



Making sense of suburbia: A spatial history of a small rural town in New Zealand

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ABSTRACT

Theories of urban planning are often associated with particular movements such as Modernism and New Urbanism, or with key thinkers such as Jane Jacobs, or urban designers such as Kevin Lynch and Jan Gehl. However, much planning activity proceeds privately and at a small scale, or “street-by-street,” so to speak. Only upon later reflection do patterns or trends seem to emerge. This discussion tracks changes in urban planning thought and practice by close scrutiny of the largely unremarkable unit of urban planning practice: the suburban residential subdivision. Analysis and interpretation centres on the establishment in the mid-nineteenth century of a very small rural village in the South Island of New Zealand, and the growth that has occurred subsequently. Changes in town layout in plan or overhead view over time is a principal tool for analysis in this discussion accompanied by contextual or explanatory argumentation. It is concluded that both incrementalism and major shocks, or seismic shifts, serve to perpetuate rather than disrupt or significantly alter the standard urban planning typology of privately-owned single homes on land parcels of between 500-1000m², or the stereotypical ‘quarter acre’ dream as it often referred to in New Zealand.

Keywords: incrementalism; neo-liberalism; private development; low-density; quarter-acre ruralism; seismic shocks; suburbia

1. INTRODUCTION

Theories of urban planning are often associated with particular movements such as Modernism and New Urbanism, or with key thinkers such as Jane Jacobs, or urban designers such as Kevin Lynch and Jan Gehl. However, much planning activity proceeds privately at a small scale, or ‘street-by-street’, so to speak. Only upon later reflection do patterns or trends seem to emerge. This discussion tracks changes in urban planning thought and practice by close scrutiny of the largely unremarkable unit of urban planning practice: the suburban residential subdivision. Analysis and interpretation centres on the establishment in the mid-nineteenth century of a very small rural village in the South Island of New Zealand and the growth that has occurred subsequently. The town, called Lincoln, has for much of its history 150-year history had a population of less than 1500 inhabitants. Over the last two decades, however, Lincoln has more than tripled in population to now carry nearly 5000 inhabitants and it looks set to keep expanding in a

broader context of long-term decline in many rural populations elsewhere in New Zealand.

The methodological approach taken in this study is to couple an historic narrative with historic town planning maps. This allows changes in urban planning thought and practice over time to be tracked (or evidenced) in the urban form as it grows over time. In addition, this study is underpinned by the fact that two of the authors live in Lincoln while all three authors work at Lincoln University that is less than a kilometre away. Unlike other studies, where residents, planners, developers and builders are often interviewed and maps act as illustrative extras we have chosen to focus on the particular spatial representation, or misrepresentation, that maps provide. This is partly because Lincoln is a small town where most people know each other’s business and because there are great sensitivities locally about who has bought or sold what piece of land for development purposes and who has exerted influence in local body politics. Therefore, we do not examine landholders or developers specifically as feelings are still running high in

some quarters about who has profited from residential subdivision in Lincoln. Also, we do not go into detail about the way houses are constructed, how they look, or how the streetscape has changed over time. In essence, they have not changed much at all. The single family home on a section with a garden is the overwhelming norm. Lincoln, to all intents and purposes, now resembles the classic image of quiet suburbia. We prefer instead to ask if the changes in town layout as shown through maps over time can tell us about the influence of larger planning theories and trends. We conclude that even with a major natural disaster event such as the Canterbury earthquakes of 2010-2012, there has been little radical change to the town-making typology over the past 150 years. Low-density suburban development centred on the single family home connected by access roads appears to be a durable or obdurate form, depending upon one's point of view. We believe that it is important to understand the factors that perpetuate 'the quarter acre dream' rather than attempt to dismiss or leave it unanalysed as a phenomenon. In other words, we think it important to study things as they have happened, rather than what theorists and planning practitioners think should or should not have happened. The 'so what' of this discussion hinges on our belief in the importance of establishing the growth patterns first, and then applying interpretation, rather than making case studies fit existing theory.

2. SUBURBIA IN PLANNING THEORY

The terms 'suburb', 'suburban' and 'suburbia' are difficult to separate from polarised views of what has happened in urban planning and urban growth over the past century. At one time suburb merely meant land between a town and surrounding farms or land which closely adjoined the town or city core. In New Zealand in 1849, for example, as plans for a new settlement called Canterbury were being drafted, the initial specifications for urban and rural land sections were 1000 acres of town land divided into half-acre town sections, 1000 acres of 'suburban' allotments of ten acres adjoining the town, and rural sections of no less than fifty acres on the surrounding agricultural plains (Retter 1977, p.38). In the latter half of the twentieth century, influential writers such as Jane Jacobs, Lewis Mumford and William H. Whyte launched stinging assaults on urban planners and their tolerance, if

not outright encouragement for growth outside of cities in the suburbs (Jacobs 1961; Whyte 1956; Mumford 1966). In more recent times, suburbia has come to represent everything that has gone wrong with urban planning and society at large in terms of declining social capital (Putnam 2000). It has been a constant target for those espousing principles of New Urbanism and a return to the typology of the 'traditional neighbourhood'. It is often difficult to dissociate suburbia from the pejorative term 'sprawl' (Kunstler 1993; Duany, Plater-Zyberk, and Speck 2000). The most frequently-cited paradigm for deadly suburbia in these and other publications is the Levitt Brothers' 'Levittown', three versions of which were established in New York, Pennsylvania and New Jersey between the late 1940s and the early 1960s.

From ecological and environmental perspectives critiques of suburban sprawl seem valid: suburbia combined with excessive dependence on private motor vehicles worsen greenhouse gas emissions and this is unsustainable. Sprawl also exacerbates inner city decline which has severe implications for municipalities and those urban dwellers who cannot relocate to newer developments. What is less clear is whether the social and cultural consequences of urban growth by suburban expansion are harmful and undesirable and whether, in a post-fossil fuel dependent world, suburbia will seem like a catastrophic and disruptive maladaptation. Even so, some commentators have attempted to refute the more simplistic critiques of suburbia as wasteful of land (Bruegmann 2005) or harmful to social capital formation and retention (Brueckner and Largey 2006).

Other, more even-handed studies of suburbia have shown that life in low-density residential subdivisions is no worse than higher-density living environments, and that more nuanced degrees of adaptation by homeowners to make their places stand out and impress their neighbours takes place than is acknowledged. For example, Robert Venturi and Denise Scott Brown are best known for their counter-commentary on the value of commercial, roadside architecture to argue that imagination and creativity are to be found there even if it is not 'high culture' (Venturi, Scott Brown, and Izenour 1972). What is less well-known is their application of this interest in adaptation and differentiation to the average American suburb, most notably in their 'Learning

from Levittown or Remedial Housing for Architecture' studio at the Yale Department of Architecture in 1970 (Lautin 2010). For them, as is probably the case in the minds of many suburban dwellers, the private residential house and section can be a site for self-expression and the vernacular. In other words 'difference' can be expressed in very subtle ways.

The most notable close reading of suburban life remains Gans' *The Levittowners* (Gans 1967). The principle finding of that study, where Gans lived in the new community as a participant observer, was that social ties and sociability were no more weak or absent than in urban areas such as Boston's West End, which Gans had studied earlier (Gans 1962). His interviews with Levittown residents confirmed that there was a sense of community even if the forms it took seemed more passive and very localised compared with traditional public life in inner city neighbourhoods. Of greater interest for planners was Gans' painstaking attention to the ways in which the Levitt family, or more correctly, father and brothers, saw themselves as community-builders in their own right. He documents their initial plans, battles with municipalities, battles with their own project managers and consultants to produce far more than simple financial profit, although that of course was paramount.

It is also easy to overlook the fact that private developers have often imbibed the ideas and visions of key planning figures. Rybczynski's *Last Harvest* highlights the influence of Frank Lloyd Wright's Usonian house design on Levittown:

'The Great Neck house, one of the first Usonians, was larger than the houses that the Levitts would build; it cost \$35,000 and took ten months to construct, but it had a powerful effect on the young Alfred [Levitt].' (Rybczynski 2007, p.160)

In Rybczynski's narrative about the creation of New Daleville (a new development near Philadelphia in the early 2000's), the principle linkage between a developer's actions and high planning ideals is not with Wright but with New Urbanism. Just as the Levitts had to modify and moderate the ideals of Wright in order to democratise utopia in suburban form, so private developer Joe Duckworth (who was influenced by Andres Duany and Seaside, Florida in the mid-1990s) had to compromise in order to realise his

vision of a neo-traditional community in peri-urban Pennsylvania. The underlying point made by Rybczynski, and this is reinforced by Jackson in *Crabgrass Frontier* (Jackson 1985) is that suburb-making, for North America at least, is the principal form of urban development. Clever inner city redevelopment notwithstanding, there is little likelihood that the appetite for private home ownership in low-density neighbourhood will change.

Although patterns of urbanisation in North America, should not be read as a desirable trend at a global level, Jackson anchors the phenomenon in a characteristically American outlook of middle-class aspirations:

'The United States has thus far been unique in four important respects that can be summed up in the following sentence: affluent and middle-class Americans live in suburban areas that are far from their work places, in homes that they own and in the centre of yards that by urban standards elsewhere are enormous.' (Jackson 1985, p.6)

Jackson adds: 'Only New Zealand, Australia, and Canada, all with strong frontier traditions, small populations, and a British-induced cultural dislike of cities, share the American experience.' (Jackson 1985, p.7). Lincoln would appear to qualify as a classic frontier town.

3. LINCOLN TOWNSHIP 1862-1948: INCREMENTAL GROWTH

The person responsible for the establishment of Lincoln was James Edward FitzGerald, an Irishman with strong connections to the Canterbury Association¹. An ambitious politician and social reformer, but an indifferent farmer plagued by heart problems from an early age, FitzGerald worked as Secretary for the Association in 1849. The main goal of the Association, in effect a private settlement organisation, was to establish an agricultural colony of small farmers and labourers, backed by the Church of England. The fact that the six main European settlements of New Zealand other than Auckland were created by joint stock or subscription-based private companies linked to the New Zealand Company is sometimes overlooked in the limited coverage of planning history per se in this country (Burns, 1989). Historians, however, have made much of the impetus of private land speculation as the driving force of colonisation whether as critique of

¹See Bowring et al. 2001, pp. 51-56, Penney (1979) and Singleton (2007) for a more detailed history of Lincoln

social inequality within European society (Eldred-Grigg 1980) or as the reason behind the ruthless dispossession and oppression of the indigenous Māori (Burns and Richardson 1989; Evison 1997). In the South Island of New Zealand this speculation manifested as the carving up of the majority of arable land into sheep stations or pastoral runs, either privately owned or leased from the Crown. FitzGerald, in partnership with other businessmen, leased some 27,000 acres (11,000 hectares) of pastoral runs in the 1850s, later freeholding some 3000 acres (1200 hectares) of that land in the early 1860s. This was known as the 'Springs Run' (Acland, 1951).

Many of the names associated with the Canterbury Association are mentioned in the context of what appeared to be shameless land-grabbing in the narratives referred to in the paragraph above, especially in relation to land purchases from Māori. FitzGerald, by contrast, is seen in a slightly better light (McAloon 2006, p.207) and in the case of Lincoln, which was carved out of the remaining 3000 acres of the syndicate-owned pastoral run FitzGerald seems to have invested some personal sentiment in the exercise. He named the streets after himself, members of his family and the family seat in Ireland. True to Association ideals, however, Lincoln was located near the nominal site of one of six projected agricultural towns to be strategically sited on the 300,000 acres that comprised the prime arable land on the Canterbury Plains. It is worth noting at this point that the intended sizes of towns, according to original Canterbury Association plans in 1848, was 1,000 acres for the main town, five hundred acres for the port town and five hundred acres for the 'secondary towns', each to be laid out in quarter-acre sections (Retter 1977, p.25). FitzGerald's town was far more modest in scale covering little more than 80 acres (33 hectares). A Market Square was included in the design but was not actually surveyed off formally and businesses were distributed along the main street running east to west.

The original layout for Lincoln is shown in Figure 1. FitzGerald chose this part of his estate for at least two reasons. The easy availability of fresh running water for setting up a flour mill was a key consideration in setting out a town because by the early 1860s wheat-growing had outstripped returns from sheep and dairy farming. The first mill was not established until 1867 but others followed (Bowring et al, 2001). Slow running, spring-fed creeks and streams were a scarce

phenomenon on the plains. And in a sense FitzGerald was merely reproducing in miniature the approach taken by Association surveyors in the siting of Christchurch in 1850 (Montgomery 2006). In Christchurch the town was deliberately overlain on top of a meandering river and the reasoning was both for navigation by boat i.e., trade access, and because it was regarded as a healthy amenity for citizens. The other reason was that a crossroads had been made already which connected outlying properties and farms with the city. Although original sale plans do not appear to have survived, the original layout is consistent with the streets and proportions of the town centre that exist in the present day. Newspaper advertising of June 1862 shows that FitzGerald divided the town into quarter-acre sections with a price of £12 per section (Singleton et al. 2007, p.296).

It is evident that FitzGerald applied the standard rectilinear grid, a common typology in colonial settlement, and it was only varied here because of the run of the river and the need to accommodate already established road lines. Also in keeping with convention FitzGerald named the roads around the edges as 'North Belt', 'West Belt', 'East Belt' and 'South Belt'. Four main blocks of twenty-four quarter-acre town sections were laid out which produced twenty-five acres of neatly disposed parcels of land to the west. Another twenty-five acres of land was laid out less uniformly to the east. Lincoln was therefore a town with a putative total area for housing of fifty acres or just over 20 hectares and we have projected onto this 1862 plan the configuration of sections that appeared in the years that followed (see Figure 1). The total area within the original

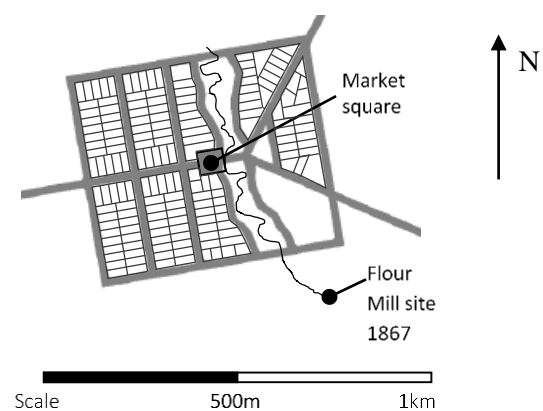


Figure 1. Original layout of Lincoln Township in 1862 with an estimation of section layout. Derived from More (2011) and LINZ (2016)

grid shown in Figure 1 was approximately 81 acres or 33 hectares which would have allowed for roads and public spaces and a number of larger and smaller than average sections to cope with the asymmetrical form caused by existing features. The town roads as shown are to some extent fanciful; they would have been little more than lines marked on the ground or graded tracks at best for several years during the 1860s and even well into the twentieth century many of the town roads remained unfinished. For the sake of consistency we show them as made in all illustrations.

The fact that FitzGerald created a town of only fifty-acres of residential sections when the original Lincoln envisaged by the Canterbury Association was to be 500 acres in size reflects the limited demand for town sections away from Christchurch or the port during the first ten years of settlement. It is important to note that the Canterbury Association had a distinctly anti-urban attitude to settlement. They favoured several market towns of equal size and a capital that was only twice the size of those towns (Retter, 1977, P.25). Life in the new settlement was to be low-density but civilised and FitzGerald respects this sentiment in his model town. In any case there would, in principle, have been nearly 200 quarter acre sections available for purchase in 1862. Not all would have

been sold immediately. Those with spare cash or capital, merchants in particular, would have bought several adjoining sections at once in order to gain premium locations with room for expansion. A slow but steady infill of single family homes and small businesses followed over the next several decades. By 1948 the population had grown to 400 and the number of houses totalled 102 (Jackman, Mason, and Densem 1973, p.3)

In fact, as can be seen from Figure 2, the only major change visible from an overhead perspective over the next eighty years is the addition of a branch railway and the establishment of schools and recreational domains to the north. Whether it was deliberate or not these moves had the effect of helping to create a greenbelt or at least a buffer beyond the formally labelled town belts. The railway line may not appear relevant in terms of broader planning paradigms, however towns throughout New Zealand scrambled to be included in the freight and passenger connectivity afforded by rail transport. Branch railways were possible only after the Vogel government intervened in economic and infrastructure planning at the national level in the 1870s by borrowing heavily to fund the building of public assets such as schools and railways. Branch railways extensions no doubt cemented Lincoln's slow but steady development.

To the extent that growth was steady but slow Lincoln fits unexceptionally into local history narratives that cover the wider district (Penney 1979; Ellesmere Camera Club. 1997; Singleton et al. 2007). Most rural towns in the area did the same. The most distinctive difference, however, is the establishment nearby of a number of central government institutions in the decades following the town's founding. The Provincial Government purchased 250 acres of land on which Canterbury Agriculture College (later Lincoln University) was established in 1880. (Jackman, Mason, and Densem 1973, p.2). Crown scientific research agencies such as the Wheat Research Institute, created in 1928, and an expanded Agronomy Division, set up in 1936, took up large areas of land to the south and west between the college and the township (Galbreath and New Zealand. Department of Internal Affairs. Historical Branch. 1998, pp.39-47). These facilities carried, and continue to carry, special land zoning designations that for many decades limited expansion, subdivision or alternative non-rural activity.

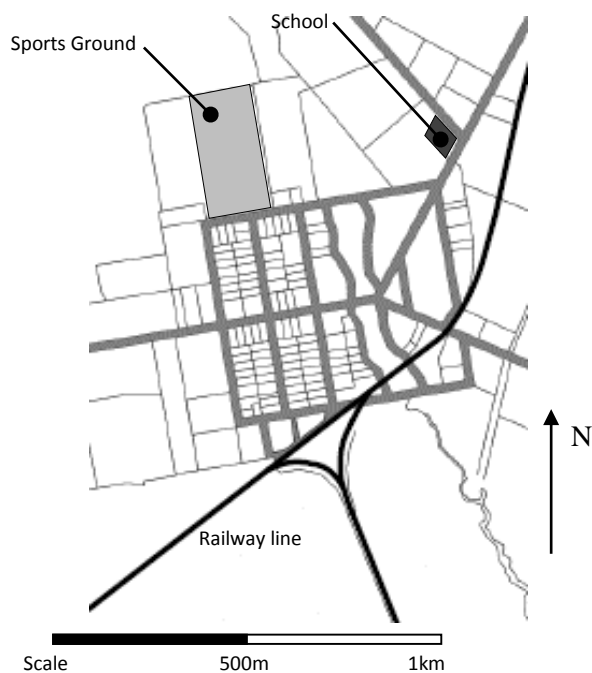


Figure 2. Lincoln Township in 1948. Derived from Jackman et al. (1973) and LINZ (2016)

4. LINCOLN TOWNSHIP 1950-1984: INCREMENTALISM REAFFIRMED

Putting aside the unusual land-use zoning for educational and research purposes for Canterbury Agricultural College, Lincoln was situated in an overwhelmingly rural setting, with all of the contests over scarce services, especially roading infrastructure, and all of the parochialism that goes with small rural populations spread across large geographic areas (Bush, 1980). From 1911 to 1963 Lincoln sat within the local government unit of Springs County comprising some of 90 square miles (23309ha). Immediately to the east, literally across a Boundary Road, was another County, Paparua. Ellesmere and Halswell Counties were not far distant to the west and east of Lincoln respectively. Amalgamation of Ellesmere and Springs Counties in 1963 and Halswell with Paparua in 1968 did little to urbanise these local authorities in their outlooks. Amalgamation was driven principally by the economies of scale needed for the continued provision of rural infrastructure. For example, at the time of amalgamation, Springs, Ellesmere, Halswell and Paparua Counties differed in terms of priorities, policies and rules. The popular view of Paparua County amongst adjoining local authorities was that despite being closer to Christchurch it was more rural in influence and attitude than the other counties (McBride and Hopwood, 1990).

This point about the influence of small rural councils, typically dominated by farmers and farming interests, is important in terms of understanding planning paradigms in New Zealand's past and their mutability or lack thereof. A kind of frontier rurality, based on self-sufficiency and distaste for bureaucracy has underpinned land settlement in New Zealand since European colonisation and colonialism (Pawson and Brooking 2002). Consequently, various iterations of planning legislation such as the Town Planning Act (1926) and the Town and Country Planning Act (1953; 1977) have been designed so as to abrogate farming interests only rarely. Local government or county boundaries were often delineated to create relatively small, autonomous rural local authorities that, proportionally speaking, had more standing than urban councils. This meant that up until the 1980s voting rights in some counties, including Ellesmere, were frequently based on size of land-holding rather than the one-person-one-vote principle. Memon argues that throughout the late nineteenth century and well into the twentieth century, land-use planning was tilted in favour of rural interests, with agriculture and forestry omitted from high degrees of regulation, and the protection of private property rights trumping social and environmental concerns: 'In fact, it is only during the last 30 years, following the enactment of the revised Act in 1953, that territorial authorities have gradually

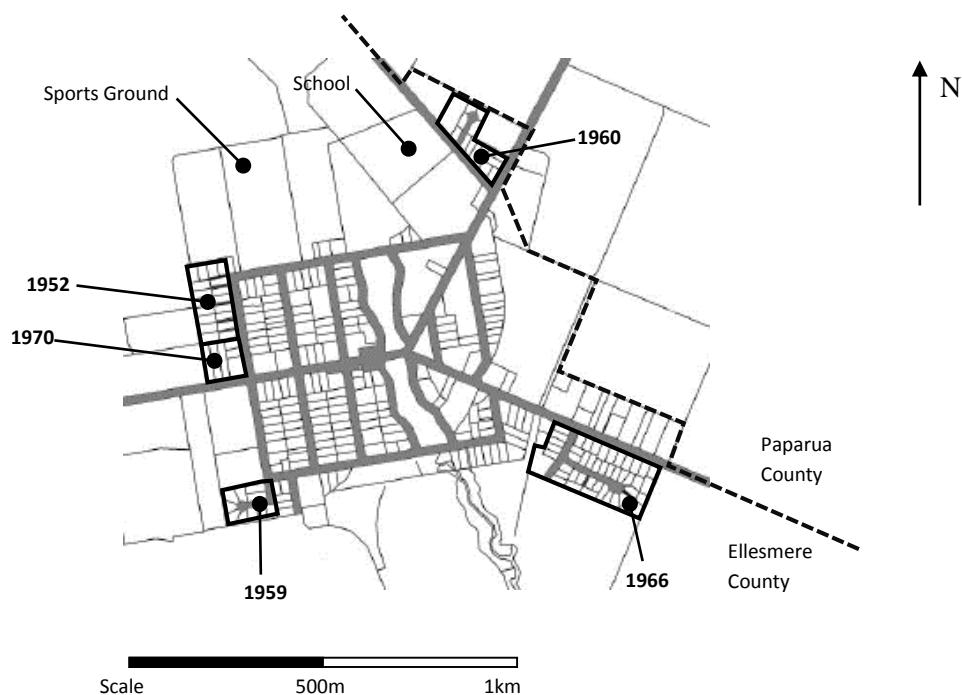


Figure 3. Lincoln Township in 1973 Derived from Jackman et al. (1973) and LINZ (2016)

and somewhat grudgingly come to accept a necessity for public intervention in allocation and management of land use' (Memon 1991, p.30).

Lincoln retained its original modest proportions for more than a century. This can be seen from Figure 3 which shows the town's footprint in 1973. Five additions have taken place and all except the one to the south east (1966) are modest in scale. Three of the five additions have been laid out in a classic post-war residential typology, especially popular in North America, the cul-de-sac. Section sizes were consistent with the existing town average of around 800-1000m². These subdivisions would have most likely passed through the formal land-use change process from petitioning or lobbying of the council by individual farmers or groups of farmers, one or more of whom may have been county councillors, seeking to maximise their strategic location on the outer edge of the town (McBride and Hopwood, 1990). As mentioned earlier, steady infill or internal subdivision within the original town subdivision would have continued, but it is important to note the local council boundary to the north east deterred growth; Paparua County had no reason or mandate to encourage the growth of Lincoln. The population in 1971 had nearly doubled to 770 and there were 217 houses (Jackman, Mason, and Densem 1973, p.3). Still, this tally barely exceeds the original projection by FitzGerald of the town's potential density a hundred years earlier of some 200 private sections.

This slow pace of growth continued into the early 1980s. Such stability over a period of more than a century coincides with the fact that for most of this time the ruling central government parliamentary party, known as the 'National Party' from 1936, was considered to be highly conservative and was strongly aligned with protecting farming and business interests against urban influences and rapid social change (James, 2012). The conventional view is that the urban/rural divide is highly entrenched in New Zealand. Rural interests remain disproportionately dominant, even when urban drift is taken into account, usually to large cities. The so-called 'dairy boom' that started in the early 2000's with record export sales and prices for dairy-product commodities to markets in China in particular has helped to offset the draining effects of urban migration patterns. Yet Lincoln appears to have become more urban than rural over time, or more accurately, it has become more suburban.

5. LINCOLN TOWNSHIP 1984-2016: A SERIES OF 'SHOCKS' THAT LEAVES SUBURBIA AS THE NEW MIDDLE GROUND

While many rural townships in New Zealand appear to have remained relatively static during the late 20th Century/early 21st Century, the predominant trend has been one of decay or shrinkage; it has often been said that 'Rural towns are dying'. This is not the case with Lincoln. Recently it has been labelled, along with Rolleston, as one of the fastest growing towns in the fastest growing district in the country (Selwyn District Council, 2015). However, this path to growth has not been smooth. In fact, the past forty years have been marked by a series of shocks and this has shaped and reshaped the town's form in subtle ways.

The first shock came in 1984 when the Labour Party took office in a landslide election victory. The domestic economy appeared to be at risk due to an overvalued and fixed currency and a constitutional crisis existed for a short period of time. Labour quickly moved to float the New Zealand dollar which reduced its value and initially benefitted exports and exporters, most of it tied to agricultural production. However, Labour also embarked upon other reforms that had major impacts on the farming sector. They began phasing out import licences and reducing import tariffs and this continued over the next decade. More crucially they removed subsidies to agriculture which had been running at 40 percent of returns. Many farmers suddenly found themselves having to think about diversification or exiting the industry. Selling land for urban or lifestyle block residential development was now something to be considered if not welcomed.

The second shock came in the shape of reforms to local government boundaries and representation. Beginning in 1985 with a review of some 850 local government entities comprised of hundreds of small town and rural councils and numerous special purpose bodies that existed at the time. A new Local Government Act in 1989 saw this figure reduced to only 86 regional and territorial local authorities (Thomas and Memon, 2007). This had major impacts in rural communities including Lincoln, which now found itself as only one town amongst many in a merger of nine county councils that formed a single Selwyn District Council. Mayors and councillors were now restricted to policy-making as council operations were professionalised along business

model lines. The reforms also allowed for greater representation of urban interests on council committees.

In line with the neo-liberal economic ideology of the Labour Government of the late 1980s, known locally as 'Rogernomics', a deliberate reference to 'Reaganomics' in the US and consistent with the privatisation policies of Prime Minister Margaret Thatcher in the UK during the same period, a number of central government agencies, including scientific research organisations, were corporatized to the extent that they were expected to return profits to the Crown as business entities. In the case of Lincoln it meant that from 1992 rebranded 'Crown Research Institutes' such as Crop and Food, AgResearch and Landcare Research had to review their operations and their assets and liabilities in business terms. As major landowners immediately to the north and west of the township, they had to reconsider whether owning large tracts of land here for crop trials made business sense. To a lesser extent this corporate view was extended to the tertiary education sector. While there was no thought of selling off or privatising New Zealand universities, Lincoln University included, assets and Crown landholdings at Lincoln such as research, demonstration or experimental farms, were now evaluated in terms of potential alternative returns or uses. In principle, such assets could now be liquidated.

The most significant change of the late 1980s and early 1990s, however, one which was to make the selling of surplus land assets more streamlined, was the drafting and passing of the Resource Management Act 1991. This statute set out the rules for the writing of a new generation of city and district plans and was markedly different from previous Town and Country Planning Acts in that it was not based on strict regulations that either allowed or permitted activities by way of fixed zoning. Instead, activities were to be permitted or 'consents' granted on the basis of the effects such activities had on the environment. This meant that no particular land use was sacrosanct except in the case of pre-existing nature reserves or fragile ecosystems, most of which was covered by other legislation. Farmland, hitherto designated as 'rural' land with specific prohibitions on subdivision and urban and commercial use, could now be converted to other uses as long as effects on the environment were deemed to be sufficiently 'avoided, remedied or mitigated'. The process was in principle quite

simple; a landowner could seek a 'plan change' to rezone land for another use. Viewed domestically and internationally as an unusually ambitious and comprehensive environmental 'super statute' the Resource Management Act 1991 replaced some 78 pieces of existing legislation.

This combination of reforms did not have an immediate effect upon the size and shape of Lincoln. Figure 4 shows that the decade after 1984 produced only a half-dozen cul-de-sac additions of 10-30 sections. Yet, it signals the start of what would be a phenomenal process a decade later. Farming families who had for generations seen themselves only as farmers now found themselves as de facto entrepreneurs if not developers due to market forces. Some sold their farms into the market without modification. Others sought zoning changes from rural to residential under the new RMA and then sold their land to developers. Some sought to retain their land-holdings and farming traditions by partial subdivision and sales while others did so as subdivision developers in their own right. Unlike the Levittown model, where the land was bought and houses built by the same company, here the development involved surveying of residential lots, provision of roading, lighting, sewerage and drainage services. Once the land was sold it was up to new owners to build their houses although a number of developers worked with building companies to host show homes on strategically-sited lots and provide special deals to potential buyers. One of the Crown Research Institutes, Landcare Research, even toyed with the idea of creating a 'green' subdivision in the late 1990s (Montgomery 2000, p.90) but the only concrete result during this period was the selling off or exchange of small parcels of land by one or other Crown Research Institute. Subdivision development was not helped by the cumbersome process of writing a new District Plan by the Selwyn District Council. All councils, whether large or small, struggled to draft new, non-prescriptive schemes or plans. In the case of Selwyn District Council there were so many opposing public submissions on its draft plan of 1995 that it was withdrawn completely in 1998 and redrafted. This had the effect of creating dual plans across the district, the proposed plan and the operative plan, which complicated the consent or variation-granting process.

However, the global financial bubble of the early 2000s, particularly around mortgage lending on real estate, and, paradoxically perhaps, given what happened to many farmers after

deregulation of the economy in the 1980s, a boom in global markets for dairy commodities, turned a number of rural regions with existing or potential irrigation capacity into major investment opportunities with very high returns. Farms were sold, aggregated and converted to dairy production almost overnight. Selwyn District became a prime example of this dairy boom and the small towns began to show the profits. Agri-businesses began to thrive again and associated plant and labour often moved out from the cities to the regions. On top of that middle-class New Zealanders wanted, in increasing numbers, to live rural lifestyles, not on the demanding 10-acre blocks that were popular in the 1970s and 1980s, but in comfortable, low-density suburban settings with a rural atmosphere.

The results of this shift in the global, regional and local economy and the impact of relatively conventional consumer preferences in real estate parcels can be seen in Figure 5. Lincoln appears to have exploded in growth. In 2001 Lincoln's population was 2142. In 2006 it had increased to 2727. By 2013 it had reached 3924 and as at 2015 it was around 4900. The map shows that the town's area has grown roughly ten-fold in the space of twenty years. This leap reflects only the land that has been surveyed off for private lots and

either sold and built upon, sold and held over for future construction or on the market as vacant lots. The bold black lines around the edges of the map show the total areas for new subdivisions that are in stages yet to be fully developed and sold into the market. In other words, potential for further accelerated growth is already in place.

As an example, the 2011 addition to the southwest, actually a joint venture between Lincoln University and the local Maori business incorporation Ngāi Tahu Property Limited which involved the conversion of a university dairy farm into private housing. When fully complete this development of 900 sections and 2700 people would alone more than double Lincoln's population as it was in the year 2001. Similarly, the 2011 and 2014 developments to the northeast, land that was included in a rival county until 1989, are only partially finished at 2016 and these would add several hundred more sections and thousands more residents.

The dates for particular subdivisions are also revealing. The first big wave of development in the early to mid-2000s reflects a global boom in property markets. It appears from the map that many small developers, including farmers-turned-developers, saw a good opportunity to convert parts of their properties into housing. Then,

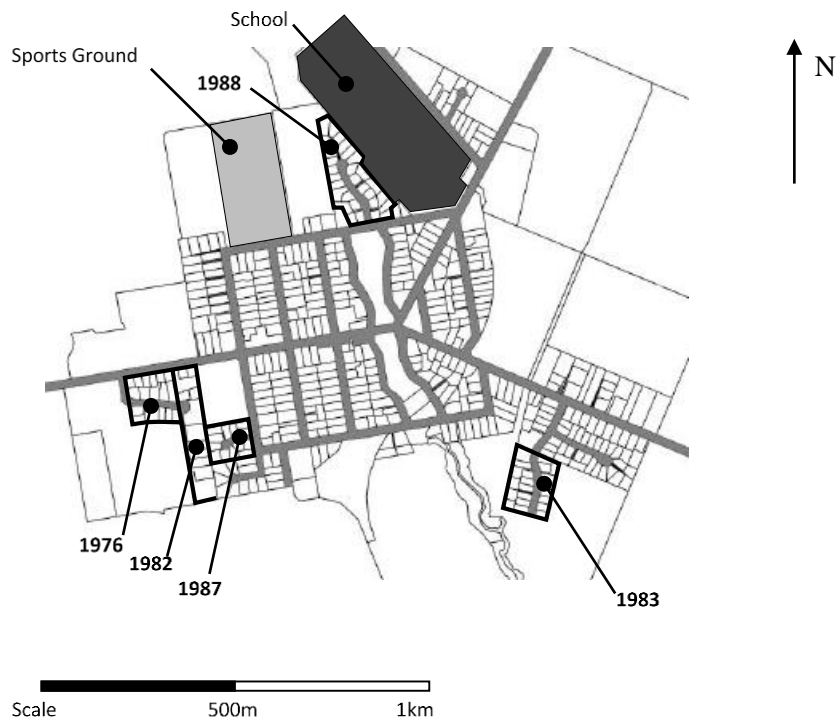


Figure 4. Lincoln Township in 1995 Derived from LINZ (2016)

interestingly there are no developments between 2008 and 2010, the years immediately following the so-called Global Financial Crisis. But then there is what appears to be a sudden reactivation of development, one not matched by many places anywhere else in New Zealand or in many Western countries for that matter, where overheated housing markets and economies had experienced catastrophic losses in many cases. This reactivation in development can also be attributed to a 'seismic shift' in the market in a literal sense.

A 7.1 magnitude earthquake in September 2010 centred to the west of Lincoln but which affected much of Christchurch and a devastating 6.3 magnitude aftershock in February 2011 caused great upheaval and dislocation. More than 5000 homes in the eastern suburbs of Christchurch were written off by central government and purchased from existing owners, leaving a large number of 'cashed-up' potential home-buyers looking or somewhere safer, and newer, to live. Lincoln offered an attractive prospect to quake

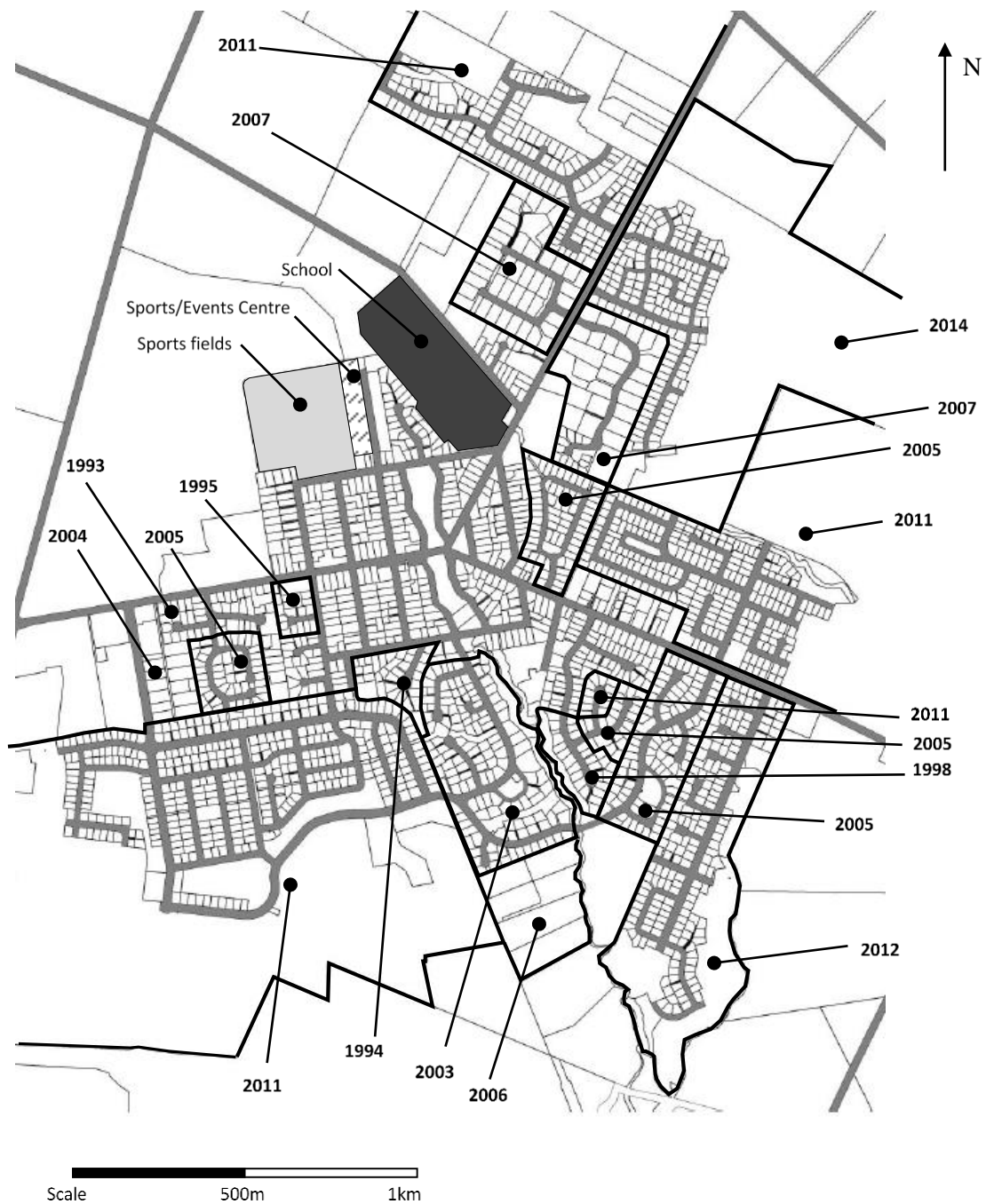


Figure 5. Lincoln Township in 2016. Derived from LINZ (2016)

'refugees' even though, ultimately, moving to Lincoln does not lessen the risk of harm from earthquakes given the South Island's widespread seismicity.

Yet, through all this exponential growth and flight from damaged suburbs elsewhere the typology of size and of layout is relatively unchanging. The influence of New Urbanist thinking is arguably present and can be seen in the greater connectivity of streets in certain subdivisions. Some of the newer subdivisions are connected by roads or walkways, particularly to the southwest but cul-de-sacs, so reviled by New Urbanists, seem to keep appearing in new developments. The size of land parcels seems relatively stable also although when examined closely most are actually smaller than the quarter acre, or 1011m², set out by FitzGerald in 1862. The two developments of 2007 on either side of the road to the northeast are notable for having larger sections of up to 2000-3000m² but the general range across all other new developments falls in the 600-800m² range. By contrast, the urban norm in Christchurch has historically been, and remains, 450-600m². So it appears that what people want, and are offered are sections slightly larger than those in the city but smaller than the class quarter acre. What the plan does not show is the footprint of buildings relative to section size. In this respect things have changed greatly from the nineteenth and twentieth centuries in terms of middle-class lifestyles and aspirations. For the whole of the Selwyn district, the average house size in 1940 was 112.9m², by 2000 this had grown to 219.4m² (QV, 2011). Minimum house sizes are now stipulated by subdivision covenants and design guidelines. As an example, in the large 2011 subdivision by Ngāi Tahu Property Limited to the south east, sections sizes of 500m² and less require a minimum dwelling size of 145m², which increases to 210m² for section sizes over 775m² (Ngāi Tahu, 2016). In Lincoln, as is the case with other suburban and rural locations in New Zealand and in Australia and North America the preference or mode for low-density living appears to be bigger houses on smaller plots of land where space and income permit.

As noted earlier Lincoln is currently, by some accounts, after Rolleston in the same district, the fastest growing town in the fastest growing local authority area in New Zealand, Selwyn District. Lincoln is not, despite the impression that may be formed from Figure 5, a free-for-all or tabula rasa for suburban developers. Thanks to the

earthquakes there are now far more stringent building regulations, particularly with regard to foundations. There are no cheap builds in the residential suburbs of Lincoln. While some are stricter than others body corporate rules and covenants apply to almost all new developments guaranteeing high degrees of social conformity. The District Council requires Outline Development Plans (ODPs) for new developments and there are strict standards and guidelines for infrastructure, stormwater, streetscaping, planting, lighting, open space and other amenities. The identification of Lincoln and Rolleston as future growth areas was prefigured in the Greater Christchurch Urban Development Strategy created by a cluster of local authorities and central government departments in 2007. Central government added urgency and legal weight to this proposal by way of the Canterbury Earthquake Recovery Authority's (CERA) Land Use Recovery Plan which was passed into law in December 2013. Lincoln was seen as a sensible metropolitan overflow site in the mid-2000s and the earthquakes have simply hot-housed the process it could be argued.

6. CONCLUSION: BACK TO THE FUTURE?

To that extent, perhaps Lincoln has simply been lucky. It stayed viable while other towns faded and was in the right place at the right time for the larger changes described above. But it is not a "wild west" town. The exponential growth has happened in the context of a strong existing community and strong social capital. Whenever designs for new residential developments are put forward there are detailed submissions from local residents who often seek design features very much in keeping with the principles of New Urbanism or Green Planning. University students and staff are often involved in local studies of environmental and landscape design. Lincoln has the distinction of being the first 'Envirotown' in New Zealand. Yet when one looks solely at maps of the town over time the consistent feature seems to be the aspiration for a genteel suburban life. It is important for planners and urban designers not to underestimate this tendency, a tendency that FitzGerald and other colonists had already embraced when Canterbury was founded. Given a choice people want their own private house on their own private piece of land. This goes beyond the local context. With the increasing role of private investments in suburban development

at the global level it is vital for planners and local communities to remember that relatively small, piecemeal residential subdivisions have become a durable phenomenon, not simply a fad or aberration. They may be flawed in a number of ways, both socially and environmentally, but they appear to be our proxy for the desire to live in a neighbourhood. The 'quarter acre dream' may already be impractical in many parts of the world and impractical in the long-term unless uncoupled from fossil fuel dependency. But as this spatial history of Lincoln indicates it is deeply-rooted and whatever we try to substitute for it will have to account for the human psychology that underlies this dream.

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