Beazer Homes	Land Director, A	Ian Thomas	Welsh Local Government Association C
Darren Parker B	Chestertons	Ian Williams Limited Project Team	Hyder Consulting B
Matthew Pickard Limited Project Team	Hyder Consulting D	Rapporteur	

Steve Williams
Division
Development Agency
Division

Land Reclamation
B
Welsh
South Wales

Aydin Zorlutuna
Groundwork

Gareth Williams
Federation
Chair

House Builders
B

Aberdare
A

Groups C & D

Workshop 2 was held at Hyder's St Mellons conference centre on 24th May 2000. Following registration, delegates were officially welcomed to the event by Dr Mike Harmer, Housing and Community Renewal Division of the National Assembly for Wales. This was followed by a presentation by Christopher Roper, Director of Landmark Information Group Ltd, entitled "Options for a monitoring system". In this presentation, Mr Roper outlined the various options, relating to issues of funding, custodianship, and technical detail, which could be combined to develop and establish a monitoring system for the supply and re-use of PDL in Wales.

Mr Roper was followed by a presentation from Mike Cuddy, of the Welsh Development Agency (WDA) entitled "The role of the WDA" in which he outlined some of the existing initiatives and responsibilities of the WDA, and also its potential future role in developing a land re-use monitoring system.

The final presentation of the morning, "The future of spatial data" was given by Adrian Lovegrove of Ordnance Survey. Here the technological advances in mapping and the identification of sites using a polygon system were outlined.

Following Mr Lovegrove's presentation, the delegates were divided into four separate groups. Each group discussed specific questions relating to one of two different aspects of the study.

- Subject 1 - The type of information needed to carry forward the development of a previously

developed site (using a fictional case study as an example).

- Subject 2 - The types of statistical outputs required from the system, and also the practicalities of operating the system.

The discussions were each chaired by a designated delegate, and minutes taken by a member of the project team. The discussions continued for approximately 1.5 hours, after which there was a break for lunch.

After lunch a feedback session was held at which each of the chairmen of the four breakout groups provided a synopsis of the discussions. There was an opportunity for questions and discussion following each of the group chairmen. The day was concluded with thanks to all participants, and an outline of the next stages of the project.

What information would be of value in the identification of the case study sites as a suitable site for re-development?

Which are essential, and which are useful?

The essential information contained within the system will depend on the target audience. If the system is targeted at the Assembly, summary site information, sufficient to carry out statistical analysis only (such as site details, boundaries, planning status), would be required. If the system is targeted at developers, the same core information would be essential, but it should also include other information, such as statutory designations, site history, and buildings present or cleared. It was suggested that a small core of essential information be held within the system, and links to additional information, such as contact points, or links to separate databases, be provided for the non-core information such as H&S, ecological, flooding and archaeological issues. Alternatively, this could take the form of a tiered system, with information on non-essential issues be held on different tiers within the system. If particular data was being regularly sought, then this could be added to the system.

Who could provide information?

Information could be provided by a range of organisations ranging from LAs, EAW, Wildlife Trusts and the British Archaeological Council. Concern was expressed that duplication of information

may occur, as LAs have already devoted significant resources to assimilating much of the above information. It was suggested that although anyone should be able to provide data to the system, a co-ordinator would be required to control information to and from the system.

How up to date does information have to be?

It was stressed that the information kept on the system would need to be kept up to date, (the date that information was last modified should be noted), and changes should be made in 'real time', although it was suggested that provision of resources to keep data up-to-date may be a problem. It was also suggested that the information be collected by LAs, who would then pass this to the system custodian for entry into the system. The importance of verification of the data was also stressed.

Would you be willing to pay for this data?

Some difference of opinion existed regarding who should pay for the system. Some were of the opinion that developers would not pay for the information as they would undertake their own surveys. Others suggested however, that as developers currently pay for some information, if the information was available in an integrated package from a single source, developers may be prepared to pay. This would only apply however if the data were current and up to date.

Who should run and maintain this system, and

Appendix D - Geographical Referencing

how would you see it being accessed by the

users?

It was suggested that either a national organisation, such as Assembly (probably not WDA due to vested interests), or a commercial organisation, maintain the system. LAs were not thought to be appropriate as there would be unlikely to be a continuity of approach between LAs.

The preferred method of access to the system was the internet, and that initially it should begin as a simple system with links or hooks to more information and with options for it to evolve over time. A simple system would be more likely to be updated and maintained efficiently providing useful statistics for monitoring PDL.

What outputs are required from the model, in order to develop and monitor policies on the use of previously developed land?

Prior to collecting data for the system a consistent set of definitions is required. Currently definitions are political, and may be different between regions, boroughs etc. It was stated that it is possible that the DETR definitions may be made legal, with separate rural and urban definitions.

The output from the system should be at a number of levels

- National
- Regional
- Local
- Site

If the site level data is present, this can then be aggregated up to the other levels, including ward, LA, Assembly constituency. It could also be aggregated to non-standard areas (e.g. for housebuilders with regional offices).

It was suggested that the system should include under-utilised areas in addition to PDL

What information would be required to be input into the model to provide the above outputs?

The data contained within the model should be at a site level, giving specific information. It was suggested that a core of data, with links to other datasets would be useful, with links developing over time. The core data should be easy to collect and update. Basic information should include:

- Site reference/area
- Site details
- Planning details
- links/flags to other information

Some existing systems do not contain all data, but provide links to the original custodian, which both refer to the site by a unique identifier. 'Flags' and links can link databases. However, linking databases, and bringing in main, and sub custodians of data (i.e. some data which is not under control of main custodian) brings up issues of quality and verification.

It was suggested that some of the core information would be already contained within UDPs, and other databases, which could 'feed' the system, although not all UDPs are digital, and there may also be problems with the range of different GIS systems used. Suggested additional useful information included, H&S, infrastructure services, flooding, coal authority reports and aerial photos. This information could be linked to a produced report.

How often would the system need to be updated to make the outputs from the system of use?

It was commented that the frequency of updating will have an impact on the value/quality of data-sets. There was a suggestion that data update should occur at a minimum of an annual cycle for urban areas, and every 3 years for rural areas. However, suggestions were also made that the updating of the system should be a dynamic, continual process, although there may be lags in the system if changes go unnoticed. There may also be problems of

standardisation if other data storing partners (those whose databases are linked to the main/core system) do not update at the same rate.

The National Assembly for Wales require that the model must differentiate between re-use for residential, industrial, commercial and infrastructure development. How can this best be achieved? Should historical information be held on the system, if so, how long?

Defining sites as residential, commercial etc may be a problem, as sites are often suited to mixed use. Sites often become ear-

marked for a particular type of development, but it would be better to keep options open. There are also additional categories that could be noted such as social spaces, recreation and under-utilised space. The way the system is updated will depend on the definition used, particularly as the Assembly require that the model must differentiate between re-use for industrial, residential, commercial etc.

In NLUD, a new record is created for a site when the planning status changes, so that historical data is retained. It was suggested that tracking of a site through the planning process should stick to the criteria in the local plan. Historical information would

Appendix E - Existing Welsh Monitoring and Information Systems

need to be retained within the system indefinitely.

It was suggested that a central unit or quango would be required to act on behalf of the LAs to address issues of payment for resources and intellectual property rights. There is a political dimension to the WDA acting this role. It was suggested that the LAs which are likely to provide most of the data would not utilise the system, making it unstable. However benefits to the LAs would take other forms such as getting a site into use, and saving time for staff.

How should the system operate:

- a) *who should be the custodian?*
- b) *how should it be accessed? (Internet, intranet, updateable CDROM)*

Internet access to the system was preferred, although an intranet route, with subscription rates was also suggested. If subscribers are to pay for the information, a hierarchical system allowing certain subscribers free access would be required. It was thought that the selection of a Custodian should be mutually agreed.

Who should pay for it? (data input, maintenance and update etc.)

In order to charge for information the market value would need to be assessed. The Assembly could initially provide core funding, but the system would later become self-funding. It was stressed that the only way that developers will pay for

this information is if it is current, and if it is easier to obtain than by other methods.

In England the provision of info to NLUD is statutory (mentioned in PPG3), and DETR and the LAs have provided the resources. Concerns were expressed that if the Assembly fund the system, frequent updating may not be a priority, and the system would rapidly become a snapshot.

Geographical Frameworks

One of the most significant decisions facing users of Geographic Information in the United Kingdom is the geographical framework into which they will insert their data, whether an area is to be represented by a single point, or as an area (polygon) with defined boundaries. The framework selected will depend on the use to which the map is to be put. If the objective is to show a town on a small scale map, then a point or symbol with a label is sufficient. If, however, the map was to indicate the electoral divisions of Cardiff, then polygons would be required.

Recent Ordnance Survey Developments

The issue of geographical frameworks is particularly topical because Ordnance Survey are currently re-organising its digital mapping. Until now, this has been simply a digital representation of a paper map, where a line is a line, whether it is the wall of a house, a hedge or the bank of a river. In future, Ordnance Survey's central production database will be known as the Digital National Framework (DNF) and it will be made up of millions of polygons, rather than millions of lines. Building outlines (polygons) will be held as a National Buildings Dataset, each with its own Unique Reference Number (URN), but every polygon (field, road segment, pond or pavement) will have its own URN or, in the language of the DNF, a Topographic Object Identifier (TOID). The DNF and its derivations will undoubtedly make it much easier to hold information relating to past, present and future land use, and have direct relevance to any thinking about a system to monitor the supply and re-use of previously developed land.

Geographical References

The DNF responds directly to the inadequacy of existing Ordnance Survey products for this kind of purpose, a problem already faced by the NLUD team in England. However, even when polygons and their associated TOIDS have been defined, still remains with the problem of locating a polygon on a smaller scale map (e.g. a 1:250,000 road atlas). There are basically two ways of providing a geographical reference:

- direct : the two best known forms are the National Grid Reference, used on all OS maps, and Latitude and Longitude, which are universally used for marine navigation.
- indirect. Town and district names, road numbers, and references to the subject's own orientation (Left/Right) are all forms of indirect referencing.

A great deal of geographical information is held as lists of postal addresses, organised by postcode. For many administrative purposes, this is sufficient, however, most brownfield sites and many vacant buildings lack postal addresses so this method is not suitable. The BS7666 standard, which uses postal addresses for location fixing was used within NLUD Phase 1, but this option has now been abandoned for Phase 2. NLUD's promoters have concluded that the sites should be defined as polygons (tracing site boundaries) on Ordnance Survey's large-scale Digital mapping. This is not difficult and undoubtedly essential for further investigation of the site itself.

Block-based Geographic Frameworks

Planners (nationally and locally) may also need to consider the distribution and

concentration of sites and their relationship to the local infrastructure (transport, education, leisure, employment). This is likely to require smaller scale mapping. One proposal currently under consideration by the Ordnance Survey would involve adding another polygon type to the Digital National Framework. This would give a URN to every block of land completely enclosed by the intersection of three or more streets (railways and rivers might also act as block boundaries). The blocks would be smaller in densely developed urban areas and much larger in rural areas. The creation of a block-based map of Wales may well be a viable approach to the information-management problems associated with land-use mapping. However, it will be worth consulting with the English NLUD team to consider the best approach.

Alternatives to Block-based Geographic Frameworks

There are a number of alternatives to the system described above already in operation, which include the following:

- The Improvement and Development Agency (IDeA) for local government, a dependency of the DETR, is building a National Land and Property Gazetteer to be compliant with BS7666. There are a number of potential problems associated with this project, including: the time it is going to take to build this ambitious dataset (years rather than months); the methodology adopted, which may meet the requirements of individual authorities, but are unlikely to be

much help in building national datasets; and the lack of information concerning its future maintenance, which is regarded as crucial to an exercise that would aim to provide future policy makers with valid information on changes in demand for land across Wales.

- Location information may already be held by Local Authorities, however, they may not approach the issues in the same way, and have not all reached the same level of sophistication in their use of Geographical Information Systems. One problem with tying a national dataset to an administrative geography is that administrative boundaries may change, and at that point all time-dependent data series either require major re-engineering (generally expensive) or become invalid.

It is worth considering the establishment of a national geographic framework for the whole of Wales. This is a matter being considered both by Welsh Development Agency's Wales Information Society project and the Welsh Local Government Association, which are briefly described in Appendices F and G respectively. This is a viable option, and not necessarily unduly costly, but it is only worth considering if it is adopted by the Assembly to support a variety of initiatives.

Advantages to block-based geographic systems

There are two advantages to using a block-based geographic system.

- They are relatively stable, compared to postal, administrative or electoral boundaries, and it is easy to describe new blocks as descendants of old blocks. This allows changes in land use to be tracked over time, in a way that is quite impossible with administrative or postal units.
- Their boundaries are features on the ground that are recorded by Ordnance Survey on maps of different scales. In this they differ