LAND VALUATION TAXATION IN IRELAND: INFORMATION IMPLEMENTATION ISSUES

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Disclaimer

This report is the result of an academic project funded by Feasta (The Foundation for the Economics of Sustainability) and undertaken by a researcher supervised by staff of the Dublin Institute of Technology to inform and stimulate a debate on the information implementation issues of a property tax based on Land Value for Ireland.

The views expressed in this report and its corresponding presentation are those of the research team and do not reflect the views or policies of the Dublin Institute of Technology or Feasta.

1. Introduction

1.1 Government Policy

On 10th December 2009, a greatly anticipated and widely publicised budget speech for 2010 was delivered by the Minister for Finance, Mr. Brian Lenihan TD. Within this speech, reference was made to the necessity to broaden the current Irish tax base for future economic recovery.

This expansion of the tax base was to be achieved by several means including the introduction of water metering systems for homes a property taxation system. It is suggested that these additional charges will finance the provision of local services by local authorities:

> "In the Renewed Programme for Government we have accepted the recommendations of the Commission on Taxation on the need for a property tax. Considerable ground work will need to be done before a Site Valuation Tax can be introduced. Work will shortly begin on the registration of ownership and the valuation of land" (Lenihan, 2009, p.9)

In a preliminary investigation, the Commission on Taxation reported that a property tax of this type has the potential to yield €1 to €1.2 billion per annum. The introduction of a Land Value Taxation (LVT) system of this type is anticipated to result in a more stable annual source of revenue for the exchequer rather than a more volatile revenue source such as stamp duty which is influenced by market fluctuations, especially in the current financial climate. Additionally LVT broadens the tax base by applying it to all property owners rather than just those people who are purchasing property.

1.2 Current Property Taxation

1.2.1 Stamp Duty

Currently, Irish residents are charged on the transference of residential property, non-residential property, long leases and company share transfers, amongst other effects. Stamp duty is charged as a percentage of the consideration paid for immovable property. The amount of stamp duty payable depends on:

1. The price paid for the property (or the market value where the price paid is less than market value);
2. Whether the property is new or second-hand and;
3. Whether the purchaser is a first time buyer, owner-occupier or investor.

Those people who have not purchased a house before in Ireland or in any country are exempt from this duty. New owner-occupied houses or apartments with a floor area of less than 125 m^2 may also be exempt, and new owner-occupied houses with a floor area larger than this are assessed based on whichever is the greater, either the cost of the site, or alternatively a quarter of the total cost of the house and site. In all cases, the rates exclude VAT (www.revenue.ie).

The following table sets out the current rate structures for residential properties in Ireland.

Aggregate Consideration exceeds €127,000*	Rate for instruments executed on or after 5 November 2007
First €125,000	Nil
Next €875,000	7%
Excess over €1,000,000	9%

* Transactions, where the consideration (or the aggregate consideration) does not exceed €127,000, are exempt from stamp duty.

Aggregate Consideration	Rate of Duty
Up to €10,000	Exempt
€10,001 to €20,000	1%
€20,001 to €30,000	2%
€30,001 to €40,000	3%
€40,001 to €70,000	4%
€70,001 to €80,000	5%
Over €80,000	6%

Figure 1 Current rates of stamp duty (source – www.revenue.ie)

The top rate of stamp duty for non-residential property has been reduced from 9% to 6% in respect of transfers after 15th October 2008. The following table sets out the current rate structures for non residential property, which also applies to the premium payable under a lease of non-residential property.

1.2.2 Commercial Rates

Commercial rates are paid by those people occupying a commercial or industrial property. The types of property upon which rates are charged include shops, factories, offices, land, buildings and tolls. Rates are also levied on other types of property including newly constructed property, vacant property, properties destroyed by fires and properties that are part-domestic and part-commercial.

Commercial property rates are calculated by assessing the rateable valuation of a property and multiplying this figure by the annual rate on valuation. The rateable valuations for all properties are determined by the Commissioner of Valuation and the Annual rate on valuation is decided by the County or City Council in question (www.dublincity.ie).

1.3 Land Value Taxation (LVT)

Land value tax can be defined as an annual tax or charge on the rental value of the land occupied by a site or a property (Law & Mills, 2004). It can be described as:

> "a tax on the value of land exclusive of all buildings and other improvements, the value being the appreciation due to population increase and general economic development of the community for which the landowner, as such, is in no way responsible. It is the unearned increment, or economic rent, that is taxed in whole or in part", (Sloan & Zurcher, 1961).

It can be suggested that a land tax, first philosophised by Henry George, could be used to replace, modify or supplement the current property tax system. It is suggested that with a greater emphasis on land value taxation, issues of speculation, urban decay and tax equity can be addressed (Wuensh & Kelly, 2000).

Gurdgiev (2009) suggests that a reformed system based on the introduction of LVT will importantly improve macroeconomic stability in Ireland and simultaneously support economic growth with particular focus on property and infrastructure. This in turn will encourage the creation of sustainable high quality employment and investment in both human and physical capital.

At present there are a number of countries that are making use of some form of land value taxation including a number of States in Australia and the USA, Estonia, Jamaica, New Zealand and Denmark.

Land tax in these countries is levied by the county and municipal authorities based on the assessed market value of the land for all kinds of private properties. The tax to be paid to the municipal councils is fixed as a part of the yearly total budgeting for each municipality. Public properties in Denmark for example, such as preserved properties and embassies are not subject to land tax. Publicly owned properties are, however, subject to a service tax, to cover the costs of public facilities such as roads, parking, fire brigades etc. In 2000, land taxes in Denmark accounted for about two percent of the total tax and duty revenue (The Danish Way, 2002).

1.4 Funding and Purpose of Study

This desk top study was funded by Feasta to the amount of €5000 over a 10 week period, which was eventually extended to 12 weeks to facilitate participation by local auctioneers. The research team consisted of two lecturers from DIT, Bolton Street as supervisors, and an MA graduate who would conduct the research and any relevant field work.

The purpose of this study was to examine the information requirements relating to the implementation of an LVT system in Ireland and the production valuation maps using Irish data. In other words, this study aimed to identify the practicalities of introducing LVT to Ireland by assessing the various data sources available to construct an appropriate land valuation system.

2. Methodology

2.1 Approaches

Many approaches have been identified internationally for computing land values for property taxation:

Macro Approach - where existing market values for a selected sample of properties (current or historical) are reduced to land values using residual valuation techniques, and are then extrapolated to similar properties in the vicinity using comparable valuation techniques. A variant of this approach could use small areas or post-codes areas as the mechanism for applying computed residual valuations of land value to properties in the vicinity.

Micro Approach - where current market valuations for sites are computed using a custom designed algorithm using a range of criteria such as:

- Site area in square metres
- Access to the site from a public road - may be restricted or have potential to optimise use
- Site geographic location - positive or negative aspects of local area including views of visual amenity, and access to water features, etc.
- Site aspect - south facing rear garden
- Proximity to public services and to local facilities including shops, schools, recreation, etc.

Since the research project was only 10 weeks duration, it was not possible to attempt the micro approach which was considered much more complex to conduct even though it was the preferred approach initially. Consequently, it was necessary to design a project which was possible to complete within the time period available, so the macro approach was adopted for this study.

2.2 Selecting a Study Area

The primary intent of the research project was to identify a list of public data sources suitable for calculation of land values for implementing an LVT property tax in Ireland. However, it was felt that it was vital to attempt a pilot computation to identify the specific types of data required. Consequently, it was necessary to identify a suitable survey area to conduct a small pilot study using available Irish data.

A sub-urban area was required which includes a variety of land uses (residential, retail and industrial) surrounded by its agricultural hinterland. Secondly, this suburban area should preferably be nearby (within close driving distance) because it may be desirable for the research team to visit the area during the course of the study. Finally, Ordnance Survey Ireland (OSi) mapping of the area would be required for the analysis, so a small area requiring as few OSi maps as possible (they can be expensive) was necessary.

Dunboyne, Co. Meath, with circa 1400 home dwellings and a population of 5,211 (CSO, 2006) was selected since it satisfied all of these criteria. Additionally, OSi provided the mapping required (Figure 2) for the project free of charge under a new digital mapping service provided via the library service in DIT Bolton Street.

Figure 2 **Ordnance Survey Ireland digital maps supplied for the project – 1:2,500 (3060-A, 3060-B, 3060-C, 3060-D) & 1:1,000 (3060-12, 3060-13, 3060-17)**

2.3 Data Collection

The initial primary data required for the project was to collect property valuations for a sample of properties within the Dunboyne area and it was decided that this information would be gathered from the www.daft.ie and www.myhome.ie websites.

The Society of Chartered Surveyors provides a guide (Bruce Shaw, 2009) to assist householders calculate the re-building costs of their homes for insurance purposes (figure 3). The research team decided to use this guide as a standardised basis for the residual valuation method used to reduce property values to land values. Consequently, a range of data elements was required for each of the properties in the sample.

Society of Chartered Surveyors
House Rebuilding Costs per m² May '08

	No. of Bedrooms	Typical Size	Dublin Area	Cork Area	Galway Area	Waterford Area	Limerick Area
Terraced	2	70 m²	€2,211	€1,668	€1,663	€1,618	€1,715
	3	95 m²	€2,109	€1,571	€1,563	€1,540	€1,588
Semi Detached	3	95 m²	€2,198	€1,666	€1,599	€1,642	€1,705
	4	118 m²	€2,012	€1,491	€1,480	€1,470	€1,472
Detached	4	118 m²	€2,071	€1,518	€1,491	€1,515	€1,581
Detached Bungalow	4	146 m²	€1,967	€1,491	€1,429	€1,420	€1,603

Figure 3 Society of Chartered Surveyors guide for house rebuilding costs for insurance purposes (Bruce Shaw 2009).

The following data elements were gathered from the websites in mid December 2009 and a list was compiled in an Excel spreadsheet (Appendix A):

a) Property Address
b) Number of Bedrooms
c) House Type
d) Floor Area (where available)
e) Asking Price for Sale

This method yielded a list of 59 properties in the Dunboyne area, but there was some overlap between the two data sources. The study was restricted to dwelling houses in the urban area of Dunboyne only because:

- The calculation of land values for commercial properties (retail, office and industrial) was considered too complex and beyond the scope of this short term study;
- There was a lack of valuation information for agricultural properties within the selected area;
- One off houses were excluded due to their unsuitability for comparable valuation techniques.

Additionally, the researchers visited the four auctioneering practices in Dunboyne and amended the provisional sample of properties using information acquired from their property lists. The final list (Appendix B) contained 44 properties indicated in figure 4.

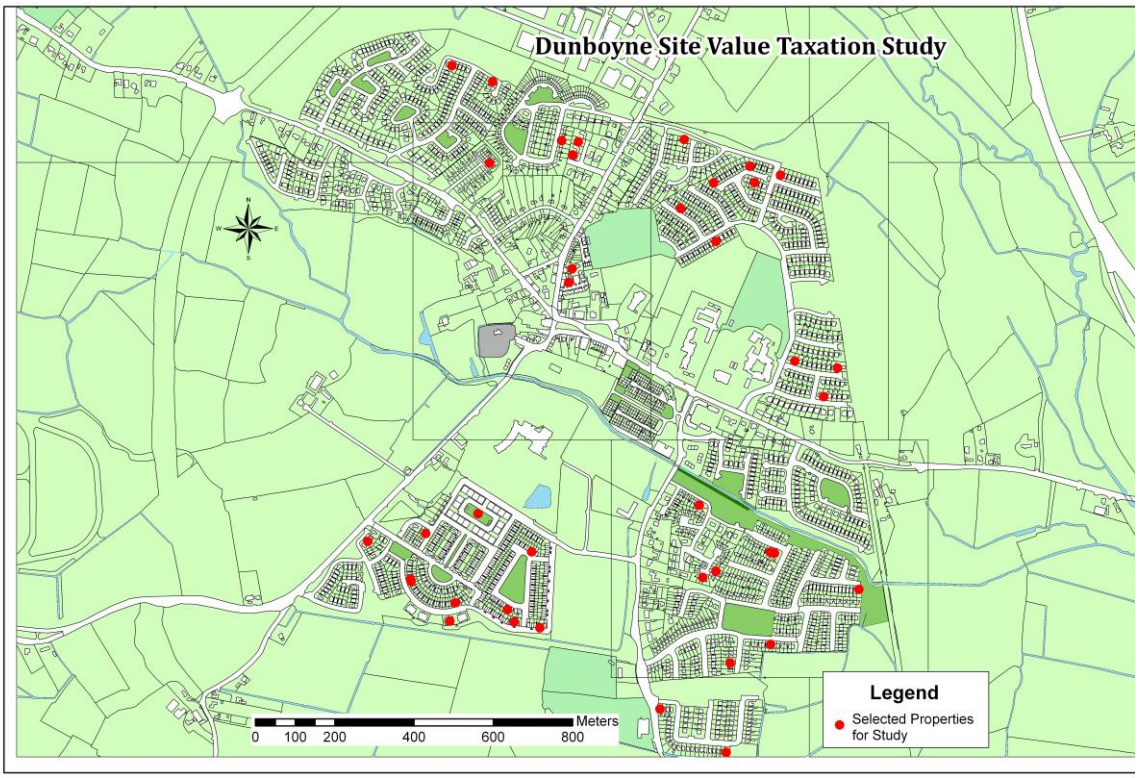


Figure 4 – Properties selected for the Dunboyne Land Value Taxation Study

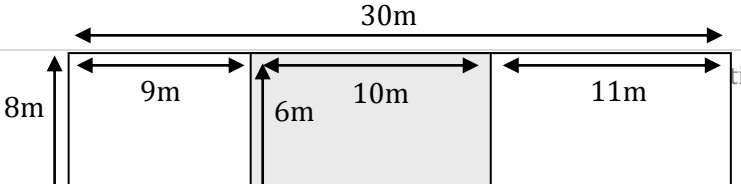
2.4 Computation of Valuations

The first task was to convert the primary data into a usable format. The first task was to convert property addresses into coordinate locations. Normally the Geo-Directory would be used for this task. A two stage process was used where the addresses were input into the Property Registration Authority's property database on www.landdirect.ie which identified the property on the Land Registry mapping. Then the same property was identified on the OSi maps and a coordinate (ITM) within the building was recorded and input into the list of properties selected for the study. This list was then added to the maps in ArcGIS.

The second task was to acquire floors areas for each of the properties, but much of this information was unavailable from the primary data sources. However, the OSi maps contained the surveyed building shapes from which floor areas could theoretically be computed. OSi maps are surveyed from aerial photography which means that the building shapes are surveyed using the eaves of the roofs. Consequently, areas derived from these building shapes will be larger (including widths of eaves and external walls) than the internal floor areas.

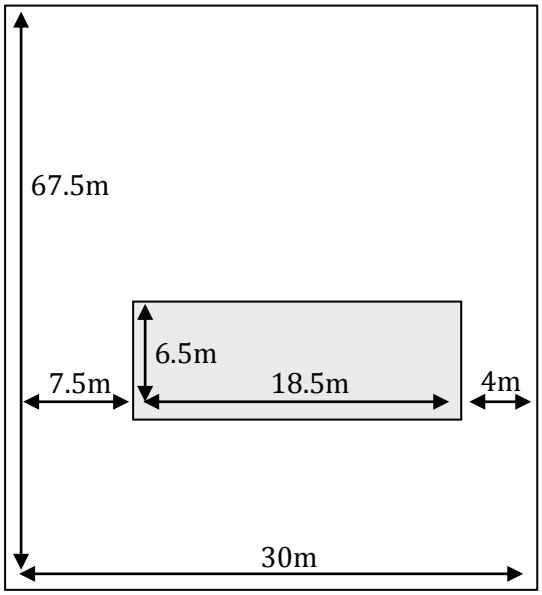
For example,

- Semi-detached house in sub-urban area (map scale 1:2,500 with accuracy @ ± 0.69m)



Building Area	
Internal area of house =	6m x 10m x 2 stories = 120m^2 = 1200sqft
Width of walls =	0.3m
Width of eaves =	0.3m
OSi building dimensions =	6.6m x 11.2m = 73.9m^2 x 2 = 147.8m^2 less **19%** = 119.7m^2

- Detached Bungalow on ½ acre in rural area (1:5,000 scale with accuracy @ ± 1.22m)



Building Area	
Internal area of house =	6.5m x 18.5m x 1 storey = 120.25m^2 = 1203sqft
Width of walls =	0.3m
Width of eaves =	0.3m
OSi building dimensions =	7.7m x 19.7m = 151.69m^2 less **21%** = 119.8m^2

The internal floor areas in these two examples are 19% and 21% less than the likely areas of the surveyed building shapes on the OSi maps. Consequently the areas of the OSi building shapes were multiplied by the number of stories and this computed area was reduced by 20% to give the internal floor areas.

Finally the asking prices (Dec 2009) for the properties were reduced by a factor to reflect a more accurate market value. For the purposes of this study a factor of 10% was used. It was hoped that the participation of the local auctioneers would modify this approximation appropriately. An additional reason for seeking the participation of the local auctioneers was that the selected sample did not include information for some of the residential areas, such as Sadleir Hall, Garnett Hall, Plunkett Hall, Castleview, Larchfield, Hamilton Hall and River Court. Without this data the study was not in a position to compute land values for these areas.

The next step involved computing the rebuilding cost using the SCS guidelines (Bruce Shaw, 2009) already outlined in figure 3, based on the house type, the number of bedrooms, and the floor areas of the properties.

Then the house type, number of bedrooms and the total floor areas were used to compute the rebuilding costs using the SCS guide (Bruce Shaw, 2009) in figure 3. These rebuilding costs were then subtracted from the market value to give the computed Land Value. In some cases these computed Land Values were negative. In these situations the research team adopted the use of a base Land Value of €20,000 for the study.

One Land Value (highlighted in red in Appendix B) was nearly twice the next highest (€163, 359) and the property type and local area did not seem to warrant this high valuation. It was assumed that there was an error in the original asking price, so this property was excluded from further analysis.

In the case of apartments, the internal floor area for the block of apartments was computed in the same manner, which was then multiplied by the number of stories to compute the total floor area for the block. This was then divided by the number of apartments in the block to compute an average floor area for an apartment. This includes a proportion of the common areas of the apartment block, but it was considered that these areas should be included in the rebuilding costs calculation.

Bruce Shaw Average Irish Construction Costs '09

The average construction costs table is generated using Bruce Shaw's Cost Database and sets out typical building construction costs. Our database is the largest construction cost database in Ireland.

AVERAGE COSTS	COST RANGE		M&E
Commercial Offices			
Suburban Naturally Ventilated			
Shell & Core	€ 1,300 to € 1,750	per sq.m.	10-15%
Developer Standard	€ 1,400 to € 1,900	per sq.m.	15-20%
Extra for Air Conditioning	€ 150 to € 350	per sq.m.	-
City Centre Air Conditioned			
Shell & Core	€ 1,700 to € 2,450	per sq.m.	15-20%
Developer Standard	€ 1,950 to € 2,750	per sq.m.	20-25%
Office Fit Out			
95% Open Plan, No Catering	€ 450 to € 750	per sq.m.	20-30%
75% Open Plan, Limited Catering	€ 700 to € 950	per sq.m.	20-30%
60% Open Plan, Full Catering	€ 950 to € 1,400	per sq.m.	25-35%
Corporate HQ	€ 1,450 to € 1,850	per sq.m.	25-35%
Open Plan Work Station	€ 1,100 to € 3,200	each	-
High Tech Industrial			
Shell & Core	€ 950 to € 1,450	per sq.m.	20-25%
Developer Standard	€ 850 to € 1,450	per sq.m.	25-45%
Residential			
Estate House (Approx. 100m2)	€ 1,100 to € 1,400	per sq.m.	10-20%
Developer Standard Apartments	€ 1,400 to € 2,100	per sq.m.	10-20%
Individual House Rebuilding Costs	see pages 45 - 46		
Shopping Centres			
Anchor Unit	€ 750 to € 950	per sq.m.	10-15%
Unit Shops	€ 950 to € 1,400	per sq.m.	10-15%
Mall	€ 1,700 to € 3,000	per sq.m.	20-25%
Retail Fit Out	€ 1,300 to € 1,900	per sq.m.	25-30%

Figure 5 Developer standard costs for apartment developments (Bruce Shaw 2009)

2.5 Interpolation of Comparable Valuations

All the streets of Dunboyne were visited on 6th and 7th January 2010 to carry out a visual inspection of similar house types along each street and photographs were recorded (Appendix C) to assist the interpolation of Land Values to comparable properties in the vicinity. Property addresses, house type, number of stories were all recorded and the number of bedrooms was estimated.

In cases where a number of Land Values were available for similar houses in the same housing development, a mean Land Value was computed and used.

2.6 Data Integration

The Land Values computed for the selected sample of properties were then linked to the relevant property parcels in the OSi maps. This entailed inserting two new fields in the table for property parcels, one to hold the Land Value and a second to automatically compute the Site Area in square metres. The Land Values for the relevant properties were inserted manually.

These Land Values were then applied to all the comparable properties in the areas as follows. The comparable property areas were selected in ArcGIS and the Land Value was pasted into the relevant record.

2.7 Validation of Methodology and Results

The local auctioneers in Dunboyne were each supplied with a copy of the methodology used and the results and were requested to comment and make suggestions to improve the process. They were also requested to specifically examine and comment on:

- The number of bedrooms estimated for the properties recorded in the photographic survey (Appendix C)
- The total floor areas computed for the properties selected in the sample
- Reduction of Asking Prices by an average of 10% to a more realistic Market Value
- The applicability of the SCS guide to compute residual valuations for Land Value
- Confirm the accuracy of the Land Values computed for the properties selected in the sample
- How negative Land Values were dealt with – is €20,000 a realistic base value?
- Supply market value for missing residential estates
- Suggest improvements to the methodology used

Despite extending the study period the local auctioneers did not participate. This could be due to the fact that the study period was so short and little time was available. Secondly the data provided to the auctioneers was a draft set of results which was quite raw. The results presented in the next chapter benefitted from a further stage of processing.

3. Results and Data Analysis

3.1 Results

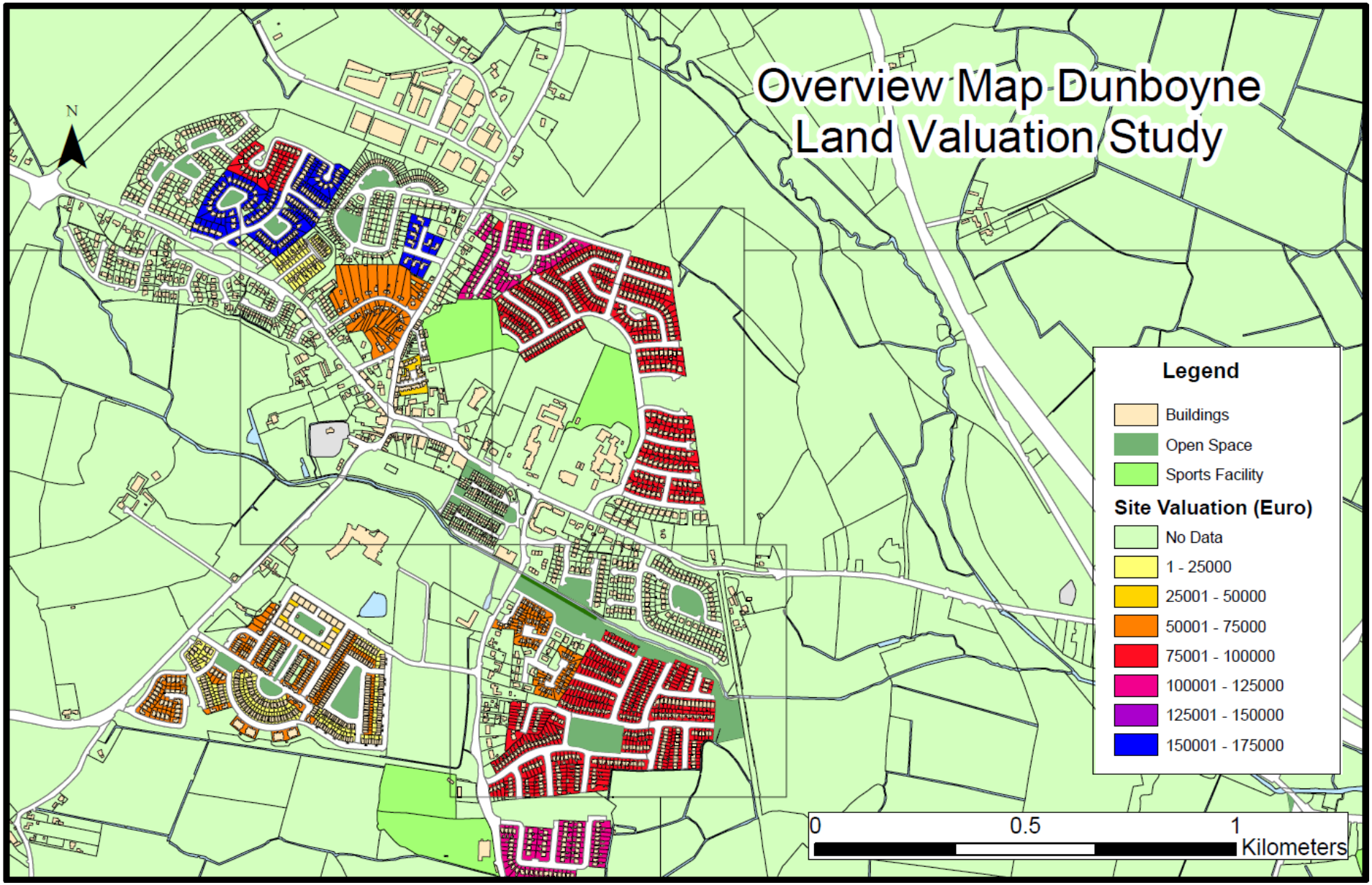
The results of this study are two-fold. Firstly, Appendix B presents an indication of the information necessary to compute land values using the residual and comparable techniques. It also contains the results of the land values computed using this methodology. Secondly, the maps on the following pages present these land values in graphical form. Although this methodology was successful in part for a small sub-urban area, more research is required to develop it to a level suitable to calculate Land Values on a national basis.

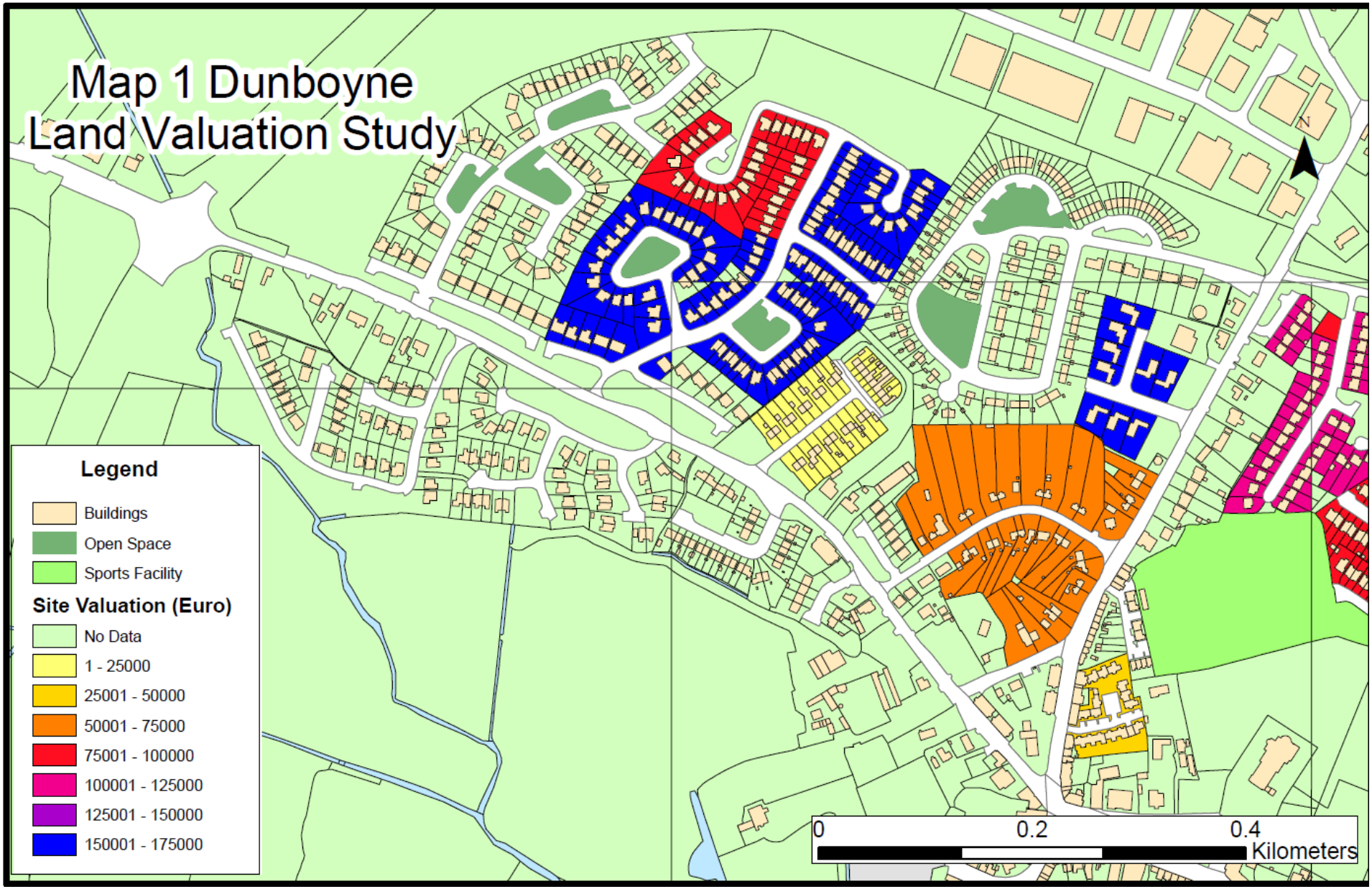
The maps indicate a good correlation between the computed land values and different housing estates in the town, which in hindsight might have been expected. A general classification of land value is now possible for the town, i.e. the housing estates to the north-west of the town contain the highest valuations followed by those along the eastern edge of the town. However, within these housing estates, no distinction is made between the different properties. In order to overcome this failing, a second set of land values were computed for one housing estate, Beechdale, indicated initially in map 3, and then again in map 5.

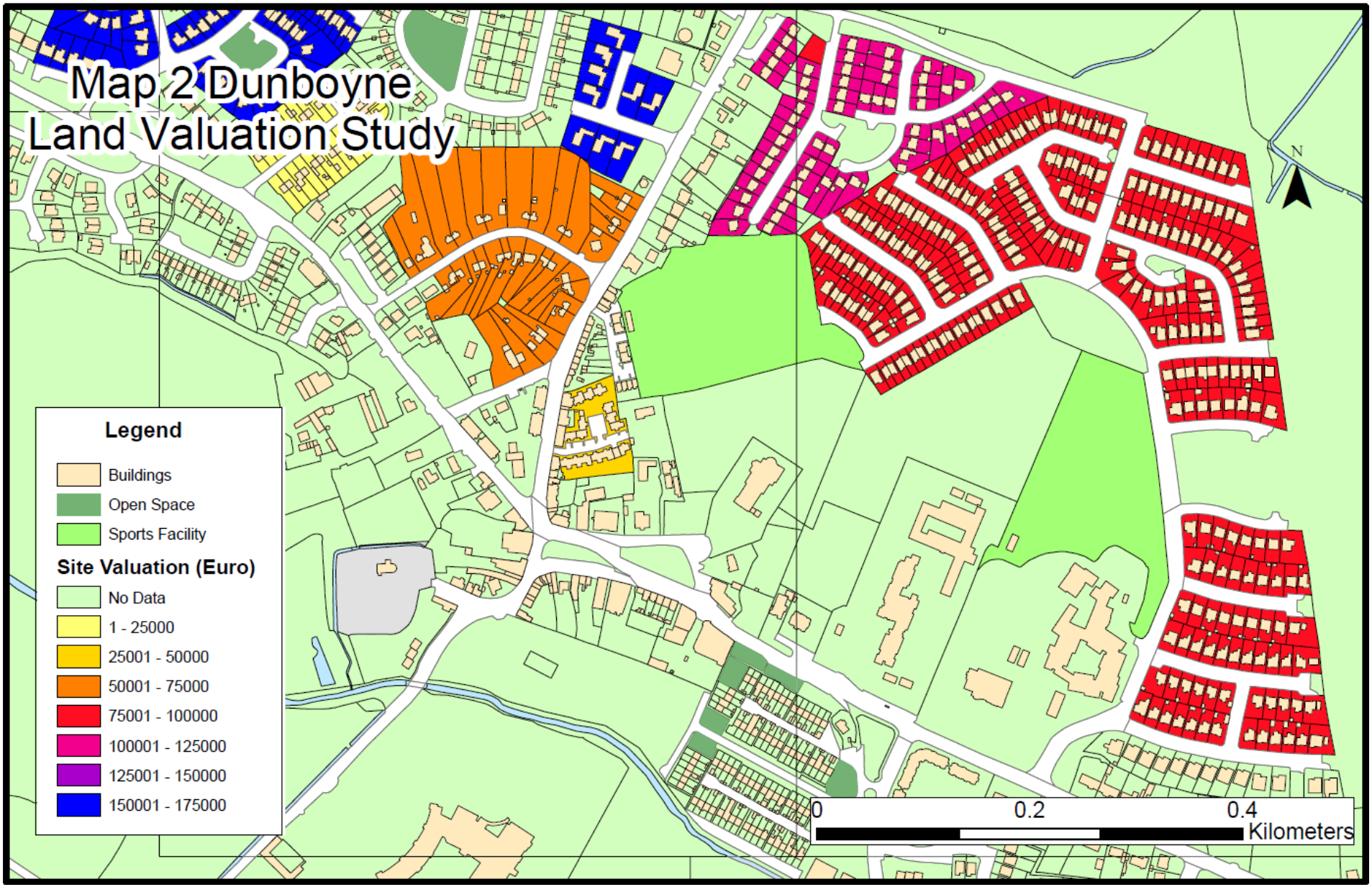
The final sample of 44 properties yielded 5 valuations for this housing estate, 2 for detached and 3 for semi-detached dwellings. When the means were calculated, the valuation for the semi-detached dwellings was €82,544 and the valuation for the detached dwellings was €82,481. The difference between the site areas for some of these properties was substantial. An average site area was calculated within these two categories and using these values, a value per square meter was computed (€282 per square metre for detached and €215 per square metre for semi-detached). Land values for each site were then re-computed using the individual site area multiplied by the value per square meter (Map 5). The results in this map provided a better indication of relative land values.

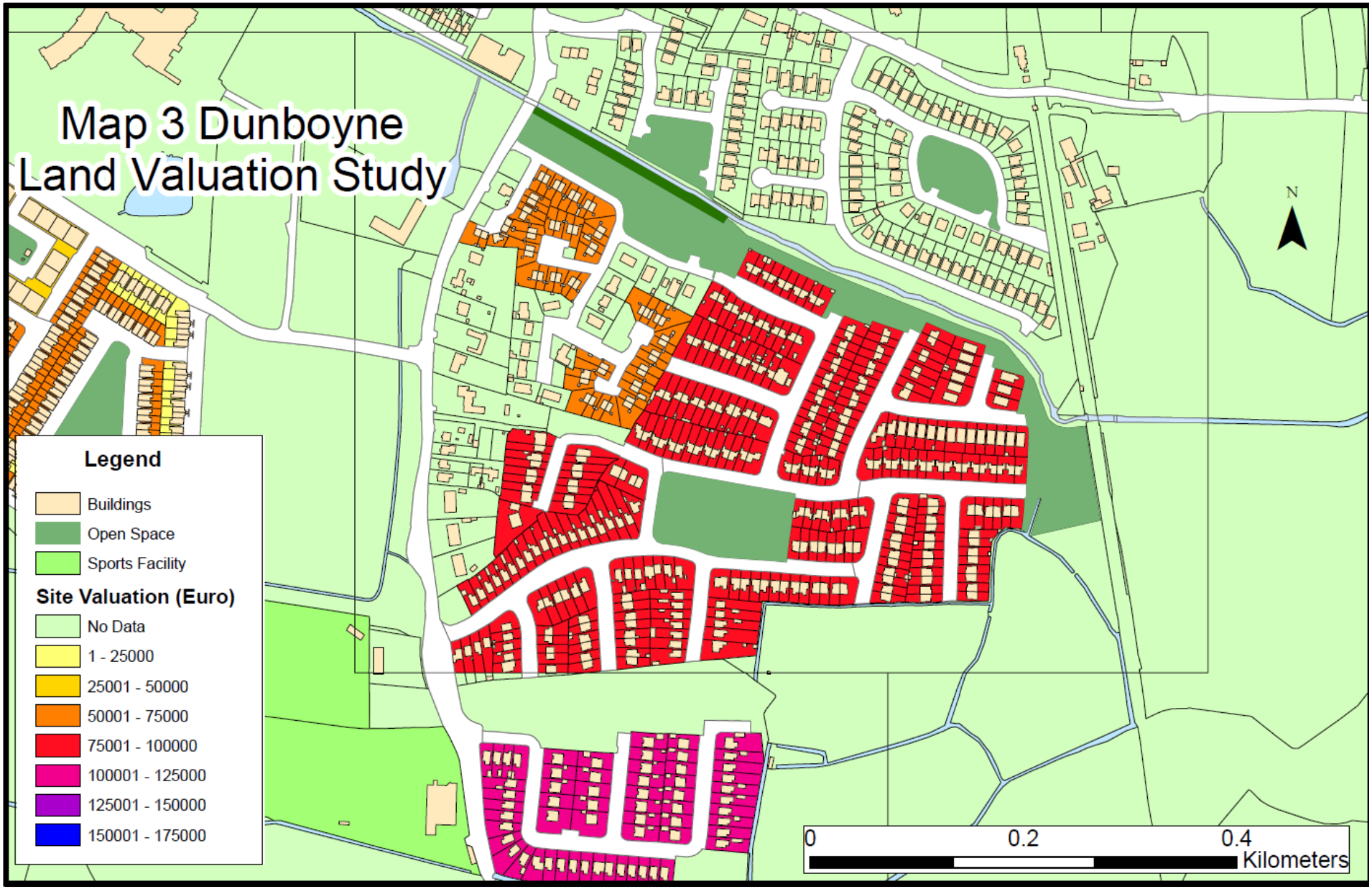
Some discrepancies in the property areas (landpc polygons) as shown on the OSi maps were discovered. In some cases multiple properties were included in the one area, thereby providing inaccurate results for some of the properties as indicated in map 5. It should be pointed out that although similar colours are used in the legend for map 5, the classification bands are double (€50,000) those used in the previous maps (€25,000).

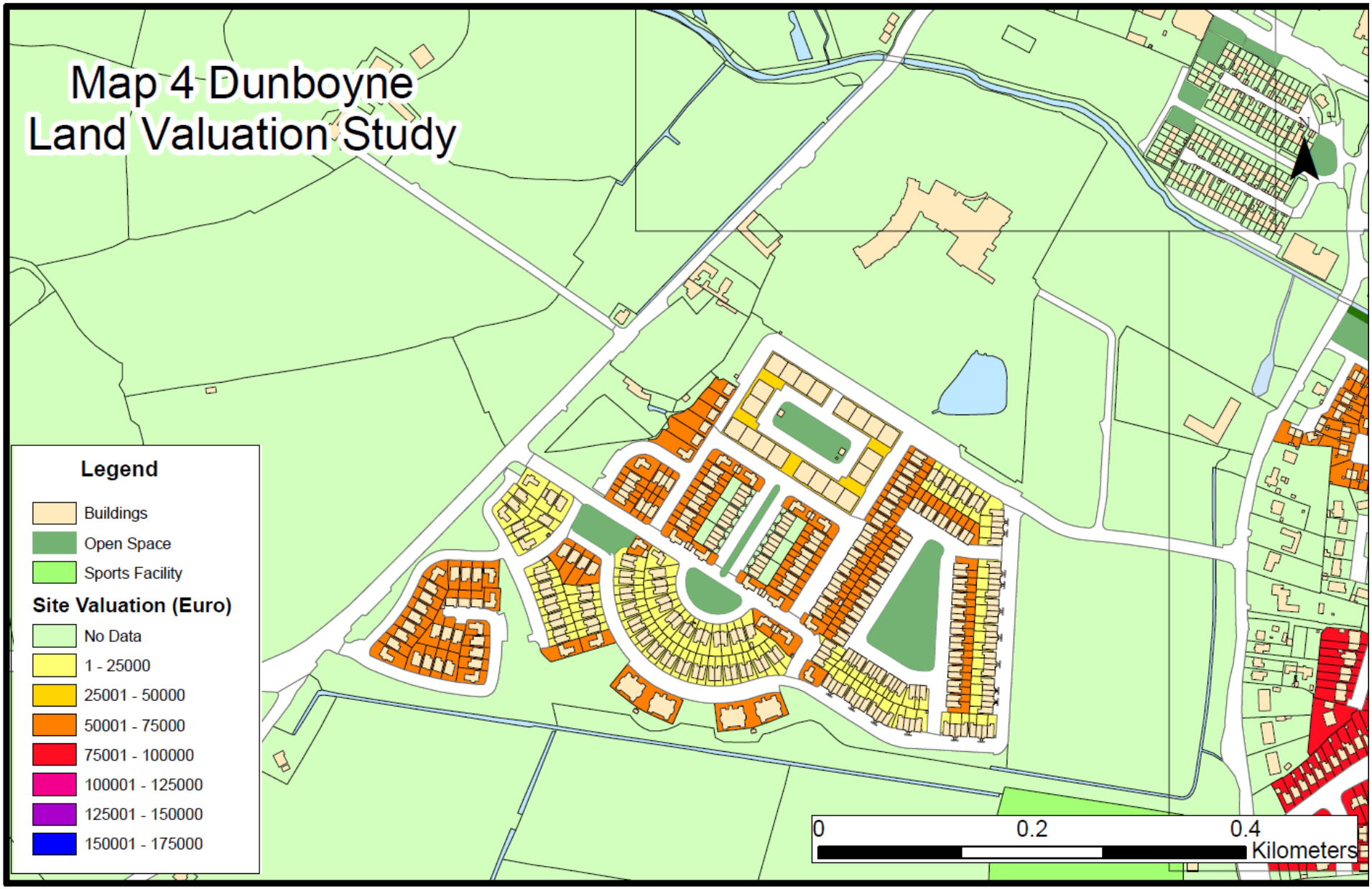
In one respect, the results of the study could be considered inconclusive because of the failure to obtain feedback from the local auctioneers due mainly to the short time frame available for the study. However, the project was successful in that it was able to identify essential information required to compute Land Values using a residual valuation methodology. This information was then used to identify and assess the suitability of official government databases in providing the information necessary to implement a property tax based on Land Value for Ireland.

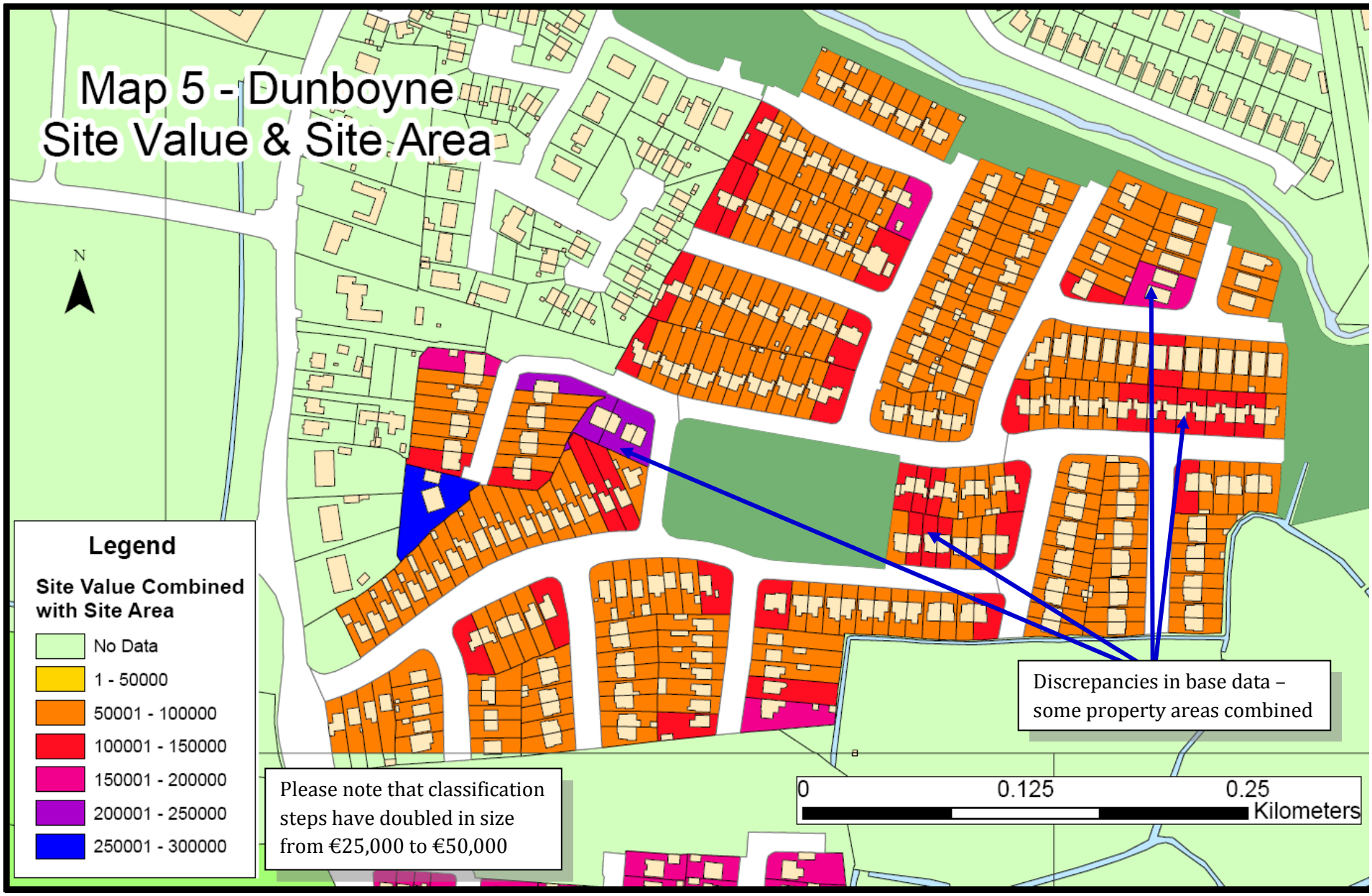

Overview Map Dunboyne
Land Valuation Study
N
Legend
Buildings
Open Space
Sports Facility
Site Valuation (Euro)
No Data
1 - 25000
25001 - 50000
50001 - 75000
75001 - 100000
100001 - 125000
125001 - 150000
150001 - 175000
0
0.5
1
Kilometers


Map 1 Dunboyne
Land Valuation Study
Legend
Buildings
Open Space
Sports Facility
Site Valuation (Euro)
No Data
1 - 25000
25001 - 50000
50001 - 75000
75001 - 100000
100001 - 125000
125001 - 150000
150001 - 175000
N
0
0.2
0.4
Kilometers


Map 2 Dunboyne
Land Valuation Study
N
Legend
Buildings
Open Space
Sports Facility
Site Valuation (Euro)
No Data
1 - 25000
25001 - 50000
50001 - 75000
75001 - 100000
100001 - 125000
125001 - 150000
150001 - 175000
0
0.2
0.4
Kilometers


Map 3 Dunboyne
Land Valuation Study
N
Legend
Buildings
Open Space
Sports Facility
Site Valuation (Euro)
No Data
1 - 25000
25001 - 50000
50001 - 75000
75001 - 100000
100001 - 125000
125001 - 150000
150001 - 175000
0
0.2
0.4
Kilometers


Map 4 Dunboyne
Land Valuation Study
Legend
Buildings
Open Space
Sports Facility
Site Valuation (Euro)
No Data
1 - 25000
25001 - 50000
50001 - 75000
75001 - 100000
100001 - 125000
125001 - 150000
150001 - 175000
0
0.2
0.4
Kilometers


Map 5 - Dunboyne
Site Value & Site Area
N
Legend
Site Value Combined with Site Area
No Data
1 - 50000
50001 - 100000
100001 - 150000
150001 - 200000
200001 - 250000
250001 - 300000
Please note that classification steps have doubled in size from €25,000 to €50,000
Discrepancies in base data – some property areas combined
0
0.125
0.25
Kilometers

3.2 Data Analysis

The information identified as essential to compute Land Value in order to implement a property tax based on Land value in Ireland fell into five categories, including

- Site Details - site area, site address, site geo-code, owners name & owners address;
- Building Details - building type, number of stories, floor area, & link to site;
- Valuation Details - robust market value (pre-bubble or mean of years) & link to site;
- Zoning Details - land-use designation & link to site;
- Infrastructure Details - proximity to public and local services for impact on value.

3.2.1 Site Details

The Property Registration Authority (PRA) is the State agency which manages ownership of interests in land on behalf of the State via the Land Registry and the Registry of Deeds, and the PRA databases were the first choice to supply the information necessary.

The Land Registry digital mapping project will be completed circa August 2010 and 88% of properties (1.9M) or 93% of the land area of the State will then be registered and in digital form. The other 12% (currently estimated at 200,000 to 300,000 properties) un-registered land (Registry of Deeds) is not digital and does not have a mapping base (total properties estimated at 2.2M, though the number of individual parcels is substantially higher). Compulsory First Registration (CFR) is expected to be extended to the two last remaining Counties (Dublin & Cork) as soon as resources allow or a suitable mechanism is developed to accelerate the investigation process of conversion. Additional triggers for CFR may then be introduced to accelerate registrations, such as CFR on mortgages, and a final systematic phase will be necessary to complete the registration of all properties in the State within an agreed timeframe. This task or registering the remaining 12% of properties is considered significant.

Therefore the Land Registry ITRIS database (digital mapping & electronic folios) should contain the site area, site address, site geo-code, owners name and owners address for 88% of properties in the State in a few months time. Government policy is urgently needed to significantly accelerate the migration of properties from the Registry of Deeds to be registered in Land Registry in as short a timeframe as possible, and systematic rather than sporadic means of registration should be considered to accelerate this process.

However, there are a number of aspects which needs to be understood about the information available from this source. With regards to site area, the Irish system of land registration is non-conclusive, so the boundaries and the extent (area) of land are not guaranteed. The site areas will be derived from the boundary coordinates in the Land Registry's digital mapping system, so their accuracy is dependent on the accuracy of the parcel boundaries. The use of the boundary information for property tax should incentivise landowners to confirm the accuracy of their boundaries and rectify them as necessary. The existing Land Registry rectification procedure may need to be streamlined if significant rectifications are required.

The study used OSi mapping for this purpose because the PRA are not in a position yet to currently supply their boundary information in digital form. Any contractual or copyright issues restricting the supply of the PRA digital boundary information by OSi needs to be urgently

resolved for the property tax project based on Land Value and also for existing PRA clients as the continued use of boundary information in paper form is inefficient and adds extra costs.

The research team assumed that landowners (rather than occupiers) will be responsible to pay the Land Value tax. In concept the names of landowners should be available via a link to the spatial definition of the properties within the land registration system. However, the identification of the names of landowners and their current addresses in Ireland is both tedious and inconclusive due to the current two tier system (Land Registry and Registry of Deeds). The Registry of Deeds can only identify the names and addresses of 'reputed owners' after much searching of paper documents, and although it should be possible to identify the current names of landowners from Land Registry, the data may not be up-to-date due to current practices, such as farms passing from generation to generation without registering the new owners, or transfers to developers taking place without registration to eliminate the need to pay stamp duty (NAMA legislation expected to close this loophole). Perhaps there is a need to define a timescale within legislation (say three months after signing documents) by which all transfers should be registered?

Therefore the spatial definition of parcels in the Land Registry digital mapping will be able to supply the site area, and site geo-code, and its associated folio will be able to supply the site address, the owners name and the owners address. Notwithstanding this, the information available is incomplete and requires significant attention to enhance it to a level of robustness suitable for a taxation system.

3.2.2 Building Details

Ireland does not currently have a 'Buildings Register' from which the information regarding building type, number of stories and floor area could be sourced. The Geo-Directory (jointly owned by An Post and Ordnance Survey Ireland) contains a 'geo-code' for all buildings to which post is delivered and a postal address and ID for 1.87M properties which includes 196,000 business addresses (Jan 2010). However, many properties have multiple postal addresses (apartment blocks); many more have multiple buildings, so a significant number of buildings without postal addresses are excluded from this database. Land Registry estimates there are between 2.1 and 2.2M properties in the state compared to the Geo-Directory containing only 1.87M postal addresses. Additionally three academics (UCD, DIT & NUIM) have recently estimated that there are approximately 0.3 to 0.35M unoccupied dwellings in the State, which also highlights that a significant number of buildings could be missing from the Geo-Directory (Williams Hughes & Redmond, 2010; Kitchin & Gleeson 2010). Other building details such as house type, number of floors and floor area required when using the residual valuation technique are not available from this source.

This is the one area where a public database suitable to supply the information necessary to introduce a property tax based on Land Value has not yet been identified or assessed. This is a major information deficiency for a methodology using residual valuation technique, so the initial implementation of LVT may need local auctioneers to supply this information.

3.2.3 Valuation Details

The Valuation Office carries out valuations of commercial lots (residential properties halted in 1978 due to an election promise, and agricultural properties halted on foot of a Supreme Court

ruling in 1983) on behalf of the State for the computation and collection of rates by the local authorities. This valuation was previously based on the original Griffith valuation of the 1840s and extrapolated forward in time. This system is now being replaced and a re-valuation is currently underway to determine modern rental valuations. Re-valuation is proceeding slowly and there seems to be mounting reluctance to accept results of the re-valuation as the percentage of appeals seems inordinately high (10% to 12%). Properties may be subdivided into several lots for different occupiers, and it is the occupiers rather than the property owners who are liable to pay this tax. Consequently, the research team considered that the Valuation Office database is not suitable to supply the valuation information required for an LVT form of property tax.

The Stamping Office of the Revenue Commissioners currently manage the collection of stamp duty on behalf of the State and solicitors currently submit a declaration form to the revenue Commissions for the assessment of stamp duty. The details supplied include the date of the transfer, the names, addresses and PPSNs of the vendors and the purchasers, the address and folio number of the property being transferred and the price paid. These declarations are signed by the solicitors acting for the vendor and the purchaser, so the information should be correct. However, the information is only available in electronic form since approximately 2003, and the first few years (to approximately 2006) the data quality is suspect. Since 2006 the quality of the data has been improved and an e-Stamping system was introduced in December 2009, which should significantly enhance the information quality even further. It is as yet unknown how many declarations per annum this database holds.

Using the information in the Stamping Office database would solve two problems identified in the Dunboyne study. Firstly it would supply actual prices paid rather that asking prices which require modification before they can be used. Secondly, with the current post bubble collapse of the property market, asking prices may have a tenuous link to reality, so it would be better to make use of the historical data by either (a) using a mean market value from a number of previous years, or (b) using values from the pre-bubble period of 2000 to 2003 would ensure the valuations were not hyped by the property bubble and the introduction of the tax might be more acceptable by using older valuations. However, it seems that valuations from the 2000 to 2003 period are not available from this source, so using a mean of the previous 3 to 7 years may be the only route available. The use of a mean will have the effect of stabilising fluctuations in the tax resulting from market trends.

It is assumed that the imposition of a new Land Value property tax would replace stamp duty to provide a more stable revenue source not linked to market fluctuations. Therefore if the initial launch of LVT uses the e-Stamping database, this information on market valuations will need to be sourced elsewhere during the operation and maintenance phase.

The ESRI/Permanent TSB publish a monthly house price index which provides statistical information in market valuations. However, they recently announced that the publication will be quarterly in future due to the depressed state of the housing market and the low numbers of mortgages issued to create accurate monthly data (ESRI, 2010). Additionally this source can only supply aggregated information rather than particulars of individual sales.

Auctioneers are not currently permitted to publish house sales prices due to data protection issues, so this legal obstacle needs to be overcome to provide this information in the future. The Irish Auctioneers and Valuers Institute (IAVI) and the Society of Chartered Surveyors (SCS) have been calling for the publication of a house price register for a number of years, which would place Ireland in line with international practice. A new policy to establish a house prices database was announced in the programme for government in October 2009 which also signalled an amendment of the Data Protection Act. The Minister for Housing Mr Martin Finneran TD announced last week (10th March) that a number of bodies and agencies are in talks to set up a national house prices register. The talks are chaired by the Department of the Environment, and also include the Irish Auctioneers Valuers Institute (IAVI), the Central Statistics Office (CSO), the Department of Justice Equality & Law Reform, the National Property Services Regulatory Authority and the Property Registration Authority. However, it is essential that the information in this national house prices register also satisfies the requirements of the new Land Value Taxation system.

3.2.4 Zoning Details

It is as yet uncertain if the new Land Value taxation will be applied to all land in the State, including State owned land. Internationally, certain exemptions can be made, and normally zoning designations are used to classify land into high value and low value land uses. High value uses such as commercial will incur a high valuation and low value uses such as agriculture will incur low valuations. This highlights that land-use designation data from Local Authorities will be necessary in the computation of Land Value for the new property tax.

The focus of the Dunboyne study was restricted to residential areas only. Consequently, the latest version (Sept 2009) of the Local Area Plan for Dunboyne (LAP map on page 23) was downloaded from Meath County Council's website and zones A1 to A4 (residential zoning objectives) were digitised to compare their areas with the residential properties used for land value calculations (residential zoning in blue on page 24). A number of issues were identified, including:

- Green areas within housing developments can presently be designated as residential which might incur a higher rate of tax than if they were designated as open space for recreational use.
- Public roads within housing developments are also designated as residential, so there may be a need to re-designate them as public thoroughfares for tax calculation purposes.

The calculation of the land values for tax purposes is expected to throw up anomalies in existing land use designations which stimulate the re-zoning and de-zoning of land to limit tax liability which in turn should lead to an overall review of the zoning classifications. The drafting of Local Areas Plans for many urban areas during the last few years has already stimulated this review and a re-zoning of land to comply with its actual use on the ground.

In Ireland it is common practice for property boundaries to extend to the centre of the public road, and these road areas would currently be included in property areas in Land Registry. If this data is to be used in the computation of a person's tax liability then there may be an issue with regards to the need to pay tax for the public road also. It may be expedient to register properties in two parts; the part with development potential and the road area so that the tax liability can

be computed using the developable part only. This may eventually lead to a transfer of these undevelopable road areas into the ownership of the Local Authorities and registered as such.

3.2.5 Infrastructure Details

The Dunboyne study used few data elements and a simple methodology to compute Land Values for residential properties. For more complex methodologies of value assessment additional information could be used such as:

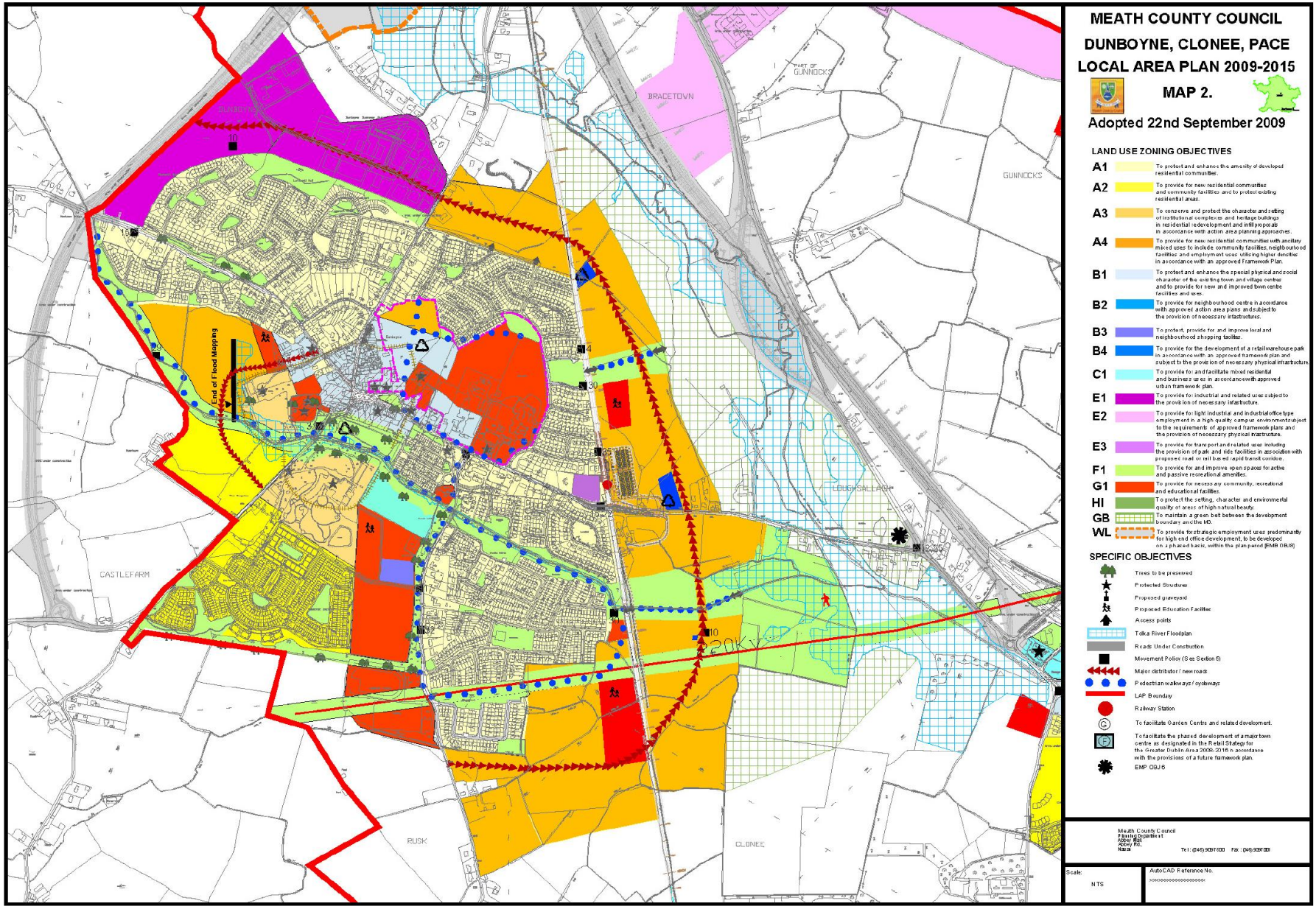
- The proximity to local services - public transport nodes, road network, shopping areas, schools, churches and recreational facilities
- The presence of water features, mature vegetation, environmental areas and cultural heritage sites in the vicinity
- The presence of trees or mature gardens within the housing development or the individual property.
- The aspect (orientation) of the property (south facing rear garden) can be derived from the spatial definition of the parcel in the Land Registry digital mapping.
- Access to the property from the public road can be assessed visually at present using the Land Registry's digital mapping, but could be computed automatically if boundaries adjoining public roads had an attribute to this effect.

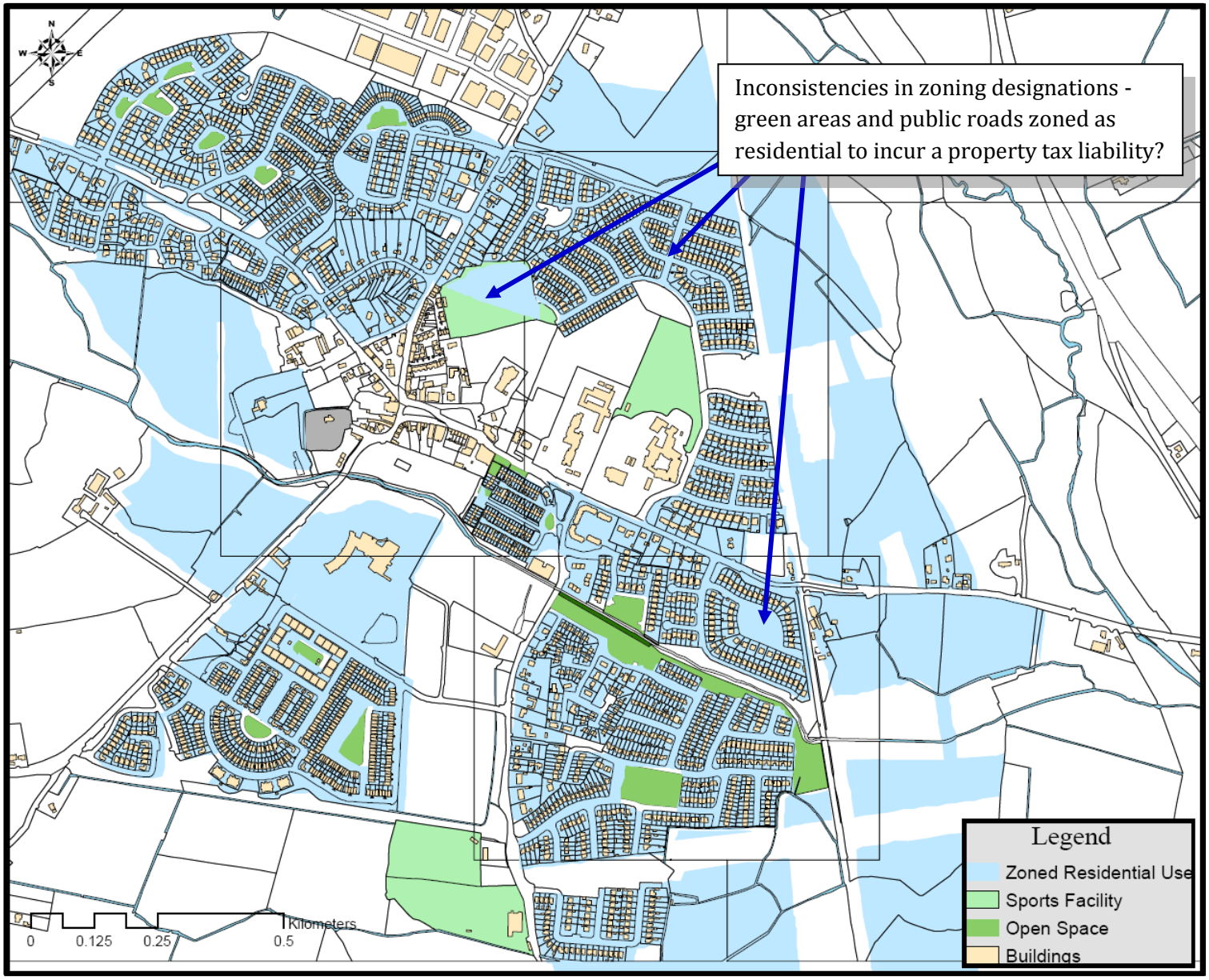
Much of this information is already available in spatial form in the County and City Development Plans and their associated Local Area Plans or from information within the Land registry digital mapping database. If these more complex and more costly methodologies are to be developed and used then this type of information will have to be collated and integrated in a coordinated manner.

3.2.6 Integration and Quality of Property Information

The information requirement for a taxation project such as this spans many databases located in various government departments. Many of these databases use different property numbering systems so to enable the integration of information between these databases will require either the harmonisation of property numbering systems, or the development and maintenance of a cross reference register to link these systems. Additionally, many of these information systems use different object or feature definitions, so integration of the information in any meaningful way will also require the agreement and adoption of common object definitions.

Finally, the quality of information in many of these databases is in some cases suspect and in other cases not as good a quality as its use demands such as withstanding legal challenges in any appeals system. Therefore quality enhancement programmes need to be developed in collaboration with the property professions who mainly supply this information to ensure new data entering these databases complies with new standards to be agreed and adopted.


MEATH COUNTY COUNCIL
DUNBOYNE, CLONEE, PACE
LOCAL AREA PLAN 2009-2015
MAP 2.
Adopted 22nd September 2009
LAND USE ZONING OBJECTIVES
A1
A2
A3
A4
B1
B2
B3
B4
C1
E1
E2
E3
F1
G1
HI
GB
WL
SPECIFIC OBJECTIVES
Trees to be preserved
Protected Structures
Proposed graveyard
Proposed Education Facilitie
Access points
Tolka River Floodplan
Roads Under Construction
Movement Point (See Section 5)
Major distributor / new roads
Pedestrian walkways / cycleways
LAP Boundary
Railway Station
Meath County Council
Planning Department
Scale:
NTS
AutoCAD Reference No.
BRACETOWN
GUNNOCKS
CASTLEFARM
RUSK
CLONEE
LOUGHSALLAGH
220KV


Inconsistencies in zoning designations - green areas and public roads zoned as residential to incur a property tax liability?
Legend
Zoned Residential Use
Sports Facility
Open Space
Buildings
Kilometers
0
0.125
0.25
0.5

4. Conclusions and Recommendations

4.1 Conclusions

The methodology used for the Dunboyne study was successful in part for a small sub-urban area and the maps produced indicate a good correlation between the computed Land Values and different housing estates in the town. The study was also possible to distinguish variations of Land Values within housing estates using property areas. The results were considered inconclusive since it was not possible to acquire the participation of the local auctioneers within the short 12 week timeframe of the study.

The study also identified preliminary ideas on where to source the essential information required to compute residential Land Values using a methodology using residual and comparable valuation techniques, including:

- The Property Registration Authority ITRIS database should be in a position to supply the site area, site address, site geo-code, owners name and owners address for 88% of properties in the State by August 2010. The other 12% of properties are registered in the Registry of Deeds, so some self assessment by these property owners will be necessary to supply this information during the introductory phase of the tax. A validation phase and stiff fines will be necessary to ensure this self assessment data is accurate. The registration of properties currently in Registry of Deeds urgently needs to be accelerated using a wide variety of registration triggers to complete the registration of all land in the State within a defined short timescale.
- Ireland does not currently have a Buildings Register from which the information regarding building type, number of stories, building floor area and number of properties contained could be sourced. This information will need to be supplied by owners by self assessment initially and validated by local auctioneers until this information deficiency is rectified.
- The Stamping Office database of declarations for stamp duty could be used to supply historical information on property valuations from 2003 to date, to provide mean property values for taxation purposes. However, if as assumed stamp duty is replaced by this new form of property tax, then a new source for this valuation information will need to be planned and implemented for the future. The proposed introduction of a national house prices register may be this new source.
- The calculation of Land Values using zoning information will need access to development plans from all Local Authorities across the State. The use of zoning information in this manner is expected to identify zoning anomalies which will require a national review of zoning classifications and use of re-zoning or de-zoning to standardise zoning classifications for tax liabilities. The zoning classification and ownership of public roads may need to be specifically examined from a national perspective.

Many of the databases required are located in various government departments and use different property numbering systems so integration of information between these databases will require as a minimum either the harmonisation of the property numbering systems, or the development of a cross reference register to link these systems.

Finally, data enhancement programmes may be necessary for many of these databases to ensure the new property tax system can withstand legal challenge and reduce the operation cost of the appeals system.

4.2 Recommendations

Currently there are significant information issues for implementing a Land Value Taxation (LVT) system in Ireland. However these information issues should not be used as obstacles, but as a challenge to integrate these core national Land Administration Systems in a planned and coordinated manner for the future. Perhaps there may be merit in establishing the LVT project as a flagship project under EU INSPIRE Directive to provide the necessary stimulus for collaboration between government departments?

The LVT project needs to prioritise the completion of specific databases within defined short timeframes. This accelerated programme of database completion should be properly resourced using re-deployment between departments as necessary and should be managed and co-ordinated with Ministerial responsibility (across Departments) to ensure a successful outcome. The project also needs to be aware of two data requirements which need not necessarily be the same, a) the information needs to launch the Land Value tax initially and b) the information needs to operate and manage the LVT system into the future to ensure the data is more robust to withstand appeals.

Information enhancement programmes will be necessary to incrementally and significantly improve the quality of information in these core national Land Administration Systems for future uses. This will require a coordinated approach and an accelerated programme to complete new databases to agreed new specifications which are INSPIRE compliant and the involvement of property professionals in a PPP approach to supply information to high quality standards.

The Dunboyne study, although short was very useful to identify some of the information and integration issues in implementing a new property tax based on Land Value. Much more research required to investigate existing international solutions and pilot them in Ireland to identify and resolve issues prior to launch of a land value taxation system.

Finally, whichever system of LVT is adopted it should be as simple and as transparent as possible, so that the methodology used is easily understood by landowners and the valuation results are widely available. Therefore a detailed account of the methodology should be published and the valuation results should be published on the internet well in advance of the taxation date to allow enough time to identify and resolve discrepancies.

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APPENDICES

Appendix A - Initial Data compiled from www.MyHome.ie & www.Daft.ie websites

No.	Address	No of Beds	House Type	Floor Area	Notes	Asking Price
1	2 Elton Drive, Millfarm, Dunboyne, Co. Meath	4	Detached	N/A	N/A	449,500
2	13 The Way, Dunboyne Castle, Dunboyne, Co. Meath	3	Semi-Detached	82	Excluding Entrance Hall	270,000
3	11 The Grove, Dunboyne Castle, Dunboyne, Co. Meath	4	Semi-Detached	105	Excluding Entrance Hall	299,000
4	68 The Court, Dunboyne Castle, Co. Meath	1	Apartment	N/A	N/A	129,950
5	1 bed, Fairlands, Dunboyne, Co. Meath	1	Apartment	N/A	N/A	POA
6	2 bed, Fairlands, Dunboyne, Co. Meath	2	Apartment	98		195,000
7	Rooske Road, Dunboyne, Co. Meath	4	Detached	229	Inclusive	520,000
8	Lindsay Lodge, Walterstown, Dunboyne, Co. Meath	4	Detached	117	Excluding entrance hall/granny flat/stables	1,300,000
9	6 Woodview Heights, Dunboyne, Co. Meath	3	Semi-Detached			230,000
10	2 Navan Road, Dunboyne, Co. Meath	4	Detached	209	Inclusive	520,000
11	Apartments, Dunboyne Castle, Dunboyne, Co. Meath	1	Apartment			129,000
12	Apartments, Dunboyne Castle, Dunboyne, Co. Meath	2	Apartment			175,000
13	4 bed house, Dunboyne Castle, Dunboyne, Co. Meath	4	Detached			375,000
14	4 Kilbreena Road, Dunboyne, Co. Meath	4	Detached	124	Inclusive	449,000
15	6 the green, Dunboyne Castle, Dunboyne, Co. Meath	2	Terrace	N/A	N/A	219,000
16	Site @ Warrenstown, Dunboyne, Co. Meath	0	Site	2023 (0.5 Acres)	Inclusive	250,000
17	49 The Court, Dunboyne Castle, Dunboyne, Co. Meath	3	Apartment	75.5463	Excluding Entrance/2 bathrooms/balcony	239,000
18	Apartments, Fairlands, Dunboyne, Co. Meath	1	Apartment			140,000
19	Amberville, Dunboyne, Co. Meath	4	Detached	230	Inclusive	595,000
20	1 Chestnut Grove, Dunboyne, Co. Meath	4	Detached	159	Inclusive	450,000
21	22 The Park, Dunboyne Castle, Dunboyne, Co. Meath	3	Town House	142	Inclusive	250,000
22	Navan Road, Dunboyne, Co. Meath	5	Detached			449,000
23	1 the Elms, Millfarm, Dunboyne, co. Meath	4	Detached	N/A	N/A	495,000

24	26 The Way, Dunboyne Castle, Dunboyne, co. Meath	2	Apartment	60	Excludes Entrance Hall	220,000
25	Site, Mullagh Cross, Dunboyne, Co. Meath	0	Site (development)	5059 (1.25 Acres)	Inclusive	325,000
26	35 Old Fair Green, Dunboyne, Co. Meath	4	Detached	133	Excluding Entrance Hall	450,000
27	83 Beechdale, Dunboyne, Co. Meath	4	Semi-Detached	100	Excluding Entrance Hall	335,000
28	"Sonas" Colliersland, Summerhill Road, Dunboyne, Co. Meath	4	Detached Bungalow	163	Excluding bathroom	550,000
29	118 The Way, Dunboyne Castle, Dunboyne, Co. Meath	2	Apartment	63	Excluding Entrance Hall/Bathroom	239,000
30	22 Avondale Square, Dunboyne, Co. Meath	3	Apartment	63	Excluding Entrance	250,000
31	1 The Close, Dunboyne Castle, Dunboyne, Co. Meath	4	Terrace	101	Excluding Entrance/ 1bathroom	335,000
32	4 The Paddocks, Dunboyne, Co. Meath	4	Detached	98	Excluding garage/walk in wardrobe	575,000
33	11 Elton Court, Millfarm, Dunboyne, Co. Meath	4	Detached	N/A	N/A	450,000
34	Bogganstown, Drumree, Dunboyne, Co. Meath	4	Detached	183	Excludes 2 bathrooms	565,000
35	7 St. Patrick's Park, Dunboyne, Co. Meath	3	Semi-Detached			230,000
36	44 Woodview Heights, Dunboyne, Co. Meath	3	Semi-Detached	73	Excluding Entrance Hall/ landing/ 1 Bedroom	269,000
37	Evergreen, Caulstown, Dunboyne, Co. Meath	5	Detached Bungalow	276	Inclusive	850,000
38	Dunboyne, Co. Meath	4	Detached	0.75 Acre		549,000
39	255 Beechdale, Dunboyne, Co. Meath	3	Semi-Detached			350,000
40	The Haven, Walterstown, Dunboyne, Co. Meath	4	Detached Bungalow	167	Inclusive	899,000
41	57 The Court, Dunboyne Castle, Dunboyne, Co. Meath	3	Apartment	76	Excluding entrance hall, 2 bathrooms & balcony	259,000
42	7 Elton Court, Millfarm, Dunboyne, Co. Meath	4	Detached			495,000
43	2 The Grove, Dunboyne Castle, Dunboyne, Co. Meath	4	Detached			435,000
44	"Chez Nous", Sarney, Dunboyne, Co. Meath	4	Detached	0.5 Acre		550,000
45	Ash Hill, Bogganstown, Dunboyne, Co. Meath	3	Detached Bungalow	1 Acre		400,000
46	44 The Court, Dunboyne Castle, Dunboyne, Co. Meath	1	Apartment			145,000
47	17 The Drive, Lutterell Hall, Dunboyne, Co. Meath	4	Semi-Detached			315,000
48	Ballymacoll, Dunboyne, Co. Meath	4	Detached	126	Excludes 2 bathrooms	550,000
49	Evergreen, Walterstown, Dunboyne, Co. Meath	3	Detached Bungalow	0.3 Acre		595,000

50	39 Woodview Heights, Dunboyne, Co. Meath	3	Semi-Detached			299,000
51	20 Rosedale, Millfarm, Dunboyne, Co. Meath	4	Semi-Detached	116	Inclusive	330,000
52	Piercetown, Dunboyne, Co. Meath	4	Detached Bungalow	325		999,000
53	102 Dunboyne Castle, Dunboyne, Co. Meath	2	Apartment	63		152,000
54	Barstown, Dunboyne, Co. Meath	0	Site	1 Acre		170,000
55	6 The Paddocks, Dunboyne, Co. Meath	4	Detached			600,000
56	69 Beechdale, Dunboyne, Co. Meath	4	Detached	141	Excluding 2 bathrooms and landing	399,000
57	41 The Green, Dunboyne Castle, Dunboyne, Co. Meath	4	Semi-Detached	82	Excluding Entrance/2 bathrooms	299,000
58	15 The Way, Dunboyne Castle, Dunboyne, Co. Meath	3	Semi-Detached	82	Excluding Entrance Hall	270,000
59	35 Old Fair Green, Dunboyne, Co. Meath	4	Detached	133	Excluding Entrance Hall	450,000

Appendix B - Computation of Final Data for Land Value Mapping

No.	Address	Easting	Northing	Beds	House Type	1st Floor Area	Building Area	Asking Price	Market Value	Rebuilding Cost	Computed Value	Final Land Value
1	2 Elton Drive, Millfarm, Dunboyne, Co. Meath	701892	742024	4	Detached	106	170	€449,500	€404,550	€351,242	€53,308	**€53,308**
2	13 The Way, Dunboyne Castle, Dunboyne, Co. Meath	700923	741474	3	Semi-Detached	76	122	€270,000	€243,000	€267,277	-€24,277	**€20,000**
3	68 The Court, Dunboyne Castle, Co. Meath	701093	741639	1	Apartment	274	822	€129,950	€116,955	€143,850	-€26,895	**€20,000**
4	6 Woodview Heights, Dunboyne, Co. Meath	701651	741660	3	Semi-Detached	47	75	€230,000	€207,000	€165,290	€41,710	**€41,710**
5	4 Kilbreena Road, Dunboyne, Co. Meath	701304	742580	3	Semi-Detached	55	55	€449,000	€404,100	€120,890	€283,210	**€283,210**
6	6 the green, Dunboyne Castle, Dunboyne, Co. Meath	701167	741397	2	Terrace	52	83	€219,000	€197,100	€183,955	€13,145	**€13,145**
7	49 The Court, Dunboyne Castle, Dunboyne, Co. Meath	701093	741639	3	Apartment	274	90	€239,000	€215,100	€189,000	€26,100	**€26,100**
8	1 Chestnut Grove, Dunboyne, Co. Meath	701552	741146	4	Detached	85	136	€450,000	€405,000	€281,656	€123,344	**€123,344**
9	1 the Elms, Millfarm, Dunboyne, co. Meath	701856	742493	4	Detached	103	165	€495,000	€445,500	€341,301	€104,199	**€104,199**
10	26 The Way, Dunboyne Castle, Dunboyne, co. Meath	701036	741414	3	Semi-Detached	72	115	€220,000	€198,000	€253,210	-€55,210	**€20,000**
11	35 Old Fair Green, Dunboyne, Co. Meath	701613	742583	4	Detached	86	138	€450,000	€405,000	€284,970	€120,030	**€120,030**
12	83 Beechdale, Dunboyne, Co. Meath	701831	741309	4	Semi-Detached	80	128	€335,000	€301,500	€265,088	€36,412	**€36,412**
13	118 The Way, Dunboyne Castle, Dunboyne, Co. Meath	701022	741368	2	Apartment	68	68	€239,000	€215,100	€142,800	€72,300	**€72,300**
14	22 Avondale Square, Dunboyne, Co. Meath	701330	742257	3	Apartment	83	83	€250,000	€225,000	€174,300	€50,700	**€50,700**
15	1 The Close, Dunboyne Castle, Dunboyne, Co. Meath	700961	741589	4	Terrace	78	125	€335,000	€301,500	€250,474	€51,026	**€51,026**
16	4 The Paddocks, Dunboyne, Co. Meath	701332	742544	4	Detached	171	171	€575,000	€517,500	€354,141	€163,359	**€163,359**
17	11 Elton Court, Millfarm, Dunboyne, Co. Meath	702000	742006	4	Detached	99	158	€450,000	€405,000	€328,046	€76,954	**€76,954**
18	44 Woodview Heights, Dunboyne, Co. Meath	701693	741494	2	Semi-Detached	42	67	€269,000	€242,100	€147,706	€94,394	**€94,394**
19	255 Beechdale, Dunboyne, Co. Meath	701841	741539	2	Semi-Detached	53	85	€350,000	€315,000	€186,390	€128,610	**€128,610**
20	57 The Court, Dunboyne Castle, Dunboyne, Co. Meath	701093	741639	3	Apartment	274	90	€259,000	€233,100	€189,000	€44,100	**€44,100**
21	7 Elton Court, Millfarm, Dunboyne, Co. Meath	701965	741934	4	Detached	103	165	€495,000	€445,500	€341,301	€104,199	**€104,199**
22	2 The Grove, Dunboyne Castle, Dunboyne, Co. Meath	700815	741569	4	Detached	99	158	€435,000	€391,500	€328,046	€63,454	**€63,454**

23	44 The Court, Dunboyne Castle, Dunboyne, Co. Meath	701093	741639	1	Apartment	274	55	€145,000	€130,500	€115,500	€15,000	**€15,000**
24	17 The Drive, Luttrell Hall, Dunboyne, Co. Meath	701122	742523	4	Semi-Detached	111	178	€315,000	€283,500	€367,810	-€84,310	**€20,000**
25	39 Woodview Heights, Dunboyne, Co. Meath	701660	741478	3	Semi-Detached	65	104	€299,000	€269,100	€228,592	€40,508	**€40,508**
26	20 Rosedale, Millfarm, Dunboyne, Co. Meath	701604	742409	4	Semi-Detached	71	114	€330,000	€297,000	€235,266	€61,734	**€61,734**
27	6 The Paddocks, Dunboyne, Co. Meath	701346	742577	4	Detached	188	188	€600,000	€540,000	€389,348	€150,652	**€150,652**
28	69 Beechdale, Dunboyne, Co. Meath	701729	741262	4	Detached	66	106	€399,000	€359,100	€218,698	€140,402	**€140,402**
29	41 The Green, Dunboyne Castle, Dunboyne,Co. Meath	701228	741543	3	Semi-Detached	66	106	€299,000	€269,100	€218,698	€50,402	**€50,402**
30	15 The Way, Dunboyne Castle, Dunboyne, Co. Meath	700924	741468	3	Semi-Detached	75	120	€270,000	€243,000	€263,760	-€20,760	**€20,000**
31	6 The Meadows, Millfarm, Dunboyne, Co. Meath	701693	742326	4	Semi-Detached	69	110	€350,000	€315,000	€228,638	€86,362	**€86,362**
32	1 Cedar Drive, Millfarm, Dunboyne, Co. Meath	701687	742473	4	Semi-Detached	95	152	€450,000	€405,000	€314,792	€90,208	**€90,208**
33	24 Cedar Drive, Millfarm, Dunboyne, Co. Meath	701791	742474	3	Semi-Detached	74	118	€385,000	€346,500	€260,243	€86,257	**€86,257**
34	22 The Park, Dunboyne Castle, Co. Meath	701184	741366	3	Townhouse	64	102	€250,000	€225,000	€226,406	-€1,406	**€20,000**
35	176 Beechdale, Dunboyne, Co. Meath	702054	741448	3	Detached	66	106	€300,000	€270,000	€155,760	€114,240	**€114,240**
36	37 The Park, Dunboyne, Co. Meath	701249	741351	3	Townhouse	62	99	€299,000	€269,100	€219,331	€49,769	**€49,769**
37	253 Beechdale, Dunboyne, Co. Meath	701830	741542	3	Semi-Detached	53	85	€299,000	€269,100	€186,390	€82,710	**€82,710**
38	1 The Dale, Luttrell Hall	701130	742729	4	Semi-Detached	71	114	€430,000	€387,000	€235,266	€151,734	**€151,734**
39	24 Chestnut Grove, Dunboyne, Co. Meath	701719	741037	4	Detached	93	149	€450,000	€405,000	€308,165	€96,835	**€96,835**
40	5 The Green, Luttrell Hall, Dunboyne, Co. Meath	701027	742769	4	Detached	87	139	€405,000	€364,500	€288,283	€76,217	**€76,217**
41	29 Avondale Square, Dunboyne, Co. Meath	701322	742222	2	Apartment	73	73	€205,000	€184,500	€153,300	€31,200	**€31,200**
42	14 Cedar Drive, Millfarm, Dunboyne, Co. Meath	701779	742515	4	Semi-Detached	71	114	€365,000	€328,500	€235,266	€93,234	**€93,234**
43	11 The Grove, Dunboyne Castle, Co. Meath	700846	741486	4	Semi-Detached	80	128	299,000	269100	€265,088	€4,012	**€4,012**
44	7 St. Patricks Road, Dunboyne, Co. Meath	701256	742389	2	Semi-Detached	39	62	230,000	207000	€145,080	€61,920	**€61,920**

Appendix C – Photographic Evidence collected during Ground Survey

1 Bedroom Houses

1. Kilbreena Estate

2 Bedroom Houses

1. Kilbreena Estate

2. Kilbreena Estate

3. The Green, Dunboyne Castle

3 Bedroom Houses

1. Beechdale

2. Beechdale

3. Hamilton Hall

4. Kilbreena Estate

5. Kilbreena Estate

6. Kilbreena Estate

7. Navan Road

8. Navan Road

9. St. Patrick's Park

10. St. Patrick's Park

11. St. Peter's Park

12. The Way, Dunboyne Castle

13. The Way, Dunboyne Castle

14. The Park, Dunboyne Castle

4 Bedroom Houses

1. Beechdale

2. Beechdale

3. Beechdale

4. Boyne Ct. (St. Patrick's Park)

5. Chestnut Grove

6. Chestnut Grove

7. Congress Hall

8. Larchfield

9. Old Fair Green

10. Silver Birches

11. St. Patrick's Park

12. St. Patrick's Park

13. The Patrick's Park

14. The Avenue, Luterrell Hall

15. The Close, Luterrell Hall

16. The Court, Luterrell Hall

17. The Cresent, Dunboyne Castle

18. The Cresent, Luterrell Hall

19. The Cresent, Plunket Hall

20. The Cresent, Dunboyne Castle

21. The Drive, Luterrell Hall

22. The Grove, Sadler Hall

23. The Grove, Dunboyne Castle

24. The Grove, Dunboyne Castle

25. The Heath, Dunboyne Castle

26. The Lawn, Plunket Hall

27. The Meadows

28. The Way, Dunboyne Castle

5 Bedroom Houses

1. The Park, Luterrell Hall

Apartments

1. The Court, Dunboyne Castle (1,2,3 Beds)

2. The Way, Dunboyne Castle (2 beds)