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Which way to Weddell?

Demographic challenges for Darwin's new satellite city

KEY FINDINGS

➔ The demographic 'balance' of satellite cities is influenced by their origins (greenfield or existing settlement), their values (as an amenity location, as a solution to 'housing crisis', as part of industrial expansion), and the process of their development (organic or highly planned);

➔ There have generally been poor results from attempts to develop satellite cities – they tend to 'urban sprawl', they tend to have a population that is 'split' between high income commuters (to the core city) on the one hand and low income, socially excluded residents on the other, and they tend to be unattractive to both young people and older people because of a lack of services and amenity;

➔ Notwithstanding this, satellite cities can deliver better outcomes if they have good transport links with the core city, have jobs and services located within the satellite, provide a variety of housing options, and have some facility or attraction that appeals to residents of the core city;

➔ Darwin's existing 'unbalanced' demography (high population turnover, unusual age and sex structures, polarised socio-economic status groups), along with the origins, values and process to be applied to Weddell, raises concerns about the potential population mix for the city;

➔ The experience of Palmerston provides useful insights both to what the risks might be, and what measures might be taken to ameliorate them;

➔ Critical to the demographic 'success' of Weddell are the community facilities that are in place BEFORE residents arrive, the transport access to Darwin, the availability of jobs in Weddell, and the links between the development of Weddell and the (re)development of Darwin as a whole.

RESEARCH AIM

The research had two related aims -
1. To identify the demographic challenges faced by satellite cities in general, and
2. To investigate how the existing demography of Darwin (including experiences with the satellite city of Palmerston) might impact on those challenges.

This research brief draws on data from the 2006 Census of Population and Housing provided by the Australian Bureau of Statistics. The research has been conducted with the support of Northern Territory Treasury and the Northern Territory Department of Lands and Planning.

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BACKGROUND

The development of a satellite city for Darwin and south of Palmerston has been on the agenda for Northern Territory Governments since the mid 1980s. Palmerston itself was developed as a 'greenfield' satellite city in the early 1980s following concerns about a lack of residential land availability in Darwin itself. Palmerston (anticipated population of 40 000 people) was seen as a partial solution to the problem, but it was anticipated that additional capacity would be needed by the early part of the 21st century. Specific planning for Weddell commenced as early as 1986 with an evaluation of various sites and the selection of the preferred site about 15km south of the southern boundary of Palmerston.

The *Territory 2030* plan, released in late 2009, made a commitment to progressing the development of Weddell, and 2014 has been mooted as a commencement date for residential development. Ultimately, Weddell is expected to have a population in the order of 50 000 people. Weddell represents a major change to the urban landscape of the Top End of the Northern Territory, and the Northern Territory Government has initiated a range of research and consultative activities as part of the planning process.

Our research has been concerned with what the demography of Weddell might look like (particularly in the first ten or so years of existence) and what might be done to influence that demography. The research is predicated on an assumption that satellite cities should strive to achieve a 'balanced' population – one that is representative of the broader regional population as a whole and one which is inclusive of all ages, genders, ethnic backgrounds, and socio-economic status. The importance of such population balance is that it facilitates upward socio-economic mobility and reduces the risk of social exclusion, generational and gender based tensions and the violence and anti-social behaviour that accompanies these phenomenon.

To conduct the research, we examined the academic literature on satellite cities to identify the demographic characteristics that have been observed, and the conditions reported as influencing those characteristics. We then looked at the continuing patterns of settlement of Palmerston (which itself is still in a growth phase, with new releases of residential land expected to occur right up until 2014) to see how demographic characteristics are emerging there and what this might tell us about likely settlement patterns for Weddell.

SATELLITE CITIES IN THE LITERATURE

Despite a relatively long history of satellite cities as a feature of urban planning, there is very little literature describing demographic experiences. The satellite city idea (also known as garden city, commuter city, or social city) came to prominence in England in the late 19th Century as a mechanism for controlling urban growth (resulting from industrialisation) and taking advantage of improved 'commuter' transport systems (principally the railways). The idealised vision for the 'garden city' was put forward by Ebenezer Howard who emphasised the presence of 'open country' to ensure that the satellite city was physically separate from the core city,

and the existence of high speed transport links between the satellite and the core to facilitate mobility. Howard's garden city project also ensured that the satellite did function as a 'real city' – with its own city centre and amenities *in situ* to limit the dependence of the satellite on the core.

The most critical aspect of the satellite city, and that which has made them most difficult to research, is the physical separation from the core city. Many initiatives begin with some physical separation of core and satellite, but the separation quickly disappears as a result of urban sprawl and infill development. Natural features such as waterways may continue to act as a separator, but in essence, the satellite and the core become a conurbation. The first satellite city proposed as such in Australia was Penrith to the west of Sydney. It was intended, when developed in the 1950s, to have 40 000 residents and to retain a distinct identity. Penrith now has around 200 000 residents, and is now considered part of the western Sydney region – outer suburbia rather than a distinct city. This is the common experience of virtually all satellite cities discussed in the literature.

In general, the outer reaches of urban sprawl are seen as problematic sites from the point of view of social inclusion and community development. They tend to become home to two distinct groups of people – the socio-economically advantaged who choose the relatively cheaper housing (in terms of cost per unit of quality) and commute to the core, and the socio-economically disadvantaged who are forced into the absolutely cheaper housing and who demand services *in situ*. The stark differences between these groups in terms of lifestyle, life opportunities, and demand for and access to services tend to persist over time, and results in substantial social tensions.

The literature recognises a range of factors which might lead to more or less problematic population dynamics, but as yet there is no general model of how to make satellite cities 'work' beyond that proposed by Howard over a century ago. What we have learnt, it seems, is that satellite cities are attractive ideas for town planners trying to manage increasing urbanisation, but that it is difficult to realise the grand visions that the planners put forward. Of course, the 'problems' of satellite cities are simply versions of the problems of all cities – managing the mix of populations, the variety of service demands, and the tensions created by large numbers of people sharing small spaces. The realistic aim for the satellite city planner, therefore, is to create an environment which minimises the extent of the problems, and at least makes them no worse than that already experienced in the core. In pursuing such an aim, the literature does provide some general insights -

1. The *origin* of the satellite matters – greenfield developments tend to immediately limit population balance because they often commence with a single style of housing and uniform assumptions about how people will live there (as commuters to jobs in the core city, for example). Tensions emerge when the assumptions are challenged (by different groups of people moving in, by changes in transport technologies, by the processes of population ageing and socio-economic mobility). In contrast, satellite cities that are based on existing settlements tend to have much stronger community identity and a much greater variety of lifestyle options in their early stages of development.

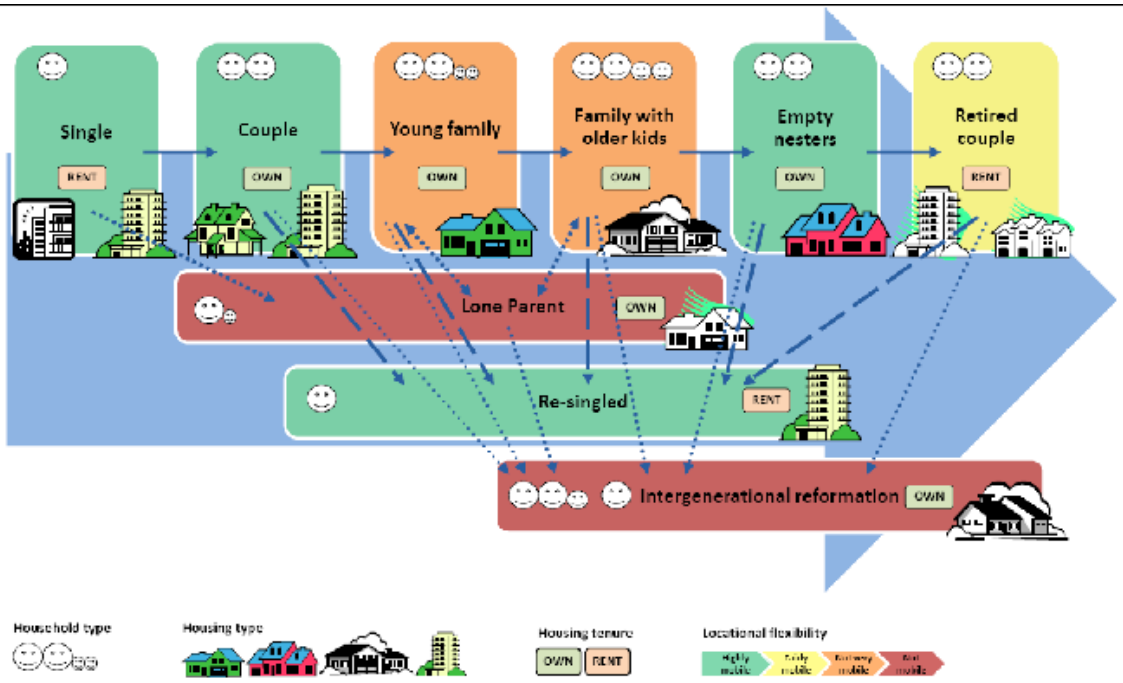
Tensions still arise, however, between new and established residents who are likely to have different visions for the future of the city. Nonetheless, the literature suggests that inheriting a community culture makes the process of urbanisation somewhat easier.

2. The *values* attached to settlement of the satellite matter – satellite cities can emerge as a result of core city populations seeking some amenity (semi-rural or smaller town lifestyle, for example), town planners attempting to relieve housing demand pressures, or new industry or services investment (construction of a large factory, or a new private school, for example) encouraging people to move to closer proximity. In reality, most satellite cities emerge as a result of a combination of these effects. However, the literature is most critical of those places designed primarily to address housing crisis. The argument is that the obsession with provision of housing detracts from attention to 'city building' – the necessary infrastructure (transport, schools, shops, community facilities etc.) that creates a positive social environment.
3. The *processes* of development matter – satellite cities can develop along a continuum from highly planned to very organic. Satellites that are 'discovered' first by the populations who want to live there tend to develop more organically, while satellites that are declared such by governments tend to be more highly planned. Organic development (sprawl, land use conflicts etc.) and highly planned development (lack of social capital) have been associated with their own difficulties, and the ideal is to have a mix which allows identity to be created by residents, while managing the pace and nature of change over time.

In addition to these general insights, there are specific ideas about what makes a satellite city work in a social (and demographic) sense. Six 'instructions' to satellite city planners emerge from the literature -

1. Attention must be paid to **transport** of people between the satellite and the core AND within the satellite itself. Over reliance on the motor vehicle creates the environment for exclusion of large segments of the population (not just the poor, but the young and the old). Integrated mass transit systems are most effective (although they do encourage infill development as they create accessible corridors between the satellite and the core).
2. Local **jobs** not only provide opportunities for people who find it difficult to commute to the core, they reduce the dependence on the core, and they encourage place attachment.
3. The **variety of housing** options plays a large role in determining who will live in the satellite. People change their housing needs throughout their life cycles (see Figure 1), and a balanced city caters for as many of the different housing needs as possible.
4. Proactive planning reduces the time lag between arrival of population and implementation of **community services and facilities**. Flexible facilities (multi-function spaces) and a variety of accessible services will help achieve population balance.

Figure 1: Examples of Changing Housing Needs Over the Life cycle



5. The **first arrivals** in a satellite city play the central role in determining its long term characteristics. Often, the first arrivals are those relocated by government into public or social housing developments (particularly when the satellite is envisioned to resolve a housing crisis), and the satellite becomes immediately perceived as a 'fringe' settlement. Initiatives need to be introduced which immediately attract a variety of residents.
6. The nature of the **relationship between the core and the satellite** is a critical determinant of the long term development path (of both). Two factors are important here – one is that residents of the core have reason to visit the satellite as much as residents of the satellite have reason to visit the core. This can be achieved through the locating of jobs in the satellite, the locating of community or recreational facilities. The second factor is that the planning of the satellite should not be removed entirely from the planning of the core. Introduction of the satellite changes (for example) the housing mix of the entire region, and this will mean the use of residential land in the core needs to be re-examined (whether it is gentrification of the city centre, changing housing density requirements etc.). The same is true when considering the mix of community facilities, transport services, and so on.

In summary, then, satellite cities, like all urban developments, are problematic. The challenge is to anticipate the likely problems and develop strategies to manage them BEFORE they arise. The literature gives us some pointers as to what issues to look out for and what strategies to consider. The fundamental conclusion is that planning a satellite city needs to pay attention to social as well as the physical characteristics, and the city needs to be at once separate from (so it can develop identity) and connected with (so there is interdependency) the core. Darwin offers a very interesting research site, as it has experienced the growing pains of one satellite (Palmerston) and is set to embark on the development of another (Weddell).

THE CONTEXT FOR WEDDELL

Some indication of what might happen with the populating of Weddell may be drawn from the experiences of Darwin's other satellite city, Palmerston. Both Palmerston and Weddell were greenfield developments. Both were initiated ostensibly to address perceived current and future housing shortages in the core city. Both were very highly planned, taking place on government owned land and managed in terms of land release and master planning by the Northern Territory Government.

The first residents moved in to Palmerston in the early 1980s. The population grew steadily through the 1990s, and there are now over 25 000 people living there. The expectation is that Palmerston will house 40 000 people by the middle of this decade, and that this will essentially be its capacity.

Last year, our colleague, Nick McTurk researched the differences between the Palmerston and Darwin populations, particularly in the early years of settlement of Palmerston (1991 and 1996 Census). That research is to be published in a book due out at the end of the year called *Demography at the Edge: Human Populations in Remote Areas*. That research found that the initial occupants of Palmerston (up until 1996) tended to have lower incomes, were more likely to be living in families, including a higher proportion of single parent families, were more likely to be Indigenous, were more likely to be living with a disability, and had lower education achievements than residents of Darwin City. However, the research identified splits within the Palmerston population that it asserted could be defined according to housing tenure. People who owned or were purchasing the house they lived in had higher incomes than the Darwin City average. They were better educated. They tended to work in Darwin City, and they lived in families with both parents present. Owner-occupied houses accounted for 55% of the dwellings in Palmerston by the 2006 Census (compared with 60% in Darwin City and 70% across Australia).

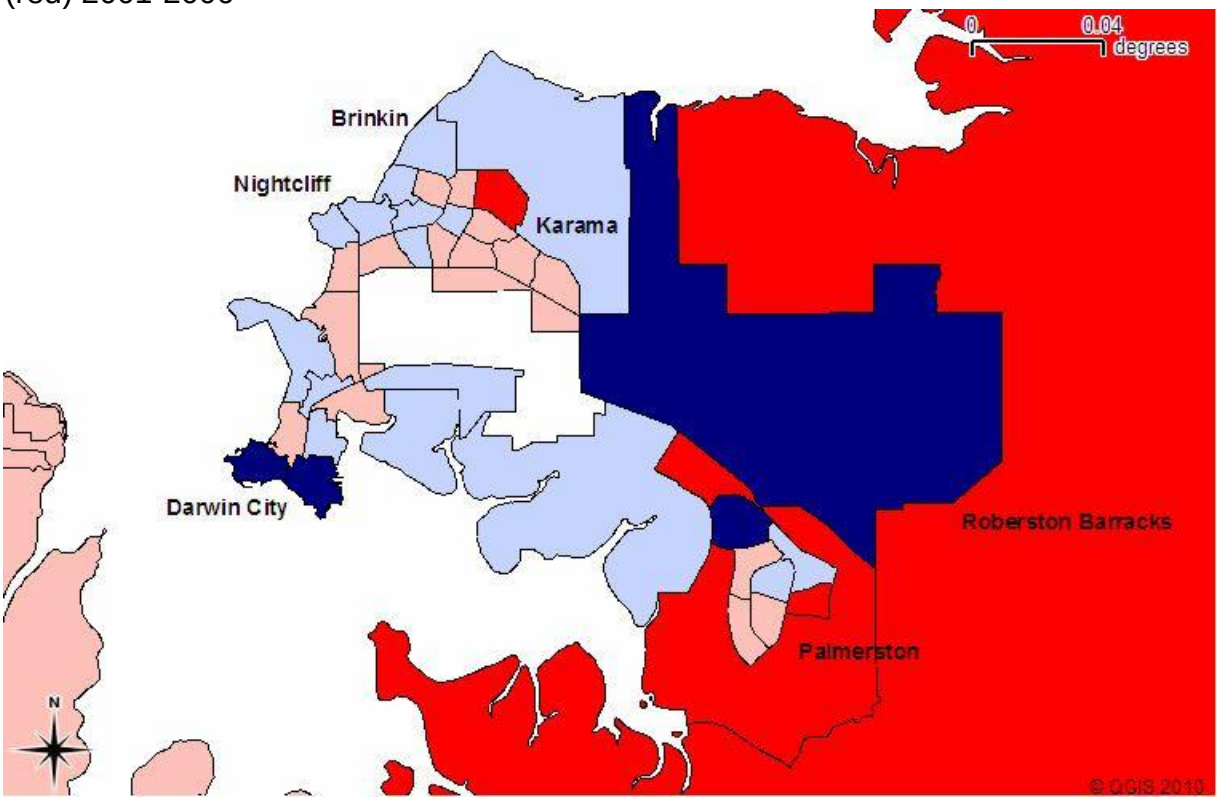
This owner-occupier population contrasted starkly with the population living in public or social housing (13% of dwellings, compared with 9% in Darwin City and 4% across Australia). Many of these residents were Indigenous, living in single parent families, unemployed, poorly educated, living with a disability, and did not have private motor vehicle transport.

The remaining population was in the private rental market, and this was dominated by Defence Force workers (Palmerston is adjacent to the Robertson Barracks Defence site). They had characteristics similar to the owner-occupier population, but had (as could be expected) higher mobility rates – moving in and out of the city very regularly.

Looking at the historical data, the initial population featured a greater proportion of those matching the 'social housing' demographic profile. The number of dwellings in this category actually fell by over 20% between 1996 and 2006, as the population profile became more influenced by owner-occupiers and defence force personnel. Rates of in-migration have remained high (as new housing becomes available on a regular basis) while rates of out-migration (when excluding Defence Force personnel) have remained low.

So (again excluding Defence personnel) there have been two distinct waves of settlement of Palmerston. A first wave dominated by the public/ social housing group in the mid 1990s, and a second, ongoing, wave more dominated by owner-occupiers. What is interesting (see figure 2) is that both of these waves have contained people who were already living in Darwin and moved out to Palmerston. Figure 2 shows in red the suburbs of the greater Darwin area that are preferred by people who move from one house to another within the region, and in blue the suburbs preferred by new arrivals to the region. The impact of high in and out migration of Defence personnel are apparent in the dark blue of Robertson Barracks and nearby Palmerston suburbs. Generally speaking, however, Palmerston, along with inland northern suburbs around Malak and Karama, are destinations for movers within Darwin. Newcomers much prefer the city centre and beach side northern suburbs (Nightcliff, Brinkin etc.).

Figure 2: Housing Location Choice of Movers to Darwin (blue) and Within Darwin (red) 2001-2006



As Palmerston has become more attractive to wealthier, longer term residents of Darwin (possibly due to lower housing costs or greater choice of housing), the initial residents have become ever more marginalised, with a loss of social housing options. Nick McTurk gathered evidence to suggest this has lead to overcrowding, homelessness and increasing social exclusion of that initial population, rather than reflecting substantial upward socio-economic mobility. This is consistent with what is known as the 'fringe effect' where people without the means to compete in the housing market get pushed ever further away from the transport and community infrastructure that they are more heavily reliant on.

THE CONCERN FOR WEDDELL – BUSINESS AS USUAL?

As Palmerston has struggled to achieve population balance, it has also experienced significant lags between population growth and infrastructure development. Only recently has investment been made in improving transport links (still highly dependent on privately owned vehicles) between Palmerston and Darwin. There is still no hospital in Palmerston. Community recreation facilities remained poor until the past ten years or so. Industrial development was slow to occur. These things have been blamed in part for the social issues that are perceived to exist (and can be shown to exist) in Palmerston over time. 'Business as usual' has seen the lower socio-economic residents facing increasing difficulties in securing housing and accessing community infrastructure. It has seen the newer, wealthier residents largely divorced from local issues as they continue to work (and apparently educate their children, and shop, and play sport and so on) in Darwin City. If a similar planning approach is applied to Weddell, we can anticipate similar outcomes – a split population, substantial social issues increasing over time, an increasing dislocation between the satellite and the core city. This may even be exacerbated by the potential competition between Weddell and Palmerston for any new infrastructure in the region.

THE OPPORTUNITY FOR WEDDELL – LESSONS LEARNED?

The experience of Palmerston also provides lessons for planning Weddell that present opportunities to achieve a more socially inclusive, 'balanced' demography. These lessons were discussed in some detail at a seminar on Weddell convened by the Planning Institute of Australia in July 2010. Attendees noted that Palmerston had started to turn around its reputation as the 'poor sister' city to Darwin. This had occurred in large part because the increased Defence Force presence provided a local working population and had begun to stimulate industrial development (including commencement of a Defence Industry industrial hub). Likewise, the relocation of some government offices to Palmerston had seen increased local employment, and so more local residents spent more of their time in the local community. It also means that a proportion of Darwin city residents have begun to travel regularly to Palmerston, increasing the interest in the satellite from the core and perhaps being an impetus for the recent increased investment in transport and community facilities. The disappointment of Palmerston is that it has taken so long to start to see it as more than a dormitory outer suburb for Darwin (and this process is by no means secured as new developments in Palmerston continue to be advertised as solutions to housing shortages in Darwin).

In conclusion, planning for Weddell (at least as far as it is concerned with achieving demographic 'balance') may wish to consider the following -

1. Ensuring that there are jobs in Weddell from the outset;
2. Ensuring that there are transport systems that link Weddell to Palmerston and Darwin AND that facilitate mobility within Weddell. These systems should not be over reliant on private vehicle ownership;
3. Ensuring that initial development stimulates demographic balance by providing a variety of housing options (consistent with the whole housing life cycle

shown in Figure 1);

4. Recognising that, irrespective of intentions, the dynamics of Darwin's population in total means that Weddell will exist as a 'fringe' and that this will include a substantial proportion of 'at risk' populations such as those described as early residents of Palmerston. Community facilities and services infrastructure should be planned and in place before these residents arrive;
5. Ensuring that there is a reason for Darwin (and Palmerston) residents to travel to Weddell and so be encouraged to take an interest in its existence as something more than just a solution to city-perceived housing stress. This might mean establishing recreation/ shopping/ dining/ entertainment/ education facilities there, for example.

Points 2 to 5 above reinforce perhaps the major lesson to be learned from Darwin's previous experiences, and one of the foundations of Ebenezer Howard's vision – the relationship between satellite city and core city needs to be at the centre of thinking around planning and development. It is not enough to see the satellite as some 'solution' to a core city crisis (housing shortages, for example) – doing so simply shifts the crisis to the satellite. As the satellite is designed, the core itself must be re-designed. In Darwin, for example, the emergence of Weddell will see the geographic centre of regional population shift ever further south, meaning a re-think of where community facilities (and indeed the city 'centre' itself) are located. The mix of housing throughout the greater Darwin region needs to be considered along with the mix of housing in Weddell itself, or the continuing push to the fringe that has been observed in Palmerston will be repeated. Newcomers in particular will continue to favour Darwin City over the satellites (and hence continue to push less well resourced residents to the fringe) unless provision is made to balance the housing (and employment and services access) opportunities between the core and the satellite. Achieving 'business as unusual' in this way not only offers a potentially brighter future for Weddell, but for the urban region as a whole.

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