

Submission by Dr Brian Hughes on the National Planning Framework

Address: [REDACTED]

Mobile: [REDACTED] email: [REDACTED]

To: npf@housing.gov.ie

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Introduction: I welcome this opportunity to contribute to the NPF process although I am critical of the timing for the submission deadline: logically it should have followed after a reasonable time period to assess the area and demographic analysis flowing from the forthcoming CSO April releases for the 2016 census.

I wish to endorse the call for Regional and Spatial Economic Strategies to replace the withdrawn NSS with its mistaken focus on Balanced Regional Development. Likewise, I support the policy of developing Ireland's Capital, its regional cities and Leinster's potential city Drogheda-LBM. The provincial cities can do much to strengthen their own regions along the lines of the political reforms being implemented under *Putting People First* and the geo-economic importance of the Dublin-Belfast Corridor in the all-island context of Brexit, thus:

Given the establishment of the Regional Assemblies David Minton, Director Northern and Western Regional Assembly since 2014, [reports that] Regional Government in Ireland has been reformed. The 8 regional authorities have been abolished, while the two regional assemblies have been radically re-configured resulting in three new Regional Assemblies: namely, the Northern & Western Regional Assembly, Eastern & Midland Regional Assembly, and the Southern Regional Assembly. A regional approach to development has undergone a revival of late with successful place based initiatives such as the Action Plan for Jobs, Regional Skills Fora and other regional based policy initiatives such as IDA's 'Winning Strategy'. The enhanced role of Regional Assemblies assisting the implementation of the new National Planning Framework could be a game-changer in Ireland's approach to regional development and competitiveness.

Up to this point Ireland has never pursued aggressive regional development targets. The Assemblies will be responsible for the preparation and adoption of Regional Spatial and Economic Strategies (RSES) bringing, it is intended, a clear regional focus on the implementation of the forthcoming National Planning Framework. The RSES are expected to herald a new era of 'effective regional development' rather than the traditional and unachievable 'balanced regional development' approach. Each of the Regional Assemblies has a leadership role to play in identifying regional policies and coordinating initiatives that support the delivery and implementation of national planning policy. For example, the Northern and Western Regional Assembly (NWRA) has adopted a 'New Regions' approach focused on connecting the existing strengths, latent potential and focusing on Infrastructure, Investment and Innovation. As a result the NWRA has put in place a clear strategy. Source RSA, Irish Branch, 2017.

I am also supportive of the policy direction principles for rural Ireland as advocated by Chairman of the Housing Agency, Conor Skehan, as he articulated in the back cover page of Sunday's Independent newspaper (12th March 2017), headed '*Change in rural Ireland is only a problem when it stops changing.*' Here, the identification of the differing Rural typologies is important where decisions on non-urban viability have to be confronted.

The need for Agglomeration: There needs to be a spatial policy focus on urban agglomeration so that Ireland's weak urban population percentage share can increase rapidly from its present 62% level. Densification also requires a new spatial growth model: one that is driven by core-periphery complementarity and centripetal agglomeration. Conor also decries the "build it and they'll come" housing approach: the NPF must be demand-led and not view Dublin's size and growth as a problem, especially as it is Ireland's only metropolitan-sized city!

This writer is not convinced with the EU's approach to polycentrism and supports the criticism adduced by Paul Krugman, Mario Polezi and others. Indeed, the Hall and Pain (2006) critique on Ireland's weak position, relative to other North-Western European Metropolitan City Regions is apposite and as with BRD, the EU's Polycentric Model is wholly inappropriate to this State, given Ireland's fragile settlement size, its Tundra population density outside of the GDA and its poor regional economic per-capita data.

The World Bank's call for 'lumpiness' (2009) and for increasing densities of population needs to be intensively pursued. In this way, Ireland's competitiveness can be enhanced and better economies-of-scale achieved. Thus the strategy focus must change to recognise and pursue centripetal agglomeration and densification strategies so as to maintain and enhance Ireland's competitiveness.

Balanced Regional Development (BRD) has created hundreds of additional small towns and villages, *vide* Table 1 herein. Unlike Buchanan the NSS has conspicuously failed in its task of selecting 'winners' for growth centres or to have progressed the growth of Ireland's cities. In particular, its rationale for town selection (Appendix V, *ibid*) was faulty.

Again, it is a pity that the 2016 census data for this Table is not available at the time of this submission, demonstrating the up-to-date extent of the scattered fragile and uneconomic nature of Ireland's settlement structure.

Perhaps the most ominous fact emerging from Table 4.1.2 of the *Issues and Choices*, P. 24 document, is the absence of 100,000 to 200,000 cities, where the other four comparator countries average almost three such cities. Table 1 below likewise confirms that Irish cities have lagged the overall national population growth by 40% since 1996, the census date from which Irish non-indigenous in-migration became significant.

The fifteen-year dynamic 1996-2011 in settlement formation and growth is as follows:

Table 1): State Settlement Categories: Population, (Numbers), % Share of State and Growth

Settlements of State	1996 Population (numbers)	% of State	2011 Population (numbers)	% of State	1996-11 %
		<u>1996 Pop.</u>		<u>2011 Pop.</u>	Growth
Cities	1,313,301	(5)	36.22	1,528,960	(5) 33.32 16.42%
Large Towns	380,522	(23)	10.49	730,415	(39) 15.92 91.95%
Medium Towns	206,346	(29)	5.69	297,174	(41) 6.48 44.02%
Smaller Towns	105,042	(27)	2.90	119,705	(30) 2.61 13.96%
Smallest Towns	102,780	(48)	2.83	170,628	(82) 3.72 66.01%
Large Villages	77,029	(62)	2.12	93,016	(76) 2.03 20.75%
Medium Villages	93,387	(131)	2.58	123,200	(172) 2.69 31.92%
Small Villages	95,334	(317)	2.63	116,236	(404) 2.53 21.93%
<u>Non-nucleated</u>	<u>1,252,346</u>	<u>(nil)</u>	<u>34.54</u>	<u>1,408,918</u>	<u>(nil)</u> <u>30.70</u> <u>12.50%</u>
Total	3,626,087	(642)	100.00	4,588,252	(849) 100.00 26.53%

Source: Author's analysis of CSO Censuses, Area Volumes 1996 and 2011, Tables 7 and 12.

BRD has also encouraged unnecessary one-off housing which is not urban-based or is not essential to a local rural economy, with serious consequences for Ireland's competitiveness and its diseconomies of scale. Indeed housing development was often supply and not demand-led. With the proliferation of one-off housing in many parts of rural Ireland, dilution abounds and potential opportunities to focus growth into developing larger centres of population continues to create frustration as scattered service provision and the need for cross-subsidisation of services abounds.

Cities and Expanding Settlements: As the demographic centroid of the Island's population continues to shift eastward (now near Maynooth), this needs to be supported by the compelling and evidenced-based justification herein, for one new provincial east-coast city at Drogheda-LBM, thereby strengthening the geo-political and economic Dublin-Belfast Corridor area south of the Border. For the first time in 2016, the eleven other counties of Leinster, excluding Dublin, have a greater aggregate population than all of Munster with its three provincial cities.

Serious spatial strategy questions have to be posed, as to why inland Tampere, Finland's second city in its near-tundra climatic location, has passed out Cork's population, situated 1,000 kilometres nearer the equator with its temperate climate and located on one of the best harbours in the world? Why had Tampere's population growing at nearly twice the rate of Cork (1996-2011)? How does the international marketing of these cities compare in the context of the 'knowledge economy'?

How infused have Ireland's spatial planning principles been, to-date, with new urban economic and new economic geography thinking? Is Ireland appreciative of the benefitss of core-periphery spill-overs? Had Buchanan been implemented as intended in 1969, would the State's four provincial cities **on average**, still be only one-eleventh the population of Dublin?

At least, there appears to be no longer the local-short-term-political distraction, to change county borders to accommodate the inevitable spread of straddling settlements such as Drogheda, Waterford, Carlow or Athlone, especially with the expressed faith in the Boundary Committee's confidence in modern local governance being able to implement and deliver the administration and management of Local Government. Let's hope that the potential for local authority co-operation within the provisions of *Putting People First*, Sections 85, 86, etc. can work. Otherwise, such competing and dysfunctional individual LAs should be wound up and amalgamated. The total populations of many counties can still be accommodated in Croke Park, in some cases without having to open Hill 16.

As is recommended in these recent Boundary Reports, all county boundaries can be left as they are, or indeed, being even restored to their original lines. With each successive census and further urban expansion, Ireland faces the inevitability of more such urban straddling.

Ireland's largest town Drogheda is agglomerating with its thirty-fifth largest Laytown-Bettystown-Mornington and this emerging agglomerating city now matches Waterford City in population and is growing at a much faster rate. Now that the EU-OECD has published (2015) the Harmonised Measure – Graz (Austria) Model, using square kilometre grids, this confirms the progress of their demographic, physical and functional agglomeration and it should be applied to the 2016 population data when released by the CSO so as to confirm it as Ireland's emerging newest city.

In Support of Business as Usual Aspects: While it is conceded that some aspects of the 'BUSINESS AS USUAL' (BaU) economic model are not optimal in outcome, nevertheless its principles should be selectively pursued so that Ireland's economic engine is further strengthened as an employment provider arising from Dublin's sustained growth, as its only metropolitan-scale city and because of its economic potential. Such an approach is vital in the post-Brexit circumstance.

If the BaU spatial strategy is abandoned as suggested in the *Issues and Choices* document, economic growth will be reversed and the necessary resources to achieve future core-periphery spill-overs will not exist. It is instructive to note ESPON's view that under the BaU model, both the Irish and Dublin's economy will prosper.

Likewise, this model has instilled economic and business confidence, particularly due to the lengthening economic recovery period, with its sustained record of employment growth and reduced unemployment since 2007-08.

Ireland need to focus on further growth potential of the four provincial cities and environs population which, in 2016, still only aggregate to about 450,000 in population. This gap with Dublin needs to be seriously reduced so that they can achieve critical mass and a higher central place order. Particular attention needs to be paid to densification of Ireland's provincial cities which fall well short (c. 60%) of the 3,000 people per square kilometre needed to create scale economics and make local public transport economic.

Both Urban Economic and NEG theory should increasingly be deployed as application tools to inform the use of demographics as a core evidence base to formulating Ireland's NPF, which needs to be statutory-proofed against political interference. This is required so that the NPF will not suffer the same political fate as did the Buchanan Plan in 1969 or the NSS one year after its launch in 2003, with the contradictory decentralisation of public-sector employment to fifty two centres (one for everyone in the audience' mentality). What an underwhelming spatial planning legacy Ireland has been obliged to endure with its adverse economic outcomes.

Particular note now needs to be taken of recent population growth, driven under BaU conditions. Demographically, Ireland must now be viewed as having five provinces, Dublin, the Rest of Leinster, Munster, Connacht and Ulster (part) as the following Table 1 confirms for their contrasting population, growth and share parameters:

Table 2: Provincial Performance - Population Numbers

5 Provinces:	Census 2011 Pop.	Preliminary 2016 Pop.	2011-2016 population growth and % contribution	5-year % growth	% surface area of State
Dublin	1,273,069	1,345,402	72,333 = 42.62%	5.68%	1.35
Rest of Leinster	1,231,745	1,285,318	53,573 = 31.56%	4.35%	27.26
Munster	1,246,088	1,280,394	34,306 = 20.21%	2.75%	35.12
Connacht	542,547	550,742	8,195 = 4.83%	1.51%	24.74
Ulster (part)	<u>294,803</u>	<u>296,120</u>	<u>1,317 = 0.78%</u>	<u>0.45%</u>	<u>11.53</u>
Ireland	4,588,252	4,757,976	169,724 = 100.00%	3.70%	100.00

Source: Brian Hughes analysis of CSO 2011 Census and 2016 CSO Preliminary Data

The Rest of Leinster has replaced Munster as the second most populous 'province'. Significantly, all-Leinster has accounted for almost three-quarters (74.18%) of the growth to reach a 55.29% share of State population in 2016. Dublin now has 28.28% of the State's population having achieved nearly 42.62% of growth 2011-2016.

Dublin and Cork enjoyed net inward migration with the other cities being slightly negative. Thus the existence of adequate city-scale is essential for regional growth and so as to counteract emigration and to thwart the inevitability of further rural decline.

It is noted that the Rest-of-Leinster population now exceeds that of Munster. The fiscal evidence of core-periphery beneficence is shown by the fact that the GDA is responsible for generating nearly 70% of total State tax revenue.

Top-down spatial and economic growth policies are essential: for too-long the political focus for regional aid has been miss-directed towards fatuous ‘bottom-up’ solutions, many of which are one-offs and are uncoordinated with each other. In the context of the (old) Planning Regions from the prospective of an east-west divide, here is noted the marked difference in population share and growth performance between the east and west of State.

Table 3: East Regional Population Growth - 2011-2016

<u>Eastern areas:</u>	2011	2016	Growth	% growth
Dublin	1,273,069	1,345,402	72,333	5.68%
Mid East	531,087	559,404	28,317	5.33%
Midlands	282,410	291,941	9,531	3.37%
South East	497,578	511,070	13,492	2.71%
East Border area	<u>256,563</u>	<u>265,740</u>	<u>9,177</u>	<u>3.58%</u>
East of State	2,840,707	2,973,557	132,850	4.68%
<u>Western areas:</u>				
South West	664,534	689,750	25,216	3.79%
Mid-West	379,327	385,172	5,845	1.54%
West	445,356	453,413	8,057	1.81%
West Border area	<u>258,328</u>	<u>256,084</u>	<u>-2,244</u>	<u>-0.87%</u>
West of State	1,747,545	1,784,419	36,874	2.11%
State	4,588,252	4,757,976	169,724	3.70%

Source: Brian Hughes analysis of CSO 2011 Census and 2016 CSO Preliminary Data.

NOTE: The full Border Region’s corresponding population totals during 2011 and 2016 are: 514,891 in 2011 and 521,824 in 2016, resulting in a 6,933 growth which is 1.35 % uplift for that region’s population growth. It is observed that all of Louth accounted for just over 79% of that region’s growth and the Drogheda + Louth Rural Area’s growth of 2,020 (*vide Appendix 1*) excluding the Meath Rural Area, compares with just 1,455 in aggregate, for the net population growth of that region’s other five counties. Likewise, another of that region’s county, Cavan, the south of which is also within Dublin’s sphere-of-influence, grew by 2,909 in 2011-2016, as per these CSO preliminary census results.

Recognising the Potential of Demographic Differences: How much worse would be this east-west demographic contrast have been were it not for the positive growth of both Cork and Galway cities in the South-West and West? Likewise, due to its higher incidence of in-migration compared with the East Regions since 1996, much of which was reversed after the economic downturn. Regions and sub-regions need to be based on the mass gravity of cities. Taking this east-west population divide, based on past growth differentials, it can be expected that by 2040 target date for the NPF, the State’s population growth could be upward of 1.60 million. With an anticipated growth rate of 1.5% per annum compound almost 80% of that growth could take place in the east which by that date could reach 4.25 million. The West of State area growing at 0.7% per annum compound could reach 2.11 million.

Accordingly, the East's population is likely to grow from a current 62.5% to a 79.7% share whereas the West's share would decrease from 37.5% to 20.3% by 2040.

In demonstrating the demographic projections for such growth difference, Fingal is compared with Connacht **plus** Ulster (part) in explanation of the latter's dilution from a 37.5% share at present to 20.3% by 2040. The GDA share of State population would be about 43-44% by then, depending on the redirection of growth to large Leinster settlements becoming clearer. Fingal with a 2016 (preliminary) population of 296,214 has just 38.60% of the population of these two provinces (The Northern & Western Regional Assembly Area, but in omitting Galway City) [i.e. 846,862-79,504]. Yet its Q1 2016 Natural Growth was higher, at 969 as against 948, generated by Fingal's much more viable current population – birth mothers, fertility, age profile differences, etc., *vide* CSO Vital Statistics.

Thus, it is unreasonable to ever expect the populations of Provinces such as Connacht **plus** Ulster, to replicate Fingal's growth potential for the foreseeable future, leaving aside their respective propensities for attracting inward migration; let alone retaining such immigration, especially during down-turn periods of the economic cycle. Such demographic differentials, including urban and rural compositions need to be carefully considered in the selection of locations and numbers of growth centres in the NPF. These realities inform this submission's growth projection differences of the 1.5% versus 0.7% for east and west, respectively.

The Task of Settlement Selection: Selecting 'winners' for growth centres is important, if the East's growth momentum is to be achieved elsewhere. ESPON's recent study of 'second tier cities' is noted although in the cited UK northern cities their scale-size is significantly larger than that of Ireland's cities. The absence of central places with critical mass has reflected the undue attention given to fostering so many smaller settlements instead of focusing on developing Ireland's provincial cities and reducing home to work, college and school commutes. The radical changes in what constitutes 'work', will influence both the locations of end-use-demand and employment.

For successive recent censuses Sligo town continues to lose residential population and unfortunately, this is likely to also be the case in 2016. However, even with good local employment, as measured in its league-table standing of its Daytime Working Population (DWP), where Sligo scores particularly well for its population size, this attribute cannot mask the serious defects in the overall population structure of its region, county or the town, which need to be factored in when answers are being sought as to why its population growth is so 'flat' over recent censuses relative to its impressive DWP count? The answer to this apparent dichotomy is very much related to the West's population structure, its human capital resource defects and poor demographic dynamics when compared with the East of the island.

Since before Buchanan's Plan the absence of meaningful-sized settlements in the Midlands and North West areas had been recognised. The low-growth, stagnation or contraction of county

populations in these areas is again confirmed in the 2016 census. And yet Sligo, and Letterkenny, should logically, continue to be NPF growth centres because of the limited selection of centres of population scale in North West Ireland. In 1966 this author lived in the town and worked there when its population was 13,452 in the census. At that point Sligo was two-and-a-half times the population of Letterkenny, which passed it out in 2011. In that census Sligo had slumped to twenty-fourth in rank order of settlement size, having occupied twelfth position in the 1996 census. It may struggle to reach the 'top 30' in 2016.

The NPF needs to focus on how to grow these towns to a meaningful size so that they can more actively participate in a post-Fordist economy that is 'knowledge-based'. How can they attract private-sector employment growth and not be over-dependent on public-sector decentralisation as a necessary crutch? Effective and sustained incentives and demand-led initiatives leading to clustering of private-sector economic activities at scale are essential. BRD combined with the disappearance of Gateway Funding have proved disastrous and have only served to copper-fasten such stagnation, aggravated by the distraction of decentralisation and incoherent policy formation, all reflective of unhelpful, negative political interference.

In contrast to this dismal picture, two further Leinster towns lend themselves to consideration as growth centres in the NPF, i.e. Portlaoise and Kilkenny. To demonstrate the selection of wrong choice growth centres in the NSS, in intercensal 2006-2011 Portlaoise's population growth of 5,532 was almost equivalent to that of the three Midland ATM Gateway towns. Yet little account appears to have been taken of the importance of the Portlaoise land use-transportation interface in a geographic location or urban economic sense.

Likewise, both on demographic size and growth grounds, Kilkenny merits growth-centre consideration under the NPF. Athlone and Ennis must be viewed against their propensity to flooding and Tullamore in the context of the limitations of its river's limited capacity for waste-water absorption. The 'jury is out' on centres such as Castlebar and Cavan and other designated growth centres under the NSS. The 'death of distance' factor as distinct from local politics must be considered in the validity of continuing to give false growth expectations under the concept of 'linked growth centres', e.g. Tralee with Killarney, particularly in the context of Kerry's population performance. Population thresholds need to be re-thought in the selection of towns of the size of Monaghan or Tuam - which are hopelessly short of the 20,000 minimum threshold population guideline articulated in the NSS.

Selection should be influenced by ability to grow population and achieve critical mass, not in a former industrial-branch plant context now gone but rather, as to their realistic prospects of participation in the competitive 'knowledge economy'. Effective transportation, broadband, education, skills appropriate to current and future employment requirements, arts and culture, all-year-round tourism and adventure sports, convention centres, international sports and the arts, all must be actively promoted, combined and funded if productive and talented people of different nationalities are to be attracted to such population growth centres and in the process, being the essential ingredient in creating such critical mass.

The NPF is sure to fail unless adequate capital expenditure is effectively directed to promoting and enhancing ‘winners’ which in turn will kick-start their regional growth.

Cost Benefit Analysis or return on capital investment analysis is a prerequisite for all investment, public or private. Such scale size driven by end-use-demand is likewise essential to locational choice-making for attracting institutional property investment to selected growth centres, thereby funding office, productive services and retail floor space. Weather-proofing with enclosed shopping malls will anticipate higher rainfalls and the more extreme climatic conditions expected, especially in western areas. Large centres of population must be made attractive to potential institutional-grade property investment, thereby increasing the locational choices available to property (including REITS) and pension fund managers.

The NPF must be geared towards competitiveness and the creation of ‘fresh blood’ in the population profiles of provincial Ireland so that the demographic dynamism of areas like Fingal can begin to be replicated elsewhere. Surely, at this late stage, with the recent Nenagh cosmetics factory announcement, there must be belated recognition that the ‘branch plant’ era of unconnected one-offs is over and that a new economic model of co-ordinated enterprise with third and fourth-level education and research, is required for Ireland’s town settlements as their *raison d’être*. Combining this with the desertification of former residential accommodation (living over the shop), and the location of supermarket food chains to out-of-town-centre locations, require that a complete special rethink of the Von Thunen market place (1826) application as updated in the Alonso bid-rent model for such towns is long overdue. Their being by-passed by the nearby motorway is another radical change as is the higher population ‘threshold’ for viability in a ‘knowledge-based’ world that is now the norm.

Hard choices will be required but which ones? The following Paper which forms an integral part of this Submission, is therefore provided in supporting Drogheda-LBM’s selection (c. 52,000 in 2016) as a top-rank order of growth-centre in the NPF and in stark contrast to its defective selection as a third-ranked one after the NSS Gateways and Hubs, placing it alongside Carrick-on-Shannon (c. 3,500) in that discredited Plan. Lessons must be learnt in determining why towns such as Sligo (c. 19,000) have been unable to achieve organic demographic growth on their own. Bottom up initiatives that are meant to underpin rural Ireland, for the most part have not worked. That is why top-down intervention is essential and this is only possible if the wealth-creating conditions exist in the core region to fund attractive growth centres elsewhere.

Such intervention first requires that the core region is a dynamic and growing one that can generate the necessary added value and be able to afford the sustained high levels of capital investments that such a strategy can be implemented. Conscious of the legacy of Ireland’s high debt-to-GDP ratio that is precisely why further growth and concentration of population and economic activity in the core region of Dublin must be further scaled-up and the positive, commercial attributes of the ‘business as usual’ model be copper-fastened and reinforced. Drogheda-LBM is presented as the growth model for the Rest-of-Leinster province.

Assessing the Demographic Growth Momentum to Identify the Emerging City of Drogheda with Laytown-Bettystown-Mornington (LBM).

Brian Hughes, PhD, Dublin Institute of Technology. © August 2016, since modified.

This research paper presents the application of population density grid analysis in applying the 2015-published Harmonised European Union-OECD (HEU) methodology to this emerging east-coast city.

Abstract:

In earlier research literature this author deployed both population size and daytime working population data as measures of potential settlements, for selection as comparable growth centres for the National Spatial Framework, vide Hughes (2013). An identified problem, encountered in defining urban settlements and that of their spatial extent, is the dilemma of opposites; of being able to distinguish between the physical ‘separation’ and the agglomerating ‘contiguity’ of discrete settlements.

Focusing on linear distance as its principal ‘separation’ measure, the United Nations provides a limiting description, for separation, in the task of quantifying singular urban fields of agglomeration and thus in identifying processes of city formation. In contrast, The World Bank advocates three ‘D’s which, in addition to Distance and Division, includes Density (2009).

Particularly for Ireland as a sparsely-populated country, this latter measure assumes particular importance, especially given its scarce number of large settlements and their linear distances from each other. The Central Statistics Office (CSO) now has the facility for grid-enabled data, which can be used in distinguishing between examples of scattered morphology of sparsely-populated ribbon development in contrast to that which can identify densifying urbanisation cores.

Prior to the availability of the 2016 final census population results, this paper now investigates and applies population grid data measures based on the CSO grid-based demographic data from the 2011 census. Applied to a real-life example, this technique facilitates the further research objective of identifying Ireland’s emerging city, the east coast agglomeration of Drogheda with Laytown-Bettystown-Mornington (LBM).

In its census of 2011, the CSO adopted the United Nations updated convention for Settlement distancing in its application of the ‘100 Metre’ rule for settlement separation. This is applied to habitable buildings, including both residential and non-residential structures. Prior to 2011 the linear distance was 200 metres.

The rationale for its use is ...to avoid the agglomerating of adjacent towns caused by the inclusion of low density one off dwellings on the approach routes to town. CSO 2011 Census, Area Volume, Appendix 1. The GDA together with County Louth – which has Ireland’s two largest towns, Drogheda and Dundalk – this area comprises the Republic’s two million-plus population share of the dynamic Dublin-Belfast economic corridor area; in all, this corridor comprises just over 50% of the island’s 6.65 million people.

Analysing the agglomeration of LBM with Drogheda and in comparing this with that of Blackrock (Louth) with Dundalk, on the basis of the EU Grid criteria, this Paper concludes by noting the need to distinguish between physical separation and that of physical agglomeration and proximity densification under the new Harmonised European Union (The Graz methodology), especially for governance and local administration purposes in this new Putting People First era of local governance rationalisation.

1. Census Geography - Applied Measures:

The CSO's evaluation of settlement size is set out in their *Population Classified by Area* Volumes of recent census results *vide* Appendix 1, *Census Geographic Definitions*, PP. 151-155, CSO (2012). It applies the linear distance rule for confirming settlement separation, applied so as to distinguish between a densely-populated urban field and an adjoining elongated ribbon of mainly housing development that often occurs on access routes to a defined city or town settlement. The objective is to provide definitive and regular-shaped settlements, thereby defining their footprints from their surrounding rural morphology.

Such measures for 'division' are effective in statistically isolating discrete new urban areas such as Bearna from Galway and the Balrothery separation from Balbriggan, resulted in creating these new town settlements in 2011. However, the application of such tests on their own, for cases of emerging urban agglomeration are inadequate, especially where two settlements are expanding towards each other and wherein, the provision of shared, linking infrastructure, the momentum of development is designed for and is resulting in emergence of a densified agglomeration, thereby producing a much larger unified settlement, albeit as one that may have more than one central core. The combined availability of a skilled, large labour pool is a pre-requisite for growth-centre selection.

The opposite effect from an inappropriate application of the '100 Metre' rule can serve to ignore or overlook cases such as the emergence of bi-centric, adjacent settlements that are in a process of agglomerating and which are thus forming a larger settlement. One conspicuous example of an Irish failure to 'see the wood from the trees' is that of Drogheda's progress in its agglomeration with nearby Bettystown-Laytown-Mornington (LBM) wherein yet another Local Government boundary adjustment had been initiated in late-2015, in an Area of Interest confined to Drogheda, which had the objective of facilitating its local government administration. Yet, there was no recognition of the bigger, emerging picture, of Drogheda's agglomeration with LBM.

2. Urban Boundary Changes and Local Governance Issues:

Notwithstanding Ireland's unusually low level of urbanisation – with a 2011 share of just 62.05% of its population living in settlements of 1,500 and over – its urban development 'catch up' process is resulting in both population growth and a spreading of its urban settlements. Accordingly, many of its cities and towns are experiencing outward growth wherein its towns and environs are spreading beyond former administrative boundaries. Thus existing settlement boundary lines are being breached with successive waves of outward development.

Whereas in the census of 1996 the CSO listed twenty settlements whose population overlapped into another county, by 2011 that number had extended to twenty-eight settlements, *vide* Appendix 4 *Ibid.*, *Populations of Towns or Environs/Suburbs which are located in more than one county*. In 2016 the list is probably well over thirty and is growing. For modern-day local government administration, such geographic expansion presents particular difficulty driven by the blinkered objective to manage single-settlement administration within a single county authority.

The frequency of such county-boundary 'straddling' now requires a more inclusive treatment for local governance purposes than this existing, blunt, solution of adjusting county boundaries. In implementing local governance reform since the 2011 census the first-phase in the current processes of local government has focused on the rationalisation and merging of county and city

units, sometimes with considerable, unresolved, controversy and opposition, as in the case of Cork.

A second phase in this process of Local Government rationalisation, addresses the dilemma of governance adjustments for some larger and expanding settlements. It is noted that the foresighted provisions of *Putting People First* proposes flexible arrangements for cases of straddling settlements. However, such aspiration is likely to require updated, matching legislation.

Those boundary revisions were undertaken under outdated 1991 Local Government legislation for Waterford City, Drogheda, Carlow and Athlone towns, in descending order of population size. The objective, to contain such settlements within a single county for administrative purposes and to redraw county boundaries where considered expedient. Such administrative ‘juggling’ was intended to be implemented regardless of the evident extent of local business, resident and sporting opposition. It was intended to secure rates-base adjustment despite creating further geo-physical anomalies. In Drogheda’s case the centre line of the Boyne was the original Elizabethan county boundary.

3. Drogheda – the grid-based evidence for a wider-based Boundary Review:

Despite the publication in 2013 of the Government’s visionary *Putting People First*, Action Programme for Local Government, the Department of Housing, Planning and Local Government (DoHCLG) attempted to undertake yet another review of Drogheda’s former Borough boundary under Section 28 of the now dated Local Government Act 1991 Act, rather than implementing the principles contained in the *Putting People First* initiative, in pursuance of the administrative objective to retain larger single settlements within a single county council area – even if this will entail other county boundary ‘transfers’ such as is proposed from Roscommon to Westmeath and from Meath to Louth.

It is necessary to distinguish the important and unique case of adjoining and merging high-density agglomeration for the immediate proximity of Drogheda and LBM, in contrast to low-density and/or geographically separated low-density ribbon development, elsewhere in Ireland.

Drogheda-LBM provides a unique situation (except for Dublin’s suburbs) in Ireland, where two adjoining plus-10,000 settlements are physically merging. The population growth evidence points to Drogheda continuing its demographic growth of up to three times that of the State population growth rate since 1996. Since then it became and continues to be Ireland’s largest town. This ongoing agglomeration momentum is supported by the recent provision and commissioning of a 100,000 population capacity waste-water tertiary treatment plant at Marsh Road, Drogheda with its linking sewer networks of investment and likewise with the completion of the District-level Shopping Centre at Southgate together with the re-commencement of further residential development that are consolidating the merger of Drogheda with LBM.

In the failed local government rationalisation programme, demographic scale was one of two principal issue in question that distinguishes this Boundary Review that marks Drogheda’s difference with all previous such revisions. This could have resulted in a sizeable population residing south of the Boyne being ‘placed’ in County Louth; affecting about 14,000 subject to the 2016 census results. This would have also involve a transfer to Louth of several additional square kilometres of what is now part of County Meath. In Drogheda’s case, previous county boundary

'adjustments' on a smaller scale had already resulted in the cumulative 'transfer' of a similar sized area south of the Boyne, from County Meath to County Louth.

The second issue is that of identifying the emergence of a new city on the demographic scale of Waterford City. Unlike Waterford, Carlow and Athlone, what differentiates Drogheda is the zero 'Distance' separation *cum* urban proximity of another large *i.e.* plus-10,000 town that presents the most significant factor for the future administration of Ireland's emerging city. All three other settlements are 'stand-alone' and unlike Drogheda, they do not adjoin another settlement of 10,000-plus.

Of itself LBM is Ireland's thirty-fifth largest town and in 2011 it was on a par with Ashbourne as one of Meath's largest towns. The boundary review documentation shows Drogheda's proposed indicative and blue-hatched boundary line to the south of the current Borough area of Drogheda which will result in the town's new boundary extending to the western edge of LBM. To accommodate Drogheda's expansion it also would have been necessary to adjust its existing northern boundary line within County Louth which will affect a further 2,000-plus of the town's population.

With the more-expansive boundary that will include the two towns under the *Putting People First* initiative, this will result in a Louth-Meath unification, with Drogheda-LBM becoming Ireland's fifth largest city and that sub-region's logical administrative centre with a 2016 or 2021 population greater than that of Waterford City. The need for individual County Council HQ offices in Both Dundalk and Navan will no longer arise, with the resultant savings and rationalisation. With the emergence of Drogheda+LBM as a city, the boundary transferral of further Meath territory into Louth should become an administrative irrelevancy. Drogheda + LBM's confirmation as Ireland's next city would complement the North's earlier initiative to grant city status to both Lisburn and Newry, within the Dublin-Belfast Corridor.

4. Drogheda-LBM's Population Urban Field Grid Matrix

The Urban Field of the Drogheda-LBM Population Density Grid on a One Sq. Km. basis is applicable to the **OSI Discovery Series Map 43** (Fourth Edition, 1:50,000 scale) for the 2011 census population is set out in a population grid format, kindly provided by the CSO to this author in December 2015. The complete matrix for the twin settlement of Drogheda and LBM confirms a grid formation in a north-south depth of ten kilometre rows. The respective core populations are set out in an 'all-border' format, comprising fourteen medium-density central grids totalling 11,297 in population for LBM, located east of and next to the twenty grids totalling 37,669 for Drogheda.

In all, these adjoining 34 sq. km. grids comprise a **core** 2011 agglomeration population of 48,996 with an average density of 1,440 people per sq. km., set out as follows:

Drogheda-LBM 2011 census Population Spread – OSI Map Grid References:

Grid cells	<u>6/7</u>	<u>7/8</u>	<u>8/9</u>	<u>9/10</u>	<u>10/11</u>	<u>11/12</u>	<u>12/13</u>	<u>13/14</u>	<u>14/15</u>	<u>15/16</u>	<u>16/17</u>	<u>Totals</u>
79/80	131	54	86	9	28	107	58	97	40	37	-	647
78/79	26	6	27	59	58	84	52	83	5	-	-	400
77/78	20	17	61	16	449	153	79	65	99	-	-	959
76/77	74	219	2,643	3,308	2,423	10	5	80	489	306	-	9,557
75/76	1,212	1,534	3,226	3,553	823	5	46	112	275	1,059	-	11,845
74/75	1,028	3,631	3,183	2,727	2,411	2,470	673	752	748	691	-	18,314
73/74	73	553	494	705	435	861	56	13	1,224	2,162	185	6,761
72/73	42	20	80	62	45	13	106	11	90	705	392	1,566
71/72	5	25	87	-	85	5	15	20	35	443	1,378	2,098
70/71	51	25	5	61	76	43	52	253	223	21	8	818
Total	2,662	6,084	9,892	10,500	6,833	3,751	1,142	1,486	3,228	5,424	1,963	52,505

Footnote:

So as to maintain local anonymity, the CSO records a count of '5' where grids have recorded census populations of between 1 and 5. Zero-populated grids are as shown. So as to make the interpretation of the grid more manageable, it limits the matrix size to eleven kilometres in width and ten kilometres in depth. It is however recognised that this surface area is therefore somewhat smaller than that of the Drogheda and District area (population 60,646 in 2011) and somewhat smaller again than the Louth and Meath Rural Areas plus Drogheda Borough (CSO population 78,594 in 2011 and 83,042 in the Preliminary Census data of 2016). It is of a size that captures the adjoining Drogheda and LBM towns and their contiguous environs.

Based on the 2011 census demographic outcome there is today, little physical or demographic separation between the settlements of Drogheda and LBM. This is confirmed in the Ordnance Survey of Ireland Map 'spine', of an unbroken high-density 'band' of population in adjoining grids. This central 'spine' extends east-west for ten square kilometres, identified in an axis along the grid 74/75 (including from references 6/7 to 15/16), as shown in the **one-kilometre cells** of this Discovery Series, map No. 43.

This is used as the grid-base for the CSO's grid matrix of populations based on the 2011 census, The west-to-east populations along this 'spine' grid line 74/75, comprises an aggregate population of 18,314, identified in their respective one sq. km. populations which is set out in the following Greater Drogheda's Urban Field Grid Matrix, showing this consolidated 'spine' cells extract, thus:-

	<u>6/7</u>	<u>7/8</u>	<u>8/9</u>	<u>9/10</u>	<u>10/11</u>	<u>11/12</u>	<u>12/13</u>	<u>13/14</u>	<u>14/15</u>	<u>15/16</u>	<u>Total</u>	Sour ce: Part of the CSO
74/75	1,028	3,631	3,183	2,727	2,411	2,470	673	752	748	691	18,314	

population grid one-kilometre square matrix dimension, as requested and kindly provided to Brian Hughes, December 2015.

The six left-hand side Drogheda grids, east to include grid 11/12, are immediately followed by the four right-hand LBM ones from 12/13 eastwards. This agglomeration spine' for Drogheda-LBM conclusively presents an interfacing and uninterrupted population density for these adjoined settlements. Furthermore, these 'spine' data represent just one row of a ten-row deep matrix. Their spatial argument, confirming this twin-settlement merger for Drogheda-LBM, is based on this east-west spine of the 110 adjacent population grids as laid out in the full matrix grid. These identified ten adjoining 'spine' square kilometre cells having an average population density of 1,831.4 which is higher than the density of any of the four provincial cities in Ireland in that 2011 census.

A significant distinguishing feature between 'ribbon development' morphology and a dense, continuous 'urban field' is the extent and depth of development. This author avers the selection of one-kilometre-square grids which is a spatially significant one; a measure in linear terms which is ten-times that of the 100 metre UN distance. However, in evaluating the process of urbanisation for evolving large settlements and in allowing for pockets of undeveloped land or of large underdeveloped sites, it is also desirable to balance 'space' area with density, discussed as follows, in using the example of the linking of Dundalk with its adjoining seaside suburb of Blackrock, Co. Louth

5. Dundalk and Blackrock – a Grid Comparison with Drogheda-LBM:

For Ireland second largest town - Louth's County Town, Dundalk and its seaside suburb of Blackrock is centred to its south at some three to four kilometres remove. All together they comprise a 2011 census settlement population of 37,816, where the Blackrock area comprises 6,500 of its total population. Blackrock is adjudged to conform to the U.N. distance rule and thus to be included as the southern part of a single Dundalk settlement.

However, the one-kilometre square grid populations, when compared with the above Drogheda-LBM grid, reveals that its **linking cells** are less dense than those comparable ones for Drogheda-LBM, the latter settlement's identified linking cell density being diluted to 328, 482, 117 and 853 persons per square kilometre because of the presence of an 18-Hole golf course at Haggardstown. They are set out in a similar **OSI Grid-map Discovery Series No. 36** (2007) format including the specified grid-cell references, as follows:

Dundalk-Blackrock 2011 Census

Population Grid – OSI Map References:

Cells	02/03	03/04	04/05	05/06	06/07	07/08	08/09	Totals
09/10	158	676	380	276	-	50	88	1,628
08/09	236	2,650	1,799	120	362	-	54	5,221
07/08	35	2,232	2,314	1,807	1,854	753	272	9,267
06/07	90	1,024	1,304	4,360	2,872	50	19	9,719
05/06	97	85	637	2,802	2,105	-	-	5,726
04/05	52	69	29	378	328	117	-	973
03/04	66	39	67	255	482	853	-	1,762
02/03	109	83	159	471	2,028	599	-	3,449
01/02	6	27	21	31	331	-	-	416
Total	849	6,885	6,710	10,500	10,362	2,422	433	38,161

Source: CSO Population

Note: The boxed grids delineate the Dundalk-Blackrock ‘spine’, which runs in a north north-west south south-east axis.

The distorted result of applying the aforementioned 100 metre U.N. distance criterion on its own, instead of utilising density-proximity measurements is that it masks Ireland’s few emerging cases of urban agglomeration. **Such density research is vital to the task of settlement selection in the forthcoming National Spatial Framework.** From a side-by-side comparing of the two sets of grid population data, the Drogheda-LBM scale and size of urban agglomeration is far superior to that of Dundalk-Blackrock. Hence, the following comparisons are instructive:

- One Km. Grid Size: Drogheda-LBM = 110 sq. km; Dundalk-Blackrock = 63 sq.km.
- Total Grid Populations: Drogheda-LBM = 52,965; Dundalk-Blackrock = 38,161.
- Linking 2-grid Populations: Drogheda-LBM = 1,425; Dundalk-Blackrock = 810
- 2011 Populations: Drogheda = 38,578; Dundalk (excluding Blackrock) = 31,316
- 2011 LBM and Blackrock Populations: LBM = 10,889; Blackrock = 6,500 (*vide* Grid).
- Densest LBM cell = 2,162; densest Blackrock cell = 2,028 population.
- Void cells: Drogheda-LBM = 9 cells; Dundalk-Blackrock = 9 cells.

From a governance standpoint given these brief empiric comparisons and their resultant evidence bases, the NSS description of Drogheda’s status and presumed ‘function’, which is officially described as a ‘support’ town to the Dundalk Gateway, reflects a “tail wagging dog” assessment, focused on a misguided focus of retention of the current ‘county-town’ *status quo* arrangement.

It also reflects a rigid local governance mind-set of one that refuses to address the density and scale-size evidence of Drogheda’s agglomeration with LBM. This is buttressed in selectively using the U.N. Distance Rule for settlement separation whilst choosing to ignore the fact that Dundalk inclusive of Blackrock’s 2011 population is less than that of stand-alone Drogheda, without LBM.

6. Grid Spine Test: comparing Drogheda with Dundalk's contiguity:

In analysing the population densities of the central spine cells that attach the respective adjoining settlements, it is possible to clarify the respective levels of agglomeration of Drogheda+LBM compared with Dundalk including Blackrock Co Louth, in 2011.

By definition, the Dundalk-Blackrock infill typifies a ribbon infill morphology which is essentially fixed because of the aforementioned presence and hollowing-out effect of its 18-hole golf course. Along the west side of the golf course, another 'ribbon' development links Dundalk southward to Blackrock represented by the cell grids of 378 and 255 populations. In contrast, Drogheda's higher density link-cells already exhibit much superior densities, despite still having further infill-land development potential. First are shown the data of Dundalk's spine cells:

Dundalk's spine cells:-

<u>03/04</u>	<u>03/04</u>	<u>04/05</u>	<u>05/06</u>	<u>05/06</u>	<u>05/06</u>	<u>06/07</u>	<u>06/07</u>	<u>06/07</u>	<u>Total</u>
<u>@09/10</u>	<u>@08/09</u>	<u>@07/08</u>	<u>@06/07</u>	<u>@05/06</u>	<u>@04/05</u>	<u>@03/04</u>	<u>@02/03</u>	<u>@01/02</u>	
676	2,650	2,314	4,360	2,802	378	482	2,028	331	16,021

Source: OSI Grid-map Discovery Series No. 36 (2007): west-east first, followed by their north-south coordinates for these nine one-kilometre square populations.

For convenience of easy comparison, the corresponding Drogheda spine cells are shown alongside, as follows:

Greater Drogheda's consolidated 'spine' cells extract, thus:-

<u>6/7</u>	<u>7/8</u>	<u>8/9</u>	<u>9/10</u>	<u>10/11</u>	<u>11/12</u>	<u>12/13</u>	<u>13/14</u>	<u>14/15</u>	<u>15/16</u>	<u>Total</u>	
<u>@74/75</u>	<u>1,028</u>	<u>3,631</u>	<u>3,183</u>	<u>2,727</u>	<u>2,411</u>	<u>2,470</u>	<u>673</u>	<u>752</u>	<u>748</u>	<u>691</u>	<u>18,314</u>

Source: Part of the CSO population grid one-kilometre square matrix dimension, as kindly provided to Brian Hughes, December 2015.

Thus Drogheda's interface with LBM is at the point shown as where cell (population) 2,470 meets 673; the corresponding Dundalk interface with Blackrock is at the point where population cell 2,802 meets 378. The next respective cells show respective populations of 482 for Dundalk's Blackrock and 752 for Drogheda's LBM.

Accordingly, the Drogheda link-cells are noted as being significantly denser in populations than those of Dundalk's. The lower densities for Dundalk's link cells are explained primarily by the positioning and location of the aforementioned golf course. Yet, the contrasting case of Drogheda's potential is noted as one where these specific cells contain residentially zoned lands which remain to be developed and thus will become denser.

Contrasting these two sets of adjoining settlements, it is noted that the NSS 2002 strategy had obviously ignored Drogheda's agglomeration with LBM as being one that then suggests linear dis-contiguity and would not have had the parallel evidence of density and proximity as adduced above. In contrast, the NSS had sought to rely solely on the formulation of far-fetched 'Linked Gateway' and 'Linked Hub' concept, where average distances are some 19 miles (30 km.) separating individual settlement populations in the 20,000 to 100,000 range (for Letterkerenny with Derry), but typically for settlements of about 14,000 to 20,000 (e.g. Athlone, Tullamore and Mullingar) with distances of up to 59 km.

Therefore, it is apposite to address the demographic data supporting the Drogheda-LBM agglomeration as Ireland's next city: one that matches the demographics of fifth-city Waterford, based on comparative evidence of selected growth centres, including that of Dundalk.

7. Demographics and the Drogheda-LBM Growth Momentum:

Pending receipt of the 2016 final census figures, the data set out in the attached Appendix below summarises the 2011 composition of the Greater Drogheda Area and of its sphere-of-influence components, namely the Louth and Meath Rural Areas included in the existing Drogheda Borough, all comprising a 78,594 population total in 2011 (83,042 in 2016 Preliminary census) – i.e. more than twice the population of County Longford. Due to the much faster rates of growth since the 1996 census, this Appendix confirms that population total in 2011 is almost evenly split between the north and south banks of the Boyne and is likely to have a south bank majority, judging from the respective, superior, ED population growth as per the Preliminary 2016 census.

Given the locational advantages of the south bank area, including the south suburbs of Drogheda and LBM, especially given its accessibility to Dublin, the Airport and the M50, it is unsurprising that the two towns are now well advanced in their agglomeration with one-another, boosted by the rate of population growth: one that is an historic multiple times that of Waterford city. Also noted, compared with Dundalk's 10,880 'at work' figure Drogheda +LBM's total in the 2011 census was 15,540, resulting in Dundalk being 69.48% of the latter.

As already noted, this unique case of Drogheda-LBM is not repeated in the three other proposed boundary review cases of Waterford, Carlow or Athlone, all of which are stand-alone settlements and are not remotely adjoined to another large town. It is also observed that in the 2011 census, LBM itself was larger in population than Enniscorthy, Tramore or the county towns of Wicklow or Cavan.

Accordingly, the nature of the current Boundary Review and its Terms of Reference misrepresented what has been happening on the ground and are both short-term in effect and are unfit for purpose in addressing the wider demographic picture, *vide* Appendix.

8. The Greater Drogheda Population Urban Field:

These data sets provide incontrovertible evidence of the Drogheda-LBM progress in their agglomeration with each other, based on the 2011 census and the population disposition of Greater Drogheda Area's population growth. In the twenty years since 1996 the former Municipal Borough of Drogheda together with the adjoining Louth and Meath Rural Areas has increased by a massive 78.77% (46,451 to 83,042) at a time when Ireland itself has grown by 31.22%.

The *Preliminary Report* on the CSO 2016 Census has provided the earliest direct comparison at the Rural and Borough Electoral Districts with the populations of the 2011 Census *Preliminary Report*. Given the young age profile and family formation propensity of the more recently established population growth south of river, the argument in favour of amalgamating the Greater Drogheda Area population, but especially that of Drogheda with LBM with their intrinsic growth momentum, is both a persuasive and realistic one.

As has been found possible for the CSO to recognise Dundalk with Blackrock (Co Louth) as comprising a single settlement, it is consistent to argue similarly for Drogheda and LBM's agglomeration as a unified urban field, based on the evidence contained as follows, in this Paper. It is also noted that complementing the developments south river, the Northern Fringe strategic plan to link Drogheda Port with the M1 will also provide for the development of the Louth CC-purchased land with the potential for 7,000 additional housing units and supporting infrastructure.

Next is examined the relevant referred-to, internationally-applied standardised methodology for city agglomeration and contiguity.

9. Harmonised European Union (HEU) Definition of 'City'

The final area of this Paper's research focuses on the EU's new set of rules for defining cities, kindly brought to one's attention by the CSO. Until 2015, there was no harmonized definition of 'a city' for European and other countries member of the Organization for Economic Co-operation and Development (OECD). This undermined the task of comparability, and also the credibility, of cross-country analysis of cities. To resolve this problem, the [OECD](#) and the European Commission has developed a new definition in 2015, of a city and its commuting zone.

This new definition works in four basic steps and is based on the presence of an '[urban centre](#)' a new spatial concept based on high-density population grid cells. Source: Dijkstra, L. and Poelman, L. (2015), *European Cities – Functional Urban Area Definition*, European Commission, DG Regio

- Step 1: All grid cells with a density of more than 1 500 inhabitants per km² are selected (Map 1.1).
- Step 2: The contiguous^[1] high-density cells are then clustered, gaps^[2] are filled and only the clusters with a minimum population of 50 000 inhabitants (Map 1.2) are kept as an 'urban center'.
- Step 3: All the municipalities (local administrative units level 2 (or [LAU2](#)) with at least half their population inside the urban center are selected as candidates to become part of the city (Map 1.3).
- Step 4: The city is defined ensuring that 1) there is a link to the political level, 2) that at least 50 % of the city population lives in an urban center and 3) that at least 75 % of the population of the urban center lives in a city (Map 1.4)^[3]

In most cases, as for example in Graz, the last step is not necessary as the city consists of a single municipality that covers an entire urban center and the majority of the city residents live in that urban center. This is not currently the governance circumstance in Drogheda+LBM.

10. Interpretation of the Harmonised EU Measures:

In the 2011 census Drogheda+LBM had twelve grids with densities of 1,500 and over, together with a further five with 1,000-plus populations. Dundalk+Blackrock's respective count is eleven and two.

In applying the above 4-step test and in comparing Drogheda+LBM with Dundalk+Blackrock the following observations are noted. Dundalk+Blackrock fails on the application of the Step 2 minimum population requirement of 50,000 whereas Drogheda+LBM exceeds that minimum population criterion, but as in the anomalous case of Waterford City, only so when the matrix of all adjoining grids are included.

Thus, when these kilometer-square grid cells of at least 1,500 population are identified, the test for 'contiguity' requires each of its surrounding eight cell cluster, in turn, to abut the one whose central cell has a population of at least 1,500 people.

In this context of 'compactness' this 'test' would be satisfied for the following grid cell disposition in the following extract for **Dundalk+Blackrock**, thus:

4,360	2,872	50
2,802	2,105	-
378	328	117
255	482	853
471	2,028	599
31	331	-

In identifying particular 'central' cells with their respective populations and their afore-mentioned 8-cell clusters, it is noted that 'clusters' 2,105 and 2,028 are contiguous with one another at the point (line) where cells 328 and 482 abut.

Where Drogheda adjoins LBM the same test for comparable cell clusters are shown, thus:

823	5	46	112	275	1,059
2,411	2,470	673	752	748	691
435	861	56	13	1,224	2,162
45	13	106	11	90	705

In this case, the core cell clusters of 2,270 and 2,162 are at one-remove from each other with respect to their surrounding 8-cell positioning. On that basis in 2011, Drogheda+LBM would appear to fail the second-step requirement for contiguity. However, should its specific cell, of 1,224 population of 2011, grow to equal or exceed 1,500 in a future (e.g. in the 2016 census), then the EU 50,000 minimum population criterion would appear to be satisfied, even omitting the low-density rows of cells from the top and bottom of the matrix.

Application of the HEU rule would therefore require the 18.40% shortfall to be eliminated in that 1,224-populated cell's 2011 population. In this regard, it is noted that this cell is fully positioned within the St Mary's Electoral District, which achieved an overall 11.12% growth (2011-2016) as per the 2016 Preliminary Census results. Depending on that actual, specific cell population performance, it is possibility that its growth performance may have already reduced or eliminated the 2011 shortfall, to be clarified once the full results for the 2016 census are available.

It is understood that Waterford's comparable cell structure for its 2011 census grid outcome likewise presents some similar dis-continuous anomalies. However, there appears to be provision for the individual EU State to be able to apply for a Derogation where a 'city' status already exists. Some six States have already availed of this Appeals' provision.

Significantly, the application of evidence-based population density grid data, at the standardised one square kilometre level as published in 2015, now provides an internationally-recognised methodology to avoid the urban classification problem of what constitutes a 'city'. It represents an accepted internationally recognised methodology for obtaining such insights that utilise such CSO data; which has been available only since 2013.

These tools should therefore be extensively utilised in the process of growth settlement selection in future national and regional-level spatial strategy plan formulation for Ireland.

11. Research Conclusions:

Pending the 2016 final census outcome on densities, the evidence adduced in this research, with its application of the Harmonised EU grid test informs the emergence of Ireland's next stand-alone city, Drogheda+LBM; one that is on a population scale-size with Waterford City but which is experiencing much more rapid growth. It is noted that the Preliminary 2016 population of 83,042 for the Greater Drogheda Area (GDrA) in 2016 represents a 78.77% growth since 1996 – two-and-a-half times the national average. Together Drogheda+LBM have a 30%+ larger and denser agglomerating population than that of Dundalk+Blackrock, Co Louth. Over 2011-2016 Waterford City's population increased by 1,637 to 48,369 or 3.50%, just below the national growth average: the comparative growth for Drogheda+LBM is 2.5 times that level, thereby reducing or even eliminating the former size difference with Waterford.

Significant built environment/ infrastructure projects and the demographic and growth-momentum data as presented herein, articulates the progress made by Drogheda-LBM to 2011 – thrice the rate of the State's population growth. The intervening five years to 2016 has seen the 'retirement' of the defective National Spatial Strategy including its conspicuous failure to recognise this most significant example of Irish urban agglomeration outside of Dublin. The 2002 NSS classification of Drogheda, where it was neither considered to merit a 'Gateway' nor a 'Hub' designation, but rather assigned a demeaning role as a 'support town' to Dundalk, was deeply flawed on urban economic and demographic-scale grounds. The comparative research evidence

presented in this Paper confirms that such spatial classification is perverse and is perhaps only explained as one that is politically-driven.

The forthcoming NPF is heralded as one that will use evidenced-based data in its construction and accordingly, is unlikely to ignore the emerging demographic evidence of urban agglomeration, for matrix field densification purposes, in settlement size classification and in placing Drogheda-LBM in the vanguard of Ireland's major growth centres. The east-west split (Table 3 above) of the State's population growth 2011-2016 was 132,850 versus 36,874 or 4.68% versus 2.37% growth (in the North-South line down to Youghal) and in dividing the Border Region into its three eastern and three western counties).

The background theory and application of grid-based measurement has been pioneered in Ireland by CSO's Dermot Corcoran, in his DIT Masters Dissertation (2011) *Disseminating Irish Census data using grids: An example of combining spatial and statistical information*. One is grateful to Dermot for providing the Drogheda and Dundalk 2011 grid data in excel format consistent with and based on the respective specified OSI maps, as referenced.

The previous use and application of Small Area Population Statistics (SAPS) has the drawback of their wide surface-area variations for comparing the populations of small areas such as Electoral Districts.

Pending Brussels' approval of Ireland's three NUTS 2 Super Regions, as provided for in the *Putting People First* Action Programme, this research will assist the County Louth's integration into the East Region (Map at Page 191, *ibid*). The agglomeration of Drogheda-LBM opens the path for this Government to undertake the process for the grant of city status. It will consolidate the growth of the Dublin-Belfast Economic Corridor, commensurate with Lisburn and Lurgan's recent acquisition of city status north of the Border. This research paper presentation to the Regional Studies Association has tracked the demographic progress of Drogheda and Laytown-Bettystown-Mornington as the engine within the fast-growing Greater Drogheda Area.

The Centenary of 1916 should be marked with appropriate examples of Ireland's progress and achievements. The 2016 census results have begun to emerge. The agglomeration of Drogheda-LBM now provides a significant centenary opportunity for this Government to confirm Drogheda as Ireland's next city!

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APPENDIX 1

The following 2016 Preliminary Electoral District Populations are compared herein together with the 2011 Census out-turn for the Greater Drogheda Area, thus:

Louth Rural Area:

Electoral District	2011 Population	Preliminary 2016	Population Growth	Percentage Growth
Clogher	3,031	3,237	206	6.8
Dysart	918	925	7	0.8
Monasterboice	1,342	1,365	23	1.7
Mellory	1,723	1,754	31	1.8
St. Peter's (pt)	6,990	7,605	615	8.8
Termonfeckin	<u>3,294</u>	<u>3,537</u>	<u>243</u>	<u>7.4</u>
Total	17,298	18,423	1,125	6.5

Meath Rural Area:

Electoral District	2011 Population	Preliminary 2016	Population Growth	Percentage Growth
Ardcath	1,911	1,945	34	1.8
Duleek	5,177	5,554	377	7.3
Julianstown	9,606	10,139	533	5.5
Mellifont	561	542	-19	-3.4
St. Mary's (part)	10,769	11,967	1,198	11.1
Stamullen	<u>4,696</u>	<u>5,001</u>	<u>305</u>	<u>6.5</u>
Total	32,720	35,148	2,428	7.4

Drogheda Borough Area:

Electoral District	2011 Population	Preliminary 2016	Population Growth	Percentage Growth
Fair Gate	9,806	10,317	511	5.2
St. Laurence's Gate	4,004	4,075	71	1.8
West Gate	6,042	6,284	242	4.0
St. Peter's (part)	2,161	2,099	-62	-2.9
Mary's (part)	<u>6,563</u>	<u>6,696</u>	<u>133</u>	<u>2.0</u>
Total	28,576	29,471	895	3.1
Greater Drogheda Area:	78,594	83,042	4,448	5.7

Note 1: Caution is required in above comparisons because the 2016 Census data are 'preliminary', pending publication of definitive census figures, in mid-2017. Preliminary State growth 2011-2016 was 3.7%.

Note 2: Drogheda Borough's population was recorded as 30,393 in the 2011 census, some 1,817 above the ascribed figure listed in the 2016 Preliminary census. Thus the Louth Rural area is shown above as 17,298 compared with 15,481 in the 2011 Census, in the CSO Area Volume, Table 6.

It is expected that the 2016 census, usually at Table 7 of the Area Volume when published, should confirm the combined settlement population of Drogheda+LBM to have exceeded 50,000. This brings into play the Harmonised European Union's four-stage density and agglomeration criteria as per nine-cell cluster measure for Graz, Austria, as set out in P. 12 of this Paper. As in previous inter-censal periods, for the Meath Rural Area this again is shown as the fastest growing part of the Greater Drogheda Area, and particularly so for the double-digit percentage growth of that part of the St. Mary's Electoral District south-east of Drogheda Borough. The confirmed growth of the specific cell – population, having 1,224 in 2011, vide P. 13 *super* – would then become the decisive factor in confirming the Drogheda+LBM urban agglomeration. Furthermore, and having regard to infrastructural provision, the housing crisis combined with implementation of the sequential spatial planning model for timely new, mixed residential development for this already-serviced part of Drogheda will future-proof the realisation of such agglomeration.

Greater Drogheda:– Demographic Growth Evidence from 1996-2011 Censuses

Analysis of Greater Drogheda in 2011:

SUMMARY:	Greater Drogheda: Urban and Rural North and South of Boyne						Share of	
	Borough	Add non-Borough	Town+envs. [Table 7]	L-B-M	Dr.+LBM	Rural (net)	TOTAL	Total pop.
North of River	23,830	2,202	26,032	0	26,032	13,279	39,311	50.02%
South of River	<u>6,563</u>	<u>5,983</u>	<u>12,546</u>	<u>10,889</u>	<u>23,435</u>	<u>15,848</u>	<u>39,283</u>	<u>49.98%</u>
Total	30,393	8,185	38,578	10,889	49,467	29,127	78,594	100.00%
Share:	=78.78%	=21.22%	=100.00%					

Analysis of Greater Drogheda in 1996:

SUMMARY:	Greater Drogheda: Urban and Rural Growth North and South of Boyne						Share of	
	Borough	Add non-Bor.	Town+envs	LBM	Dr.+LBM	Rural (net)	TOTAL	Total pop.
North of River	21,501	36	21,537	0	21,537	7,659	29,196	62.85%
South of River	<u>2,959</u>	<u>786</u>	<u>3,745</u>	<u>3,678</u>	<u>7,423</u>	<u>9,832</u>	<u>17,255</u>	<u>37.15%</u>
Total	24,460	822	25,282	3,678	28,960	17,491	46,451	100.00%

Growth in populations over the 15 years to 2011:

	Borough	Add non-Bor.	Town+envs.	LBM	Dr.+LBM	Rural (net)	TOTAL	Share of Growth
North of River	2,329	2,166	4,495	0	4,495	5,620	10,115	31.47%
South of River	<u>3,604</u>	<u>5,197</u>	<u>8,801</u>	<u>7,211</u>	<u>16,012</u>	<u>6,016</u>	<u>22,028</u>	<u>68.53%</u>
Total	5,933	7,363	13,296	7,211	20,507	11,636	32,143	100.00%

GDrA: % Growth: 15 years to 2011:

	Borough	Add non-Bor.	Town	LBM	Dr.+LBM	Rural (net)	TOTAL
North of River	10.83%	6016.67%	20.87%	0.00%	20.87%	73.38%	34.65%
South of River	<u>121.80%</u>	<u>661.20%</u>	<u>235.01%</u>	<u>196.06%</u>	<u>215.71%</u>	<u>61.19%</u>	<u>127.66%</u>
Total	24.26%	895.74%	52.59%	196.06%	70.81%	66.53%	69.20%

**Source: Analysis of CSO censuses of 1996 and 2011, by Brian Hughes,
extracted from the Area Volumes, 1.**

Note: In the CSO Preliminary 2016 Census Results the 2011 figure for St Peter's Electoral District was reduced by 1,817 from that recorded in the Area Volume for the earlier census (from 30,393 to 28,576. The CSO advise that this difference reflects a population and land area issue at the Preliminary census stage, which will be rectified in the final figures for the 2016 census, when released in the spring of 2017. Accordingly, the Drogheda Borough area has appeared to 'reduced' in population, by that 1,817 figure. Accordingly, in the population growth figures in Appendix 3, below the 2016 census changes have been omitted. The relevant north Boyne EDs are: Clogher, Dysart, Monasterboice, Mullary, St. Peter's and Termonfeckin. South river the relevant EDs are: St. Mary's, Ardcath, Duleek, Julianstown, Mellifont and Stamullen. It is noted that the St. Peter and St. Mary EDs are split into their respective Borough and rural contents reflecting the pre-boundary review position.

Next is set out this author's Critique on the Boundary Review Report for Drogheda and of its Relevance to the Growth Centre Selection for the Forthcoming National Planning Framework:

A Critique on the Boundary Review Report for Drogheda and of its Relevance to the Growth Centre Selection for the Forthcoming National Planning Framework:

Introduction: There is evidence to show that the four contemporaneous Reports (for Drogheda, Waterford, Carlow and Athlone) were completed with some haste and that they were over-reliant on following a standardised template of direction: to examine the four settlements without considering the possibility of nearby settlement merger. Accordingly this created a pitfall for the reviewers in the case of Drogheda's review because of its unique circumstances of its urban agglomeration with another +10,000-populated large town Laytown-Bettystown-Mornington. That review also ignored and up-to-date measures including the 2016 census evidence or the 2015 EU-OECD Harmonised Measure to capture agglomeration. The position of Drogheda is unique, as there is no evidence of a similar occurrence of scale agglomeration in any of the other three settlements reviewed.

Specifically, the reviewers ignored or more likely, were unaware of this standard OECD-EU Harmonised (2015) measure for assessing the formation of a city – perhaps this also reflects an inadequate Terms of Reference, but then Waterford city itself is under close examination and hence the questioning of its city size minimum of 50,000 by the EU for this precise reason! The suspicion of 'template' adherence is very evident in the content of the second-last paragraph at P. 44 with the Review Committee's focus just on the delineated Area of Interest and in their 'finding' of LBM as constituting an "adjacent rural area". The following specific observations are relevant:

Page 17, Last Paragraph: States "With regard to political representation, the Council held that a change in the boundary resulting in the loss of approximately 6,000 residents may have a knock-on effect on the composition of Laytown/Bettystown Municipal District, resulting in a decrease in the number of Council seats." This is a tacit recognition of the existence of a large block of population and Municipal District in LBM, albeit 'Mornington' is not included in the Laytown/Bettystown descriptive for this large town, recognised by the CSO as a 'town' since the census of the 1980s.

Page 18, First Paragraph: States "Meath County Council believed that proponents of the Drogheda City Status Campaign have taken the boundary review as an opportunity to promote their campaign. The Council was of the view that city status is separate from the question of the boundary review, but argued nonetheless that the creation of an additional city in the country is not justified. Any such city would lack the scale to compete internationally with other cities and is not supported by the Minister." – **Not so!** At the NUIM Launch of the National Planning Framework on February 2nd 2017, in responding to Dr Brian Hughes pointing to the evidence basis that supports The Drogheda City Status Committee's position, Minister Simon Coveney confirmed publicly that he and his Department will examine this evidence and will take it on

board in the formulation of the NPF and in any formal application for city status, see ‘Conclusions’, hereunder.

The issue of “lack of Scale” for Drogheda-LBM is refuted in current demographics which confirm a similar scale to Waterford City and that “the creation of an additional city in the country is not justified.” comment is not supported by this evidence. In the 2016 census there are over 41,500 people living on the north bank of the Boyne and a similar population resident on the sits south bank, i.e. comprising the Louth and Meath Rural Areas and the former Drogheda Borough. Specifically, this population has grown from 46,451 in 1996 to 83,042 in 2016, a twenty year growth of 78.77% compared with Ireland’s (State) population growth of 31.22% over the same twenty years.

Unlike Waterford, Drogheda-LBM is located just twenty minutes from a 29 million p.a. passenger movement Airport and twenty-five minutes from Dublin Port Tunnel, is growing at three times the rate of Waterford and is the largest settlement within the Dublin-Belfast Corridor, with its critical economic and geo-political role and strategic location. Following the precedent when Galway’s population exceeded that of Waterford in the 1980’s when it became a city, fast-forward to today and applying same precedent with the evidence-base is equally valid for Drogheda-LBM’s quest and application for city status.

Page 38, Last Paragraph: “5.5 Service Delivery (across the full range of local authority functions envisaged in the Action Programme for Effective Local Government, Putting People First and the Local Government Reform Act 2014). Meath County Council has focused significant investment in the Area of Interest, with €20.665m invested in the period 2001 to 2015. [see footnote 25]. Given the growth potential with 124.88 hectares of employment-zoned land,²⁶ it can be anticipated that the area will remain a focus for the Council, with ongoing investment in services into the future. ²⁶ Table 4.1 Meath County Development Plan 2013-2019.”

This Review Committee’s contradiction and failure to acknowledge the urban agglomeration between Drogheda and LBM is significant. This Page 38 section is at variance with the Page 44 section as this €20.665m ‘significant investment’ since 2001 to 2015 to facilitate future development. Another reason is their recognition of the “the growth potential with 124.88 hectares of employment-zoned land” and also ... Why build a Waste Water Plant south-river for a 100,000-people capacity and permit the construction of the nearby District-Level Shopping Centre at Southgate and grant planning permissions for thousands of further houses, if it was intended to remain a ‘rural area’ as was mistakenly described in the Boundary Committee’s Report?

Page 44, Second-last Paragraph: “The whole Laytown-Bettystown ED was not included in the Area of Interest (see section 4.2), and the Committee has identified no reason why this area should be included in County Louth, should the boundary be extended. The Report continues “...any extension into the adjoining rural area should ensure that any south-eastern expansion of Drogheda does not encroach on LaytownBettystown-Mornington and the distinct character of these settlements is retained.” **Incorrect!**

LBM is not an “adjacent rural area” or a series of “distinct settlements” as mistakenly describes what is Meath’s third largest town and Ireland’s 35th in the ‘Large Town i.e. +10,000 category’. In the 2011 census LBM had a bigger population than the County Towns of Cavan and Wicklow and it is also larger than the ‘large towns’ of Enniscorthy and Tramore. Furthermore as the grid analysis herein below confirms, LBM is agglomerating with Drogheda and is therefore unique and different from the other Boundary Reviews of Waterford, Carlow or Athlone, none of which have a large agglomerating nearby town similar to LBM unlike the case for Drogheda.

Conclusion: Given the 2016 demographic background, the biggest error of the Boundary Report is that it was hopelessly under ambitious in its delineation of a confined ‘Area of Interest’ in excluding LBM. Ironically, the whole Boundary extension exercise appears to have been unnecessary, if by its own findings and admission (P. 33) the management and administration of an overflowing urban settlement can be adequately addressed under the provisions of Sections 85 and 86 of the *Putting People First* new era for Local Government!

Accordingly, all of Greater Drogheda, i.e. the Borough Council area together with both the Louth and Meath Rural Areas should form the Area of Interest to be managed and administered by a greatly-strengthened Greater Drogheda Area Council, as an interim “agency arrangement” and a precursor to Drogheda-LBM City becoming the capital of the new Louth-Meath Sub-Region in the rationalising and transferring to this enlarged Authority the County Councils of both Louth and Meath from Dundalk and Navan, respectively, to the new city. Substantial economies of scale could then be achieved by a population which would be equivalent to the Administrative County of Fingal.

With the distractions of the Boundary Review Report removed, this provides the Minister and his Department to take a comprehensive and wider view of boundary, city status and the rationalisation of counties Louth and Meath into a single administrative sub-regional entity, based and located in Drogheda-LBM as ‘Whitaker’ city. Such measure would strengthen the geo-political and economic environment for the largest settlement in the Dublin-Belfast Corridor in this post-Brexit and post-Nationalist majority Northern Ireland Assembly era.

Accordingly, the Drogheda City Status Group intends to petition in applying to the Minister to consider the 2016 Census as the evidence-base as Ireland’s next city. The grid demographic evidence, when it is to hand on the next few weeks, will provide the opportunity to apply this evidence to the EU-OECD Harmonised Measure for assessment of Drogheda-LBM as Ireland’s fifth city, having equalled or exceeded Waterford’s population as at April 2016.

The precedence for this is Galway which became Ireland’s last city in the 1980s after its population had exceeded that of Waterford City. The need for another provincial city in the Rest of Leinster ‘province’ is likewise justified on population proportionality, given its larger population and the fact that Munster has three provincial cities in addition to Connacht’s Galway City, *vide* Table 1. Furthermore, the compelling case for strengthening the Dublin-Belfast Corridor in the all-

Ireland post Brexit context, is likewise endorsed as the first point, P. 37 of the NPF's '*Issues and Choices*' document.

In regard to towns and Municipal Districts, paragraph 6.4.2(c) states:

"However, in all cases the district should incorporate the relevant hinterland of each town, subject to the constraints imposed by county boundaries close to towns e.g. New Ross located adjacent to the Kilkenny/Wexford boundary, Carrick-on-Suir adjacent to the boundary between Tipperary and Waterford, or Athlone on the Roscommon/Westmeath border. In cases such as these, suitable agency arrangements or service level agreements ensure that one authority has responsibility for all functions (including development plans) and services throughout the entire area of the town, notwithstanding county boundaries." If this cannot be done then these Local Authorities should be merged.

An interesting demographic parallel and growth contrast to Drogheda itself is the town and environs of Sligo. Over the fifty-years since the census of 1966 Sligo's population has increased from 13,452 to 19,000 and Drogheda from 17,908 to 41,000 today (awaiting 2016 figure) i.e. respective growth rates of 41.24% and 128.95%. On locational grounds and as Connacht's second-largest settlement, Sligo was designated as a 'Gateway' in the discredited NSS while Drogheda was classified a third tier town 'status' alongside Carrick-on-Shannon! Since 2002 Sligo's population continues to decline. Hopefully the replacement NPF will pay greater attention to picking winners!

Taking account of Ireland's potential out to 2040 to attract net in-migration as the remaining EU English-speaking country, planning for such growth potential must receive appropriate attention in the formulation of the NPF. There is little merit in presuming that such additional population should be spread around the country so as to rebalance areas of low density. The policy should be that such additional population will be economically active and therefore needs to be located in areas of employment growth taking account of the nature and change of 'work'. Primarily this will be in Ireland's cities.

NPF Submission Conclusions: The NPF gives all relevant bodies a fresh opportunity to take a hard look at the viability of the differing aspects of rural Ireland. Some rural areas will thrive because of nearby successful urbanisation: many such areas will not respond to resuscitation as they are inherently and demographically defective. Like unviable towns, they will require hard decisions to be taken in the national and financial interests.

Recent developments and related announcements call into question the viability of providing internet connections to about 300,000 such homes that had earlier been earmarked for connection. Many such residences are in vulnerable flood-prone locations.

Bank branch closures follow in the wake of rural post offices with more in the offing. Garda stations, rural schools and even postage stamp costs are in the news. Rural pubs and drink-driving issues have been debated. The current Bus Eireann strike unintentionally, serves to identify defective and isolated locations. And yet many planning permissions continue to be granted for more one-off housing developments, supported by local politicians, many of which are inherently in such locations.

The hand of spatial strategy implementation is now being forced because of these bank and post-office closures and the realisation of the extent of rural isolation when buses are not running. Elderly people with health issues are particular vulnerable to geographic and social isolation with special and are especially vulnerable to predatory crime. On all fronts, the cumulative costs to the State cannot continue to be ignored.

Finally, rural politicians should bear particular responsibility for resolving such failures and there is a pressing need for all political representatives to familiarise themselves with aspects of urban and regional economics, location and core-periphery theory and to be *au fait* with the dynamics of new economic geography and the processes and benefits of urban agglomeration in the Ireland out to 2040. Otherwise, the NPF will succumb to the same fate as past spatial strategies, despite laudable intentions to place it on a formal statutory footing and in seeking to achieve political ‘buy-in’.

