Western Development Commission Submission to the Department of Environment, Heritage and Local Government on the Irish Spatial Data Infrastructure Consultation Document

2nd July 2004

Introduction
The Western Development Commission (WDC) welcomes this opportunity to submit comments on the Irish Spatial Data Infrastructure Consultation Document.
Spatial data are a key resource in the work of the WDC. As an organisation required to *foster and encourage economic and social development in the Western Region[1]*, spatial data inform both the nature and level of disadvantage. In addition, the availability of quality spatial data can help inform recommendations and policy amendments.

The WDC is both a data user and data provider although the latter is a very limited role[2]. Our submission is based primarily on the WDC as a data user. Where there is some comment on the WDC as a data provider it will be indicated as such.

The WDC will only comment on those specific subsections where it has an opinion. The structure of the WDC comments will correspond with the structure of the web document covering sections 1 through to 15 as outlined below. These comments should therefore be read in conjunction with the Questions/Issues provided.

1. Major Topics to be Dealt with

1.2 *Do you feel that any of these broad topic areas are of particular importance? Why?*
The WDC believes that consultation is of particular importance. The more comprehensive the consultation process, the more likely all key topics will be covered. In addition, the WDC believes it is imperative that the ISDI framework is designed to meet the needs of the users from the outset. Focusing on user needs initially will help limit errors and weaknesses in the framework, which may, in the longer-term, prove expensive to rectify.

2. Vision & Principles

2.1, 2.2, 2.5
Are the vision and principles suitable? Are they sufficiently clear? If they require alteration what changes should be made?
The broad vision for the ISDI, as outlined, seems satisfactory, however some of the proposed principles are ambiguous. The first three principles outlined possibly require some alteration.

(1)For example; *Spatial data should be collected once.*
It would be the view of the WDC that data should be collected repeatedly as, spatial characteristics (particularly, but not only man-made characteristics), by their very nature change over time. This is currently the practice with Census data for example.

(2)The second principle outlined is essentially aspirational and while the seamless integration of data may be achievable in many cases, given the wide

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[1] Western Development Commission Act, 1998, S8.1.
[2] One of the functions of the WDC is to operate the €32million Western Investment Fund which provides risk capital by way of equity and loans on a commercial basis to projects and businesses in the Western Region.

range and complexity of data sources and methodologies, particularly historical data, it should be accepted that it unlikely to be fully achievable.

(3) *Spatial data needed for good governance at all levels should be abundant and available under conditions that place minimal or no restraints on its extensive use.*
The WDC believes this to be a very important principle but it should not be at the expense of the privacy of the individual and data anonymity. The WDC feels that these issues are sufficiently important to be articulated within this principle[3].

The WDC believes that the quality of data is critical and must be considered the ultimate, overarching principle. In maintaining data of a high standard and quality, there may be tradeoffs, whereby the ability to combine with other data sources is constrained or restricted. There may be occasions where this is considered the 'price' of quality data.

3. Spatial Area of Coverage

3.1   *Do you agree that the ISDI should focus on both the land and sea areas?*
Yes, the WDC appreciates the value of collecting and collating data from both land and sea areas.

3.2   *Should land or sea areas be prioritised?*
The WDC believes that if either land or sea areas are to be prioritised than data related to land should be the priority. The WDC would also be anxious to ensure that all the offshore islands are included.

4. User Needs

4.1   *Who are likely to be the main users of the ISDI and what do you consider to be their specific needs?*
The main users of the ISDI will be determined by the content and subject matter of the data as well as its quality; however it is likely that these will be the current users of the data, for example policymakers, government agencies, researchers etc. Increasingly, as the delivery of spatial data becomes more sophisticated, it is likely that members of the general public will become more significant users.

4.2   *What are your own organisation's needs in relation to spatial data and how might these be satisfied?*
From a WDC point of view <u>all</u> of our work is based on a spatial analysis. Much of our work is based on a spatial regional analysis, comparing the economic and social characteristics of the Western Region with those nationally. Increasingly our work also involves sub-regional analysis of, for example, ED areas, villages, towns or transport corridors.

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[3] This issue of privacy is discussed in more detail in Section 11.3.

The WDC needs spatial data to inform its research and policy analysis. These data should be collated at the lowest geographical level possible, allowing aggregation upwards. Of utmost importance is that the data are quality data, updated at regular intervals. In addition the data should be

- accurate
- robust
- meaningful
- trend data
- current.

5. Overall Structure of the System

5.1 *What are your views on an appropriate model for the ISDI?*
From the brief description given of the two systems, the distributed system seems preferable for several reasons.

- Under the distributed system, the databases are physically stored and maintained in different organisations and at different locations. Apart from providing increased physical security, the data providers would retain responsibility for their data and could be regarded as the data custodians for their data. The WDC believes that the databases should reside with those organisations which 'own' them in the sense of having created and developed them. The accumulated knowledge and experience associated with this process is invaluable and should not be lost.

- Access, 'downloadability' and ease of data manipulation are important considerations in choosing a system. Under the distributed model some form of hub or internet portal is required. Which type of integration system is chosen is important. On the one hand, it should be quite simple and straightforward allowing those without a great deal of expertise to access basic data. On the other hand, many organisations and professionals will require access to more complex data sets, some of which may require more complex data manipulation.

5.2 *What constraints could there be for your organisation in adopting either of the 'extreme' models set out above?*
The WDC would be concerned that access to the distributed system could limit use to technically more proficient people and organisations and consequently education and training provision becomes a key issue.

As a (limited) data provider, the WDC would also prefer the distributed model. It is important that whichever model is chosen, further consultation will be undertaken to ensure compatibility. This consultation should also identify the training and education requirements of the new system from the point of view of both data provider and data user.

5.3 *Are there security difficulties that could arise from the different models?*

Yes, under the distributed system, because the databases are physically stored and maintained in different organisations and at different locations they are likely to be more physically secure than if they were to be located on the same site. The damage associated with either fire or theft is likely to be minimised if the data are stored at separate locations. In addition, under a system which is centrally controlled (the Warehouse model), both authority and responsibility is concentrated with one organisation. This raises potentially more security risks than under the distributed model where control and responsibility resides at the local level.

6. Standards

6.2 *Are there other issues to which standards should apply?*
The WDC feels it is important that uniform standards apply to as much data as possible, thereby allowing maximum confidence in and use of the data. In this regard it would be important to provide as much additional information on the data as possible, such as the detail of the data source and methodology employed. Examples include information on questionnaire design, survey coverage, sampling frame and any weights applied etc. This additional supplementary information can inform the data user and help determine the most appropriate data sets for their needs.

6.3 *Are there particular types of data which should on a priority basis be collected, transformed etc in accordance with these standards?*
The WDC believes that all data should conform to agreed universal standards. On a practical level however, the process of standardisation will take time and on this basis the WDC accepts that some data sources will be collected and transformed in accordance with these standards before other data sources. It seems logical that spatial and reference data[4] should be the priorities for the standardisation process as these data form the basis for the geographical referencing of other data. Following this the most commonly used basic demographic and economic and social data should be standardised.

6.5 *What body should be responsible for determining standards in the Irish context?*
It is important that within Ireland the organisation responsible for determining standards should be an independent authority which is not directly involved in collecting or collating data. Historically, the National Standards Authority of Ireland (NSAI) has been responsible for implementing standards within Ireland and has much experience in this area. However, it would be important to recognise that much expertise is located within other organisations and this should also be accessed and utilised. One way of mobilising this expertise could be the formation of an Expert Group composed of particular individuals with expertise in this area. The work of this group could then feed into the NSAI.

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[4] Spatial data refers to data which have been linked to a point, area or volume in space. Reference data refers to maps or remotely sensed images against which other data are 'referenced' so as to show geographical position. As defined under Section 7, Data Issues.

7. Data Issues

7.2   *What forms of data should be regarded as Core Data?*
Core data as defined in the ISDI framework document *are priority spatial data which in the ISDI should be maintained to the highest standard and be made widely and easily available.* The WDC accepts the examples of core data as provided and believes that the data examples 1 through to 12 are particularly important. These constitute important physical reference points and are relatively fixed.

In relation to the specific work of the WDC, the core data examples of 14 (land cover) and 16 (Development Plans) through to 21 (Selected public facilities data) are particularly important. Following this, the choice of core data depends on the user and purpose of the data. For example, in social and economic research, population data are very important, in and of themselves and as a base for a lot of derived variables e.g. age and gender distributions and per capita calculations.

7.3   *What are the priority thematic areas in which special effort should be made to get spatial data organised?*
Priority thematic areas from a WDC point of view, are economic and social characteristics and their spatial distributions. The WDC would like to see a lot of additional data included, for example, income levels enabling the analysis of the spatial distribution of poverty, economic activity, employment, education levels and health characteristics etc.

It is important to ensure these data are organised properly as these characteristics change much more frequently than geographic data. Additional attention to these data may be required because responsibility for the collection and collation of these data (economic and social data) are spread across many different organisations.

7.4-7.6 *What are the constraints which would limit your organisation adequately organising its data holdings?*
What additional resources would be needed to adequately organise your data?
What are the priority data in your organisation which should be adequately organised?
The WDC has no significant data holdings. The WDC does operate the Western Investment Fund and some of the data generated (level, type and location of investment) would need to be organised effectively. The constraints which would limit the WDC in organising its data holdings are time (human resources), money and system specific training. Provision for additional resources would be required in order for the WDC to effectively meet any requirements.

8. Small Areas Framework

8.1   *Have you any suggestions regarding principles or guidelines which should underpin a small areas framework of atomic areas?*
The WDC feels that a key guideline which should underpin a small areas framework of atomic areas is that of smallest scale. Where possible the lowest level on the spatial hierarchy should be chosen to ensure data quality, robustness and small area analysis. At the same time it is accepted that in relation to survey data, the smaller scale may be subject to sampling error and compromise the quality of the data.

8.2   *Have you any comments on the six level basic hierarchy?*
The WDC has several comments on the six level basic hierarchy detailed below.

- The WDC believes that there should be an additional category, 'Counties' located after Local Authority areas and before Regions. This is because some local authority areas are subdivisions of counties, for example, Tipperary (Tipperary NR + Tipperary SR LA areas) and Dublin, which contains four local authority areas.

- The category 'Regions' needs more clarity in relation to what is implied here. There should be two categories to allow for regions at the NUTS II and NUTS III levels[5].

- The WDC acknowledges that for some types of data, some flexibility in the small areas framework and the basic level hierarchy is required, as in the example provided of the water catchment areas. However the flexibility required by the data providers should be limited and not compromise data quality and standards. For example, currently there are no set criteria on what geographical territory 'The West' constitutes, with different organisations including different counties.[6] Different organisations define it according to their needs (the data provider) rather than to suit the needs of the data user. As discussed in Section 1.2, the ISDI should give consideration to user needs in the first instance.

9. Organisational Issues

9.1   *What kind of organisation should have overall responsibility?*
The WDC believes that there are a series of specific functions and responsibilities associated with the ISDI. There are discrete functions associated with different data sources and types, attribute data, geographical

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[5] There are two NUTS II regions, The Border, Midlands and Western Region and The Eastern and Southern Region. The NUTS III regions are the constituent regions of NUTS II, for example, the three NUTS III regions of the Border, Midland and Western Regions comprise the total BMW NUTS II.
[6] For example 'The West' as defined by the Higher Education Authority is different to that defined by the regional authorities .The HEA includes counties Galway and Mayo, whereas the West Regional Authority includes county Roscommon also.

referencing etc. For example historically the function of maintaining and developing core reference data has been under the OSI.

However there is also the need for some organisation to have overall responsibility to minimise duplication, and ensure improved co-ordination. One key function could be the establishment and maintenance of a central log, containing all data enquiries. This would avoid unnecessary duplication and overlap and ensure new data enquiries are unique and worthwhile. The WDC believes that it is important to ensure that organisations and individuals do not become over 'surveyed'. Survey fatigue could prove very damaging as it could inhibit the supply of future data.

Whichever organisation is given overall responsibility, it would be important that it has authority, sufficient resources, credibility, technical competence and international networking capacity. In addition, wherever the ISDI is housed, it would be important that it cultivates and maintains links with the Central Statistics Office.

9.2 *What are the other key functions which need to have roles and responsibilities clearly defined and allocated?*
It is not clear where the quality control function would be located. This is a critical function and it is important that the organisation(s) responsible has sufficient resources to carry out this function.

9.4 *What contribution could your organisation make and what support would you require to play a positive role?*
As a data user, the WDC has much experience of data analysis at subnational and county levels. We would hope that the WDC could contribute an awareness of user needs at this level of disaggregation. This could help inform issues such as the Small Areas Framework.

10. Education and Training

10.1 *What should be the education and training priorities?*
There are many education and training implications associated with establishment of the ISDI. Priorities include education and training to ensure access for as many organisations as possible. Depending upon the system chosen, most organisations will require training to access the data.

In addition it might be advisable to establish a facility whereby organisations could make a data request.[7] This service could prove particularly valuable for organisations that do not have the capacity to access the data themselves.

10.3 *What training and education will be needed to allow your organisation to use its spatial data effectively?*
In the absence of specific details of the system it is difficult to say exactly what training and education requirements the WDC would have. However, all

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[7] This could be similar to the special data requests service offered by the Central Statistics Office.

mechanisms for data access and dissemination have training and educational implications. If a distributed system is chosen, software training would be required to enable data access. Additional training may be required to support data manipulation exercises.

11. Legal Issues

11.1 *Do you feel that legislation will be necessary to ensure the speedy and orderly rollout of the ISDI? Why do you hold this view?*
The WDC feels that legislation is probably required to drive the rollout of the ISDI and to ensure compliance by all the key actors and stakeholders. In the absence of legislation it is likely that the establishment of the ISDI may <u>not</u> be perceived as a priority and therefore will be postponed.

11.2 *If you regard legislation as being necessary, have you any thoughts on the kinds of issues which should be dealt with in legislation.*
It would be important that the legislation is not overburdensome, but at the same time addresses key issues. One purpose of the legislation would be to act as a driver and to ensure organisational participation. It would designate roles and functions, lines of authority and ministerial responsibility. Another issue which might be addressed in the legislation is the privacy of the individual and data anonymity.

11.3 *Have you any thoughts on the privacy issue?*
The WDC would be concerned that as a result of the seamless integration of different databases, information could be combined which could identify individuals. This is a key concern particularly in relation to some types of data which may be more sensitive. The WDC believes that privacy of the individual is paramount and should be enshrined as such in any ISDI legislation. Any activities of the ISDI should be governed by protocols which ensure compliance with data protection legislation and are consistent with other protocols adopted by agencies such as the Central Statistics Office.

12. Finance/Cost Matters

12.1 *What in your view are appropriate ways to pay for the development and ongoing sustainability of the ISDI?*
There are both development (capital) and operating (current) costs associated with the ISDI. Ultimately, as most of the organisations involved are publicly funded, most of the costs will be borne by the national exchequer. This is certainly true of the capital or development costs. It would be desirable that funding is ringfenced by the organisations concerned for this purpose and that additional funding would be made available by the exchequer for this purpose.

The payment of operating (current) costs should be determined in part by the usage to which the ISDI is put. So for example data provided and used for commercial purposes should be charged accordingly. It is unlikely that the ISDI would be self-financing and so it is likely to require ongoing state

support. There may be a case for requiring that all commercial activity be self-financing.

12.3 *Have you any thoughts on what payment schemes should be in place for different types of access to data?*
The WDC concurs with the view that levels of payment should be structured according to its use. For example a hierarchy of uses exists from viewing through to complex manipulation. Payments should be structured accordingly.

At the same time, the use to which these data are put should also be a factor in determining the charge applied. Data provided for commercial purposes should be charged at commercial rates. Data supplied for research purposes (by government agencies, educational institutions etc) should be levied at lower, non-commercial rates.

The WDC would also be very concerned that the *level* of charges does not prove prohibitive[8]. Much of these data are designed to inform public policy-making and is therefore for the common good.

13. Consultation, Publicity & Communication

13.1 *What should be the objectives of consultation and communication ('top-down' information provision or two-way exchange of views, participation in the process)?*
The key objective of consultation and communication is to provide information to all parties, which should better inform the process and improve participation by all agencies. Therefore the objective of consultation and communication is a two-way exchange of views. The ISDI is ultimately a resource designed to be used, therefore one of the most important functions of the consultation process is to *identify* users' needs. For example, the data collected needs to be constantly reviewed as some data become redundant while new data emerge. At the same time changes to the ISDI need to be communicated to both data providers and users.

13.2 *Would you or your organisation like to be placed on a mailing list so that you can be informed about latest developments regarding the ISDI?*
Yes, several staff members would like to be placed on the ISDI mailing list. Included are their e-mail addresses: patohara@wdc.ie, deirdrefrost@wdc.ie, helenmchenry@wdc.ie, paulinewhite@wdc.ie

13.3 *Have you any suggestions regarding how best to communicate with relevant bodies or individuals?*
The best forms of communication vary according to both the message and the audience. Email alerts can prove very effective for both a wide audience and more specialised groups, any number of distribution lists can be designed depending upon the subject matter.

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[8] The decrease in the number of requests under the Freedom of Information Act can partly be attributed to the introduction of application fees. Press Release issued by the Information Commissioner on 17 June 2004, www.oic.gov.ie.

More substantive forms of communication may be required on a more ad hoc basis, such as briefing documents, seminars, conferences etc.

14. Implementation

14.1 *Are there other important milestones which should be targeted in the short term?*
Another short-term goal could be a small publication, both hard copy and electronic, detailing the spatial data available and providing a sample of interesting findings.

14.2 *Are some of the above milestones (or any others which you may consider relevant) particularly important and should they be prioritised?*
The WDC believes that the 'buy in' by all relevant agencies and authorities will be the most important driver of progress in the establishment and maintenance of the Irish Spatial Data Infrastructure.

14.3 *What are some of the key difficulties which you believe could hold back implementation of the ISDI or which could facilitate its more rapid implementation? Have you any thoughts on how such impediments could be overcome?*
As identified in 14.2, a lack of commitment from key agencies could prove an obstacle to speedy implementation. Another possible obstacle could be resources, both human and financial. All government departments and most public sector agencies would need to make additional resources available.

14.4 *Can you suggest any 'short term deliverables' which would be of particular benefit to your organisation?*
The dissemination of 'new' spatial data would be a very important short-term deliverable, which would help engage agencies commitment. This 'new' spatial data would illustrate the benefits of the ISDI to existing data users as well as providing popular appeal.

15. Can You Help?

15.2 *Who in your organisation is the best person at a policy or decision-making level who could be contacted so as to discuss ISDI matters?*
Dr. Patricia O' Hara, Manager, Policy Division, WDC.
Deirdre Frost, Policy Analyst, Policy Division, WDC.