

Greenbelts

by

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What is a Greenbelt?

A greenbelt is a swath of land around a city which is protected from development and construction. A greenbelt is also a policy and land use designation used in land use planning to retain areas of largely undeveloped or agricultural land surrounding or adjacent to urban areas. The land in a greenbelt may be used in various ways, ranging from farming to the construction of urban wetlands. Greenbelts are typically established through mandate in the form of a city plan, restrictive covenant, or land use designation. In essence, a greenbelt is a line of open space encircling or next to urban areas that is designed to prevent certain types of urban development from spreading further. A New Zealand example would be Dunedin. Its greenbelt was planned at the time of the city's rapid growth during the Otago Gold Rush of the 1860s. It surrounds the city centre on three sides (the fourth side being the city's harbour).

The Problem

Various measures have been proposed to control urban sprawl. As a result, urban containment policies have been applied in many areas (Bengston and Youn, 2006). Urban containment policies have three major forms: urban growth boundaries, urban service boundaries, and greenbelts (Pendall *et al.*, 2002). The urban growth boundary, in Auckland is defined by the Metropolitan Urban Limits (MUL)¹. It is a dividing line drawn around an urban area to separate it from rural areas. It is enforced by zoning and other regulatory tools. Urban service boundaries specify the area beyond which public facilities and services will not be provided. According to Bengston and Youn (2006) greenbelts are the most restrictive form of urban containment policy.

¹ The MUL is a spatial planning tool for managing growth. In Auckland, it has been used to contain growth in order to prevent urban sprawl and to encourage intensification (Hill, 2008, p.1).

Many researchers, such as Millwood (2006), Landis (2006), Dawkins and Nelson (2002), Nelson and Sanchez (2005) and Nelson, *et al*, (2004) strongly support green belts and urban containment policies. There are also a number of organisations such as the Champaign to Protect Rural England² that run organised programmes encouraging the protection of rural lands and green belts. Nelson and Sanchez (2005) conclude that “urban containment policies, especially ones that are rigorous in managing development outside development boundaries, are most effective in restraining exurban sprawl”. On a more cautionary note, Jenks (2000, pp. 242–250) suggests that intensification can be acceptable but only in specific situations.

Despite the apparent acceptance of a *prima facie* relationship between more compact cities and sustainable development, a few researchers have raised doubts about the effectiveness of greenbelts and the compact city model. Breheny (1997) in particular has raised doubts about the feasibility and acceptability of urban compaction. He suggests that in relation to housing location and form: ‘people aspire to the very opposite of the compact city ... there is a clear clash between the high-density aspirations of the compactionists and the desires of local communities to protect their quality of life’ (Breheny, 1997, p. 216). Such attitudes make compaction difficult to achieve and it raises questions about the validity of a government policy that ‘forces’ a particular urban form on a reluctant public.

If the Government wishes to continue promoting the compact city, policies will have to come to terms with the fact that many sections of the population have a clear preference for the type of living experience and neighbourhood satisfaction that is found in suburbs and lifestyle properties rather than the inner areas (Kenworthy and Laube, 1999). In essence, the concept is generally misunderstood, because in reality its application tends to arouse contention between development and conservationist interests, and its performance often falls short of the expectations of town planners, as well as those of the community (Tang, *et al*. 2005, p. 230).

Background

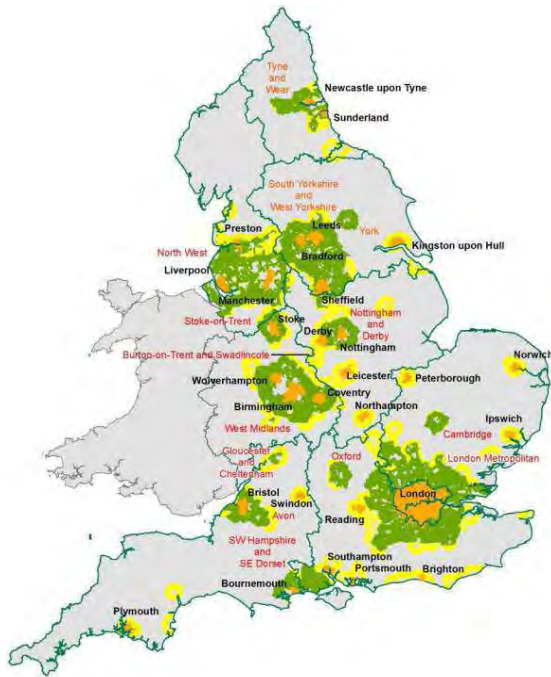
² See their website for an extensive list of publications and references at <http://www.cpre.org.uk/library/results/green-belts>

Greenbelt is one of the best known British planning concepts originated by Ebenezer Howard during the early twentieth century. According to Osborn (1969, p.182), greenbelt was originally coined by Raymond Unwin as “a further synonym for Country Belt” to describe “a stretch of countryside around and between towns, separating each from the others, and predominantly permanent farmland and parkland, whether or not such land is in the ownership of a town authority.” He defined it as “a narrow strip of parkland more or less encircling part of a built-up metropolitan or large urban area.” More recently, Amati & Yokohari (2006) define it as “a zone of land around the city where building development is severely restricted.” These various definitions reflect the flexibility of the concept (Tang, *et al*, 2005, p. 231).

Greenbelts have been an important planning policy instrument since the mid-1950s. Where they have been applied they seem to have been effective in limiting urban sprawl (Couch and Karecha, 2006, p. 355). One of the central tenets of post-war UK planning has been the strict separation of countryside and urban areas, achieved largely through the implementation of greenbelts (see figure 1 below). A related concept is the greenway, a swatch of land which goes through a city, rather than around it. Greenways are often equipped with hiking and biking paths, making them useful to residents of the city, and they also provide shelter and habitat to animal residents of cities. Like greenbelts, greenways can be landscaped with a variety of native plants, turned into wetlands, or forested, and they may include recreation facilities which range from stables to picnic tables.

A recent study of the Edwardian fringe belt of Birmingham, UK, suggests that there has been increased pressure since the 1960s to redevelop fringe-belt plots and use them more intensively, but the fringe belt has retained much of its identity despite its lack of recognition in the local plan. Decision-making about proposals to redevelop fringe-belt plots has frequently been protracted, reflecting the profitability of redevelopment, the large size of many of the plots, the large number of interested parties, and the scope for different interpretations of planning policies. Within the local authority, it has been characterized by changes in policies, and disagreements among those taking and influencing decisions (Whitehand & Morton, 2004).

Figure 1 The Location of Green Belts in England



Source: Green Belts: a greener future, A joint report by CPRE and Natural England

Two methods of protecting non-urban land on the fringes of cities have been tried in the USA. The first is the introduction of an urban growth boundary, for example in the Greater Portland area from 1979, and urban areas such as those in Lancaster County, Pennsylvania, in 1993 (Daniels, (2002) as quoted by Buxton and Goodman, 2003). In both cases sufficient land was provided within the boundary to accommodate growth needs for 20 years. Both city and county governments agreed not to extend sewer and water lines beyond the growth boundary. The second approach involved the purchase of land development rights from rural landowners on the fringes of cities. This method was adopted in Lancaster County, in addition to the imposition of a growth boundary, to provide a permanent solution to urban sprawl. The purchase of development rights from rural landholders at key sites on the urban fringe can ensure a permanent edge to the urban area in perpetuity (Daniels (2002) as quoted by Buxton and Goodman, 2003, p. 208). In the UK, the first Greenbelt purchases were made as part of the founding of Letchworth Garden City in 1909, where 500 ha of agricultural land were purchased as a buffer between Hitchin and Baldock (Elson, 1986, pp. 8–9). Howard’s greenbelt was intended to have an

agricultural function to supply produce for the town (Amati and Yokohari, 2006, p. 128).

In China, a second greenbelt is currently under construction in Beijing City as a measure to confine urban sprawl. This greenbelt will consist of tree plantations, parks and open spaces, reserved agricultural lands, and residential areas. Research indicates that the first greenbelt failed to contain the expansion of the city. The underestimation of urban growth and the lack of participation by key stakeholders in the planning process are two main reasons for this failure. It is still unclear whether the second greenbelt will be more effective than the first greenbelt at this stage. Yang and Jinxing (2007) suggest that urban sprawl in China is hard to contain with an arbitrary boundary such as a greenbelt.

Other countries around the world have responded to the problems associated with rapid urban growth and increasingly land-consumptive development patterns by creating a wide range of policy instruments designed to manage urban growth. Of the array of growth management techniques, urban containment policies are being increasingly adopted. For example, after standing virtually unchanged for almost three decades, Korea's greenbelt policy is currently being revised and weakened, largely due to pressure from greenbelt landowners and developers. Although there is no definitive answer to the question of whether Seoul would be a more or less 'sustainable city' today without the greenbelt, it is certain that in the absence of the greenbelt, Seoul would have lost much of its rich natural heritage and essential ecosystem services (Bengston and Youn, 2006). In Hong Kong, the actual planning intention of the greenbelt has been ambivalent and flexible and it has become a transition zone rather than a zone for conservation (Tang, *et al*, 2007).

Greenbelts also protect important resources such as sand and stone for future extraction. They provide space for important community infrastructure, recreation, and for the preservation of remnant indigenous vegetation, sensitive environmental areas and wildlife corridors. Perhaps most importantly they prevent *ad hoc* poorly resourced suburban sprawl and provide a break to a spreading metropolis, a definitive statement that a city should not spread in an uncontrolled manner, but be connected to

its rural hinterland and surrounding environment (Buxton and Goodman, 2003, p. 206). Retention of land in greenbelts shows a commitment to maintaining urban boundaries. The essential characteristic of greenbelts is their permanence and that once the general extent of a greenbelt has been approved it should be altered only in exceptional circumstances. It appears that intensification occurs because of differing interpretations and applications of policies over time and sometimes because of inconsistencies between policies and planning decisions (Whitehand and Morton, 2004, p. 281). Consequently, the fundamental principle that should underpin a successful greenbelt is its immutability (Buxton and Goodman, 2003, p. 207).

There are a number of benefits to a greenbelt. Many communities like to mandate greenbelts to preserve their character, and to create a pleasant natural space for people to recreate in, or to enjoy from a distance. The creation of a greenbelt can dramatically change the look and feel of a city, as dedicated open space can make a city seem less close and suffocating. Greenbelts also have environmental benefits. They can help to regulate the temperature, preventing radical fluctuations, and they also conserve water, sequestering storm runoff and preventing water loss through evaporation. Greenbelts also provide habitat for animals, and because a greenbelt is made from a large swatch of land, the space encourages more diversity than isolated patches of greenspace, allowing animals to move freely.

Criticism

The effectiveness of greenbelts differs depending on location and country. They can often be eroded by urban rural fringe uses and sometimes, development 'jumps' over the greenbelt area, resulting in the creation of 'satellite towns' which, although separated from the city by a greenbelt, function more like suburbs than independent communities. Some critics feel that greenbelts may actually encourage urban sprawl, by forcing people to build out, rather than clustering construction. The preservation of a wide band of open space to surround the urban area partially explains why large cities such as London have stopped growing since the Second World War (Longley, *et al.*, 1992). Furthermore, greenbelts obviously have a positive effect on property values for people fortunate enough to own land located along a greenbelt, and some critics have suggested that greenbelts simply benefit the rich while using land in an

inefficient way. However, the value of greenspace in a city cannot be understated, and many supporters feel that greenbelts are a very important part of sustainable design for a city despite these criticisms.

Another area of criticism comes from the fact that, since a greenbelt does not extend indefinitely outside a city, it might spur the growth of areas much further away from the city core than if it had not existed, thereby actually *increasing* urban sprawl. Some researchers such as Baum-Snow (2007) and Coleman (2010) have concluded that building highways actually induce urban sprawl. Examples commonly cited are the Ottawa suburbs of Kanata and Orleans, both of which are outside the city's greenbelt, and are currently undergoing explosive growth. This can lead to other problems, as residents of these areas have further to commute to work (if they seek employment in city) and little access to public transport. It also means people will commute through the greenbelt, an area not designed to cope with high levels of transportation.

There are many examples whereby the actual effect of greenbelts is to act as a land reserve for future freeways and other highways. Whether they are originally planned as such, or the result of a newer administration taking advantage of land that was left available by its predecessors is debatable. In Britain, greenbelt barriers to urban expansion have been strongly criticised as one of several major protectionist political-economic barriers to house building with negative effects on the supply, cost/prices, and quality of new homes. Critics argue that the greenbelts actually defeat their own stated objective of saving the countryside and open spaces. By preventing existing towns and cities from extending normally and organically, they result in more land-extensive housing developments further out – i.e., the establishment beyond the greenbelts of new communities with lower building densities, their own built infrastructure and other facilities, and greater dependence on cars and commuting, etc. Meanwhile, valuable urban green space and brownfield sites best suited to industry and commerce are lost in existing conurbations as more and more new housing is crammed into them.

The City of Melbourne has failed to protect green wedges and its greenbelt because it did not have the political will to enforce its own policies (Buxton and Goodman, 2003, p. 206). Between 1996 and 2002, the Council's planning system allowed new residential development to occur in the non-urban zones. At least 4000 hectares of

land in green wedges were rezoned for residential development during this time. The non-urban zones were originally established to provide a number of benefits to the residents of Melbourne. The green wedges were originally designed to provide easier access to open non-urbanised land between the growth corridors, and allow agricultural production to continue close to the city, including some of the most productive intensive agricultural and horticultural industries in south-eastern Australia (Kellock, 2000).

Creating Green Belts in Auckland

The British government has published guidelines for developing green belts in the UK (Department of Communities and Local Government, 1995). The guidelines strongly suggest that

“once the general extent of a green belt has been approved it should be altered only in exceptional circumstances. Where existing local plans are being revised and updated, existing Green Belt boundaries should not be changed unless alterations to the structure plan have been approved, or other exceptional circumstances exist, which necessitate such revision”.

The guidelines went on to state that

“Wherever practicable a Green Belt should be several miles wide, so as to ensure an appreciable open zone all round the built-up area concerned. Boundaries should be clearly defined, using readily recognisable features such as roads, streams, belts of trees or woodland edges where possible. Well-defined long-term Green Belt boundaries help to ensure the future agricultural, recreational and amenity value of Green Belt land, whereas less secure boundaries would make it more difficult for farmers and other landowners to maintain and improve their land”.

If these guidelines were adopted for Auckland, district plans would have to be revised to reflect a commitment from Council to maintain open spaces with limited development rights around the urban areas. The district plans would need to incorporate more restrictive zoning and subdivision rules and also possibly enact a differential rating system for fertile soils areas. Council may also have to consider purchasing development rights from existing landowners and extending the regional park system.

Such a green belt could be assembled by including the existing park system³, the Waitakere ranges⁴, the Hunua's⁵, steep slope areas and interconnecting selected farms and rural lifestyle properties. It is recommended that GIS prepare a series of maps depicting various scenarios in order to visualise the extent and impact of a potential green belt. An economic impact could follow once the areal extent was ascertained.

Conclusions

In order for greenbelts to be effective in protecting open space areas, the local planning authority should define the boundary of urban growth, prohibit urban uses in non-urban areas and curtail land subdivision (Buxton and Goodman, 2003, p. 205). In the absence of strong planning intervention, further rural development in the form of more lifestyle properties and rural houses is likely to occur (Deileman and Wegener, 2004, pp. 316-320). At the local level a greenbelt is effective at limiting development in the urban fringe. At the regional scale, [research](#) has shown that development 'leapfrogs' the greenbelt into rural areas (Amati and Yokohari, 2006, p. 127). Such development has been linked to a higher car use and longer car journeys.

In conclusion, a greenbelt by itself cannot stop urban sprawl especially if the Council lacks the political will to enforce it. Flexible policy (such as frequent extensions of the MUL) leads inevitably to land speculation in non-urban areas (Buxton and Goodman, 2003, p. 206). This point of view is a reaffirmation of similar comments made by Yang, *et al.*, (2007, p. 295), Amati and Yokohari (2006), Couch and Karecha (2006) and others. Cities should focus more on other functions of the greenbelt, such as protecting agricultural land and providing recreational resources. If a greenbelt is used for urban sprawl control, it must be used as a part of an integrative package that includes other planning, economic and social tools.

³ The Council maintains 26 different parks, covering more than 40,000 hectares.

⁴ The Waitakere Ranges Regional Park covers 28 square kilometres of native forest, rivers and beaches along the western coastline of Auckland.

⁵ The Hunua Ranges cover about 400 square kilometres along the south eastern side of the Auckland region. Most of the area lies within the Waharau Regional Park, preserved for public recreation

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