



NBN and Melbourne's North

The Perfect Connection

Supported by



Contents

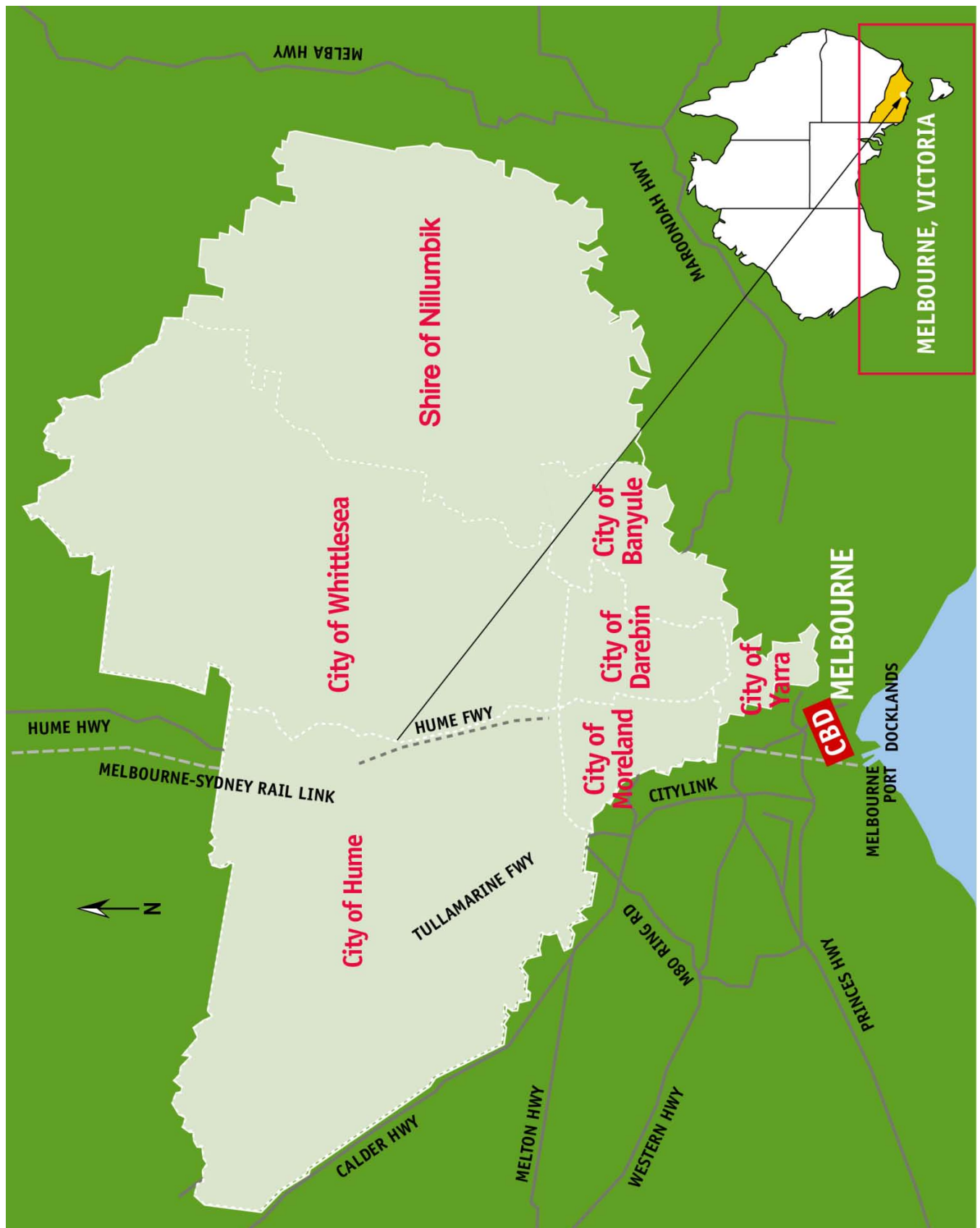
Melbourne's North Maps	3
Executive Summary	5
Melbourne's North and the NBN	7
Importance of Melbourne's North to Victoria and Australia	8
Dynamism : A Reason to Act Now	9
Making NBN Relevant to People's Lives	12
Melbourne's Northern Region: Selected Public Infrastructure Facilities	16
Understanding of the Broadband Landscape	19
Critical Connections	19
Benefits of Regional NBN Strategy	20
Appendix 1: How Council Leadership can Maximise Impact of NBN	23
Appendix 2 : SEIFA Data	25
Appendix 3 : Case Studies - Education, Health, Industry and Local Government	26
Appendix 4: Northern Melbourne RDA Committee: Business ICT Benchmarking Project	39

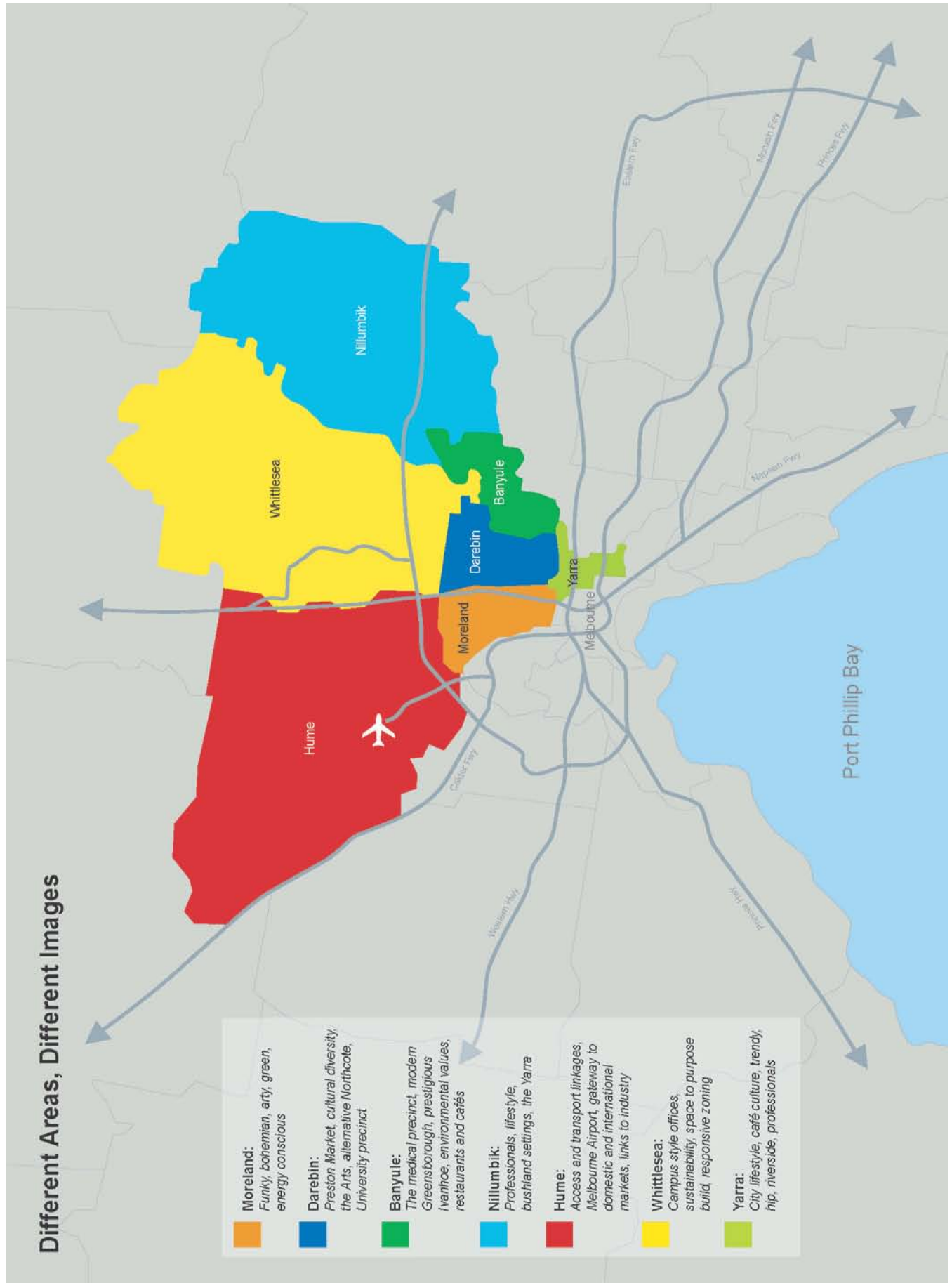
© Melbourne's Northern Economic Wedge Inc., trading as NORTH

Link

Further information 03 9479 3337 or m.butera@latrobe.edu.au

Melbourne's North Maps





Executive Summary

Melbourne's North is united in its desire to support the Australian Government in maximising an early return on investment in the NBN rollout. Fast-tracking the NBN throughout Melbourne's North – a dynamic and diverse metropolitan region – would assist a declining manufacturing industry, increase resident skills and position the region to accommodate the massive population growth that it is about to experience.

It's a region that's notable for its diversity – a diverse population from all over the world, home to a diverse range of businesses and industries, and covering a diverse area that stretches from inner-city 'gentrified' suburbs to the semi-rural outer suburban fringe.

Featuring some major road, rail, freight and public transport infrastructure, the region is home to Melbourne Airport, significant transport hubs and strategic assets. Its economy is in the process of evolving from a manufacturing past to a knowledge based economy. Despite the global financial crisis, Melbourne's North has maintained its share of gross domestic product, currently at 13% of Victoria's GDP.

While Melbourne's North has many advantages, it also faces significant challenges. The region is facing an unprecedented period of population growth, with experts predicting more than 250,000 new residents over the next 10 years.

And the region is also facing an uncertain future. Manufacturing has always been the major employer and, as in the rest of Australia, it is in decline. Melbourne's North is home to a high proportion of automotive manufacturing businesses and this sector is also facing huge challenges. To ensure that residents remain employed, that there are jobs available for new residents of all skill levels, and that manufacturing has access to the best communication technology, interventions are required.

The early introduction of NBN would offset the negative effects and give the region the boost it needs to grow into the future. Our recent analysis shows that the gains in household productivity in Melbourne's North from efficiency improvements directly resulting from the NBN would be about **20 per cent**, while the increase in employment would be at least **7 per cent**.

Making the NBN relevant to people's lives

The region is prepared. All major stakeholders are on board – 7 local councils, business groups, universities, TAFE institutes, schools, health providers, industry associations and other large stakeholders such as Melbourne Airport. They are ready, willing and able to put their critical services on NBN, to educate the public and business about using those services (encouraging uptake), and to do to whatever is needed to facilitate the rollout.

Success will only be achieved when innovation is affordable, understandable and relevant to improving outcomes for individuals, for communities and for business. The stakeholders represent a diverse community of interest and a large mass of infrastructure. This extensive infrastructure provides the basis for implementing significant new service delivery models using NBN for aged care, health care, community care, education and business. A key aspect of the new service delivery

models is a trend to providing Cloud services and greater use of video communication, both of which drive the need for the greater bandwidth available on the NBN.

Individual plans are underway and they are varied. NBN would be used across the region for specific purposes such as providing a health interpreter service, conducting machine diagnostics with overseas engineers, delivering online training effectively, increasing research activities and conducting synchronous video communication. And there's a lot more (see *Appendix 3: Case studies* for more information on proposed utilisation of NBN).

Why Melbourne's North?

Melbourne's North is a region that has a deep understanding of the broadband landscape. For example, the City of Whittlesea's conduit policy and approach, implemented in 2001, is the model taken up and used by NBN Co in greenfields today. Whittlesea has a strong reputation for the technology innovations it has developed and delivered, both within the organisation and across the sector, leading to 14 national innovation awards and world recognition in 2007 as a top 21 Intelligent Community by the US-based Intelligent Communities Forum.

Councils will play a critical role in maximising the impact of the NBN, and all councils in Melbourne's North are ready to participate (see *Appendix 1: Maximising the impact of the NBN: the need for Council leadership*).

Three areas in Melbourne's North were chosen for initial NBN adoption – Brunswick South, South Morang and Tullamarine. It makes sense to build on these sites and to choose Melbourne's North for a pilot regional rollout, one that can demonstrate the dramatic productivity gains that the NBN can bring to business and the community. (The gains would not be as evident in a rural area.)

The commitment, enthusiasm and involvement of stakeholders will ensure significant and immediate uptake – government targets will be met and installation will proceed quickly and efficiently. And the benefits to the region will be tangible:

- economic: as mentioned previously, **20 per cent** efficiency improvements and **7 per cent** increase in employment
- social: a positive impact on large and important health and higher education sectors, plus connections for the ageing population into a whole range of services
- environmental: reduction in travel for work and high incidence of car dependency.

Of all Australian regions, Melbourne's North is in a unique position and needs special help. Its industry and economy rely on staying ahead of competitors and the NBN will allow our employers to have the very best technology to compete. Because of the rapid growth occurring, not making changes now will severely constrain the region into the future and cement some areas of disadvantage.

With the right strategic interventions, Melbourne's North can grow and prosper. But the interventions need to be timely and appropriate. Fast-tracking NBN through the region would benefit everyone – the region, government and the community – and give the NBN project a successful regional pilot from which to expand operations.

Melbourne's North and the NBN

Melbourne's North is defined as the region covering the seven local government areas of Banyule, Darebin, Hume, Moreland, Nillumbik, Whittlesea and Yarra.

It is highly diverse, and its inner areas are rapidly transitioning to knowledge economy and creative industry type development as manufacturing, logistics and warehousing activities advance in the outer parts of this dynamic region.

Melbourne's North has increased its share of Victorian GDP to 13 per cent and its share of Melbourne out-of-state exports is 17.5 per cent. The region is important to Melbourne's overall economic performance, particularly as 20 per cent of the region's out of state exports are for international markets.

Yet the region is experiencing change. Massive population growth – 250,000 new residents over the next 10 years – is not being matched by equivalent growth in infrastructure. A major employer, the manufacturing sector, is in decline and its automotive sector is under threat.

Early rollout of the NBN across the entire region would help to stem the decline, increase the skills of residents and grow business at a critical time. Capacity for employment growth is significant. Improving household productivity (including skills) in the region through the NBN would increase employment by at least 7 per cent. And by 2030, the NBN will have created productivity gains in Melbourne's North of between 7 and 12 per cent.

Melbourne's North needs all the tools it can get to maintain growth and build employment. The NBN is the most important tool of all.

An intensive rollout of the National Broadband Network (NBN) in Melbourne's North will underpin new regional opportunities and future prosperity, providing significant benefits and returns from the Australian Government's investment in the region.

This paper demonstrates how the NBN will benefit the North, in line with the goals of the Australian Government's Digital Economy Strategy:

- increase households' online participation
- increase business' and not-for-profit organisations' online engagement
- smartly manage our environment
- improve health and aged care
- expand online education
- increase teleworking
- improved online government service delivery and engagement.

Importance of Melbourne's North to Victoria and Australia

Melbourne's North is a region that is important to both Victoria and Australia. Its population has grown 17% (around 140,000 people) over the last 10 years, with a corresponding growth in working population (13%), households (13%), GDP (28%), sales output (28%) and employment (25%) over the same period.

Series	2001	2006	2011
Population	766,801	814,947	903,357
Share of Melbourne's population	22.1%	21.8%	21.8%
Share of Victoria's population	16.0%	15.9%	16.1%
Share of Australia's population	4.0%	3.9%	4.0%
Working age population	527,878	566,042	632,851
Share of Melbourne's working age population	22.3%	21.9%	22.0%
Share of Victoria's working age population	16.4%	16.3%	16.5%
Share of Australia's working age population	4.1%	4.1%	4.1%
Households	259,476	274,771	295,639
Share of Melbourne's households	21.8%	21.5%	21.7%
Share of Victoria's households	15.6%	15.5%	15.7%
Share of Australia's households	3.9%	3.9%	4.0%
GDP (value added) \$m (constant prices)	24,442	27,645	31,306
Share of Melbourne's GDP	16.2%	16.0%	16.3%
Share of Victoria's GDP	12.8%	12.6%	12.9%
Share of Australia's GDP	3.0%	2.9%	2.9%
Sales (output) \$m (constant prices)	59,881	67,715	76,564
Share of Melbourne's sales (output)	16.4%	16.2%	16.5%
Share of Victoria's sales (output)	13.1%	12.8%	13.1%
Share of Australia's sales (output)	3.2%	3.0%	3.0%
Employment	370,637	404,130	476,295
Share of Melbourne's employment	21.7%	21.4%	21.7%
Share of Victoria's employment	16.3%	16.1%	16.6%
Share of Australia's employment	4.1%	4.0%	4.2%

It is worth noting that this table shows averages, and this masks the fact that some areas are growing rapidly while others are experiencing stagnation and disadvantage.

Melbourne's North also has areas of significant disadvantage compared with Victorian and Australian averages, and this is reflected in SEIFA (Socio-Economic Indexes for Areas) data from the 2006 census (see *Appendix 2: SEIFA data*).

Overall, the 7 LGAs in Melbourne's North had stronger employment growth than most other Melbourne LGAs after the global financial crisis, including above average Melbourne growth in:

- manufacturing
- construction

- accommodation
- professional
- administration
- education
- other services.

Attracting new investment into the Melbourne's North catchment to create new employment is essential. The best complementary strategy to lift growth will be to upgrade the skills of all residents in the catchment, and to do so in conjunction with an intensive rollout of the NBN in the region. This is because the share of skilled residents per capita of working age population in an LGA's catchment (its knowledge intensity) is the most powerful driver of growth for household productivity and employment.

Dynamism: A Reason to Act Now

Melbourne's North economy is changing. It's evolving from a manufacturing to a knowledge economy region in which high tech manufacturing is retained and significant research hubs developed. The region's diverse and increasingly skilled residents provide an opportunity for the growth of both new and existing firms as well as relocation of new businesses to the region.

Putting in place the best telecommunications infrastructure today will move the region towards a dynamic and competitive future, a region better for business and better for its residents.

Because Melbourne's North is a dynamic region in terms of industry change and population growth, not acting now will mean the region's economic and social potential will not be fully captured. Not acting now will have a long term impact on the region and its prospects.

The intensive rollout of the NBN in Melbourne's North provides the opportunity for fundamental change in the way that this region's economic, spatial and social structure will develop by:

- shaping the future and creating a platform for new investment in the region
- improving education and lifestyle outcomes for residents
- enhancing supply chain integration and opportunities for new and existing businesses
- improving the capacity to attract new investment and intensifying the knowledge economy.

An intensive rollout of the NBN in Melbourne's North would greatly enhance the region's efficiency by:

- enabling lifetime learning enhancement of existing resident skills
- encouraging local industry to exploit the region's catchment in terms of knowledge based resources and improved supply chain integration
- increasing capacity to work from home for residents, reducing travel requirement and particularly improving integration of outer parts of the region.

Productivity gains

By 2030, NIEIR projects productivity gains from the introduction of the NBN of **11-12 per cent** for inner regions of Melbourne, whereas the equivalent gains in most of the suburban regions are between **7 and 9 per cent**. The benefit for non-metropolitan regions is lower at around **5 per cent**.

An intensive rollout of the NBN in Melbourne's North will provide a strong return on investment with significant gains in productivity and regional integration. And it will do so because of its existing assets and greater potential for improved efficiency, at higher levels than in most other regions.

Improved regional integration

There is potential to diversify the knowledge economy, now flourishing in the inner parts of Melbourne's North, across the northern region. This must be a planned process that will result in significant benefits to the amenity of residents because of higher skilled local employment, shorter distances to work and improved environmental outcomes.

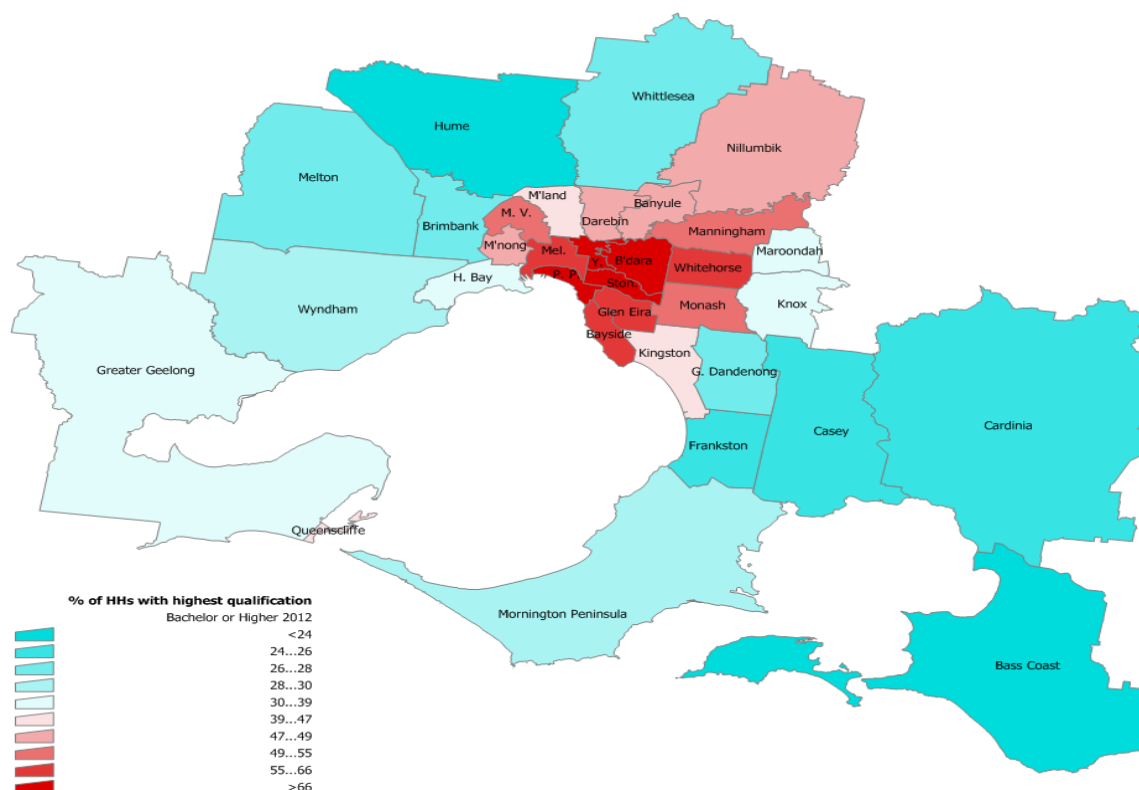
This is an important opportunity for Melbourne's North, where its inner regions have the potential to build new businesses on the internet at the final stage of the e-journey. These are online businesses requiring manufacturing, logistics support and distribution from outer but nearby places.

Only the intensive rollout of the NBN in Melbourne's North can make improved regional integration a reality.

Efficiency gains: a high return on investment

NIEIR modelling and Data Envelopment Analysis shows that the gains in household productivity in Melbourne's North from efficiency improvements, including improving skills, would be about **20 per cent**, while the increase in employment would be at least **7 per cent**. The largest benefits would accrue to Banyule, Darebin and Moreland, with an average improvement in the performance indicators of approximately **20 per cent**. Hume and Whittlesea would improve their performance indicators by around **10 per cent** (from *Melbourne's North: the new knowledge economy report* 2009).

Melbourne: Percentage of households with bachelor or higher qualification, 2012 (as highest qualification)



Yarra and Nillumbik, while highly skilled, would also benefit significantly from the intensive rollout of the NBN in Melbourne's North:

- In Nillumbik, providing a greater opportunity for the development of new media, technical and professional businesses run from a home office. Large packets of data and the ability to deliver them effectively will be the key feature of these types of businesses.
- For Yarra, the NBN rollout will be significant because of the types of business and skills that already exist. The NBN will provide the most progressive of these businesses with new horizons and new markets. For the medical and professional organisations in the inner part of Melbourne's North the benefit will be greater efficiency and technical capacity, sharing knowledge and improved client or patient contact.

Attracting global knowledge workers

Successful knowledge based regions have a high concentration of highly skilled global knowledge workers. These workers tend to migrate to regions with scale and diversity of social and community infrastructure and cultural and lifestyle choices. For the rapidly growing population of Melbourne's North, the NBN will play its role in shaping the diversity and skills of its residents.

Cost savings: direct impact

The direct impact of the NBN on the economy is measured by the direct cost-saving/productivity-enhancing effects of fast broadband on the economy. The direct impact consists of the cost savings from productivity gains, improved supply chain integration, direct employment savings and the outsourcing of employment to professional service firms and the like. While employment effects from the NBN can lead to the export of jobs outside the region, the reverse is also true – that is, considerable export opportunities exist for technical and professional service firms in Melbourne's North.

Making NBN Relevant to People's Lives

The NBN provides the capability to explore new boundaries for innovation in service delivery for individuals, for communities and for business.

The indirect impact of the NBN, potentially a very large benefit, will depend on how industry, organisations, education, health services, local government and the community in Melbourne's North respond to the intensive rollout of the NBN.

Success will only be achieved when innovation is affordable, understandable and relevant to improving outcomes for individuals, for communities and for business. A strategic vision is a must. This means a significant need for regional networks, regional organisations such as NORTH Link and the Northern Melbourne Regional Development Australia (NMRDA) Committee and local government to assist the region to understand the range of opportunities the intensive rollout of the NBN would provide. These organisations have a successful track record in guiding economic development and assisting local organisations. In Melbourne's North, the networking infrastructure to assist in maximising the regional benefit of the NBN already exists.

There is a commitment across the region – from all LGAs, business groups, universities, TAFE institutes, schools, health providers and other large stakeholders such as Melbourne Airport – to put critical services on NBN, to educate the public and business about using those services, and do to whatever is needed to facilitate the rollout. This will ensure that take-up targets are met and that installation can proceed quickly and efficiently.

The guiding principles of the approach by stakeholders in Melbourne's North are:

1. Recognise that service delivery models over the NBN are evolving and ensure that a basic level of service delivery can be delivered on a combination of the NBN and the legacy broadband infrastructure, while maintaining a strategy to deliver enhanced capability when all end-points are delivered on the NBN. An example of this is for remote monitoring of clients in the aged and community sector. Basic monitoring of activity in a residence can be conducted today using sensor technology and a standard internet connection. This application can be significantly enhanced by interactive video communications, which would represent the next logical evolution of this service given the greater availability of high speed broadband.
2. Identify service delivery models that can be managed from within the boundary of the 7 councils, so that a targeted deployment of the NBN in the geographic boundary can deliver maximum value to individuals, the community and business.
3. Where the service delivery models go outside the geographic boundary of the 7 councils, recognise that there are several participants involved in the end to end service delivery chain.

4. Recognise that the NBN alone will not meet all needs; rather, it forms part of an eco-system. For example, in an emergency, the information and services provided over the NBN must complement wireless and other relevant networks to provide the requisite level of communications, care and management.
5. Drive a range of productivity gains that are consistent with the implementation of a smart city strategy. This necessarily involves wireless and other infrastructure solutions, together with the NBN infrastructure.

Delivering value over the NBN

Stakeholders in Melbourne's North represent a diverse community of interests. The extent of public infrastructure in the region is shown is summarised here and explained in the map that follows this section.

Early childhood centres	289
Primary schools	152
Secondary schools	61
Universities	3 with 6 campuses
TAFEs	3 with 11 campuses
Hospitals	29
Aged care facilities	127
Government offices	14
Magistrates Court	2

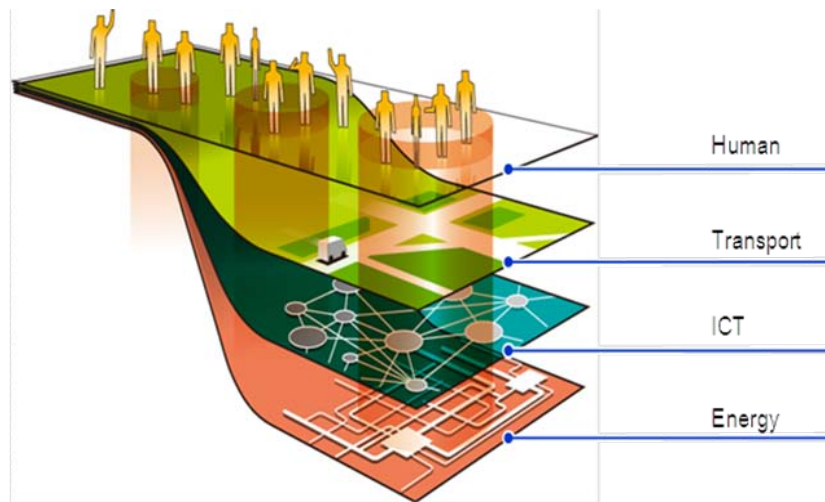
In addition the region includes Melbourne Airport and Melbourne's largest wholesale produce market, and supports a diverse range of businesses.

This extensive infrastructure provides the basis of implementing significant new services delivery models using NBN for aged care, health care, community care, education and business. A key aspect of the new service delivery models is a trend to providing Cloud services and greater use of video communication, both of which drive the need for the greater bandwidth available on the NBN.

Key initiatives identified are as follows:

1. Further developing the ICT literacy of the older members of the community, facilitating the pathway to assistive living and linking them to community care, medical support and family by leveraging the resources available through a broadband enabled eco-system.

2. Developing advanced assistive living models in the homes of the older members of the community. There is already research work being undertaken at La Trobe University on using advanced sensors in the form of robotics to deliver this outcome. RMIT University is also very active in the field of assistive living solutions.
3. Leveraging the very successful Broadband for Seniors business model to expand services via public kiosk infrastructure. For example, kiosks can be used to provide public access to counselling services, care services, training services and so on. Taking these services into residences is a natural extension of this work to reduce social isolation and improve remote care (note there are approximately 60 Broadband for Seniors kiosks deployed across the region).
4. Using broadband enabled kiosks as a means of connecting disadvantaged people, and people suffering from various form of mental illness, to relevant care groups in a way that is private and secure. The aim is to provide proactive support in the community rather than place stress on the police and other agencies to provide first line identification of these problems.
5. Delivering an education portal and high speed broadband to provide a secure link between members of the community so that they can communicate and collaborate. The purpose is to deliver improvements that can be achieved across a number of measurable factors such as improved education monitoring, and better community involvement. The e-education services can be delivered at the place of learning, at home or via public kiosk infrastructure. For example, kiosks can be used to provide public access vocational and language training services.
6. Enhancing public safety and emergency communications by providing improved access to information before, during and after emergency events.
7. There is an extensive workforce in the geographic area which commutes from within and outside of the geographic area. Faster broadband services will create more opportunities to work from home or from a location away from the traditional workplace.
 - a. At this stage, only 6 per cent of Australians telework, compared to 11 per cent in the United States and 10 per cent in Europe (Access Economics, 2010)
 - b. Increasing the rate of teleworking can have benefits for the nation, employers and individuals:
 - i. the estimated value of just a 10 per cent increase in employees that telework, for 50 per cent of the time, is between \$1.4 billion and \$1.9 billion a year (savings in carbon emissions, transport, infrastructure)
 - ii. employers can benefit from savings in office space and equipment, and employ highly skilled people regardless of their location or mobility
 - iii. for people who telework, the benefits in time and cost savings and increased flexibility are ongoing (Access Economics, 2010).
8. The generic concept of a Smart (or Digital) City is well canvassed across the world. But the practical implementation of these concepts is evolutionary process. The availability of ubiquitous broadband and wireless networks in combination enable the introduction of smart city concepts. The key elements of the smart city are embedded in the strategy of the 7 northern councils.



When planning the “Smart City”, the public and private stakeholders should be engaged to define a scalable and elastic single architecture, as a result of collaboration of each layer

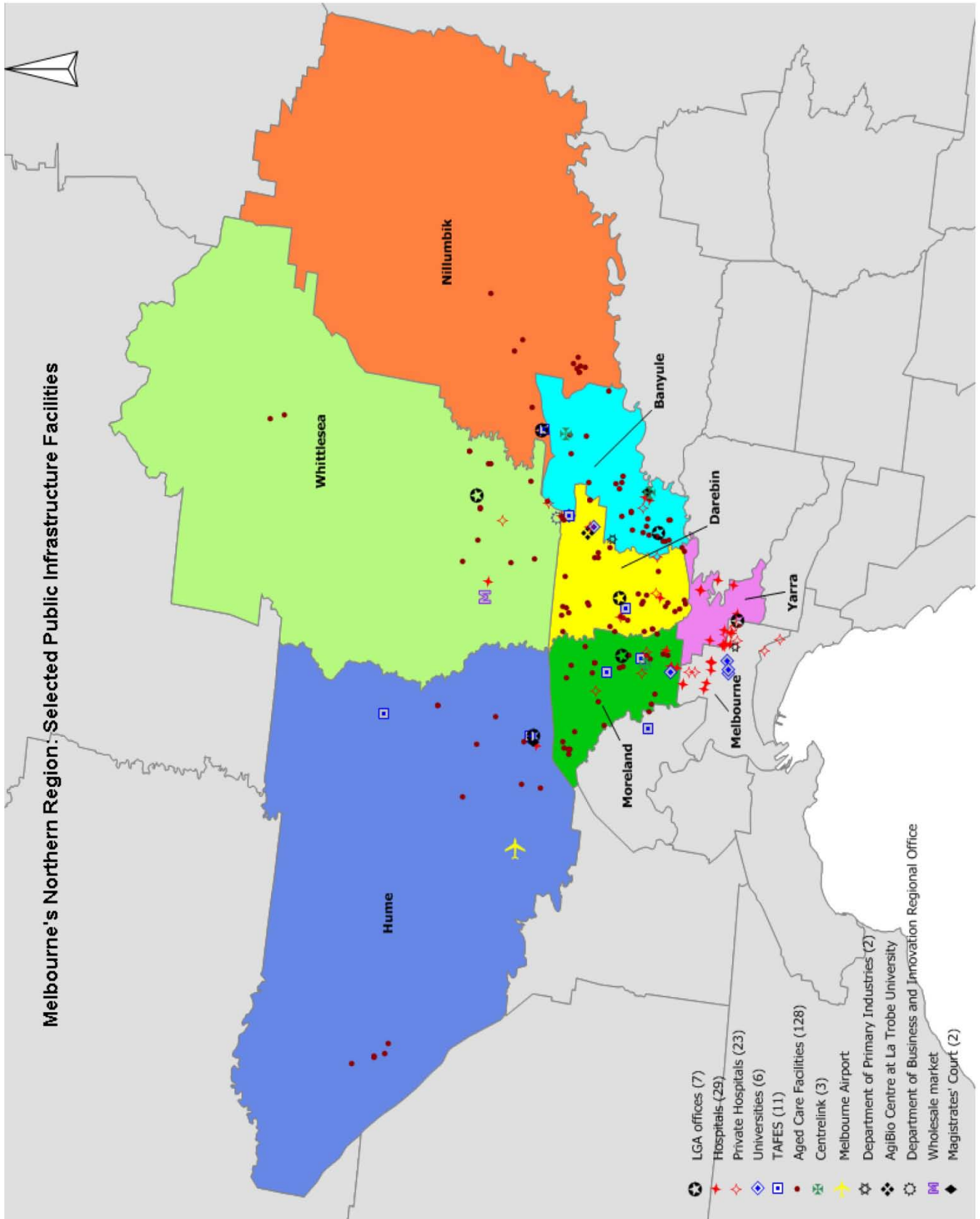
Delivering value for an ageing population

Policy initiatives across the globe are designed to address challenges for ageing population by pursuing the following common themes:

- inclusion and e-Inclusion of older persons
- longer economic participation and recognition of value of input
- closing the digital divide/connecting the generations
- empowering older persons
- active ageing and lifelong learning
- workforce shortages, independence, lessen dependency on the system and others
- mobility of the population.

It is globally recognised that there will be significant economic and social impacts if the digital divide increases and older persons are excluded from the digital revolution. ¹

¹ NEC provided advice and subject matter knowledge on the NBN and the delivery of new service models. NEC is also involved in a research project at La Trobe University in areas relevant to this submission.



LGA Offices:

Banyule City Council
Darebin City Council
Hume City Council
Moreland City Council
Nillumbik Shire Council
Whittlesea City Council
Yarra City Council

Public Hospitals:

Broadmeadows Community Mental Health Clinic
Bundoora Extended Care Centre
Cambridge House
Caritas Christi Hospice
Caritas Christi Hospice In Patients Building
Austin & Repatriation Medical Centre Austin Campus,
Studley Road Heidelberg
Austin & Repatriation Medical Centre Repatriation Campus,
Banksia Street Heidelberg
Community Forensic Mental Health Service
Forensic Inquiry Line
Melbourne Extended Care & Rehabilitation Service
Mens Medical Clinic
Mercy Hospital for Women
Moreland Community Mental Health Clinic
Northcote Day Centre
Peritoneal Dialysis Unit
Peter Mac Callum Cancer Institute
Riverside House
Royal Victorian Eye & Ear Hospital
Royal Women's Hospital
St Vincent's Hospital Melbourne
The Centre for Adolescent Health
The Northern Hospital
The Royal Dental Hospital of Melbourne
The Royal Melbourne Hospital, Grattan Street Parkville
The Royal Melbourne Hospital, Poplar Road Parkville
The Royal Melbourne Hospital The North West Area Mental Health Service
The Royal Melbourne Hospital Dialysis Centre, 267 Lygon Street Brunswick East
Thomas Embling Hospital
Victorian Institute of Forensic Mental Health-Forensic Care

Private Hospitals:

Brunswick Private Hospital
Cliveden Hill Private Hospital
Dorset Private Rehabilitation Hospital
Frances Perry House
Freemasons Hospital
Freemasons Hospital Day Procedure Centre
Healthscope Limited
Ivanhoe Manor Private Rehabilitation Hospital
John Fawkner Hospital
Jolimont Endoscopy Centre
La Trobe Private Hospital
Melbourne Endoscopy Group Pty Ltd
Melbourne IVF
Melbourne Private Hospital
Northpark Private Hospital
Olympia Private Rehabilitation Hospital
Southern Cross Specialist & Surgical Centre
St Vincents & Mercy Private Hospital
Sunbury Private Hospital
The Albert Road Clinic
The Mercy Private Hospital
Warringal Private Hospital
Woodleigh Nursing Home Pty Ltd

Universities:

RMIT Melbourne city campus
RMIT Brunswick campus
RMIT Bundoora campus
La Trobe University Bundoora campus
La Trobe University Melbourne city campus
Australian Catholic University - Fitzroy

TAFES:

NMIT, Cnr Belfast & Bell St Broadmeadows
NMIT, 77-91 St Georges Rd Preston
NMIT, Cnr Cooper St & Dalton Rd Epping
NMIT, Civic Drv Greensborough
NMIT, Cnr Bell St & Waterdale Rd Heidelberg
Kangan Institute - Essendon Campus
Kangan Institute - Moreland Campus
Kangan Institute - Broadmeadows Campus
Kangan Institute - Coburg Campus
Kangan Institute - Craigieburn Campus
RMIT TAFE - City Campus

Aged Care Facilities:

RSL Village Hume
Ottoman Village Aged Care
Victoria Manor Aged Care Facility
Corpus Christi Community
Roxburgh Nursing Centre - Moran Health Care Group
Bridgewater Lake Estate
Bridgewater Aged Care Facility
Riddell Gardens
Lion's Club of Sunbury, Elderly Peoples Home Inc
Goonawarra Nursing Home
Goonawarra Gardens
Abbey Court
North Western District Private Nursing Home
St Anne's Hostel
Green Gables
Meadowglen Nursing Centre - Moran Health Care Group
Grace of Mary Greek Cypriot Hostel
Epping Aged Care
Queens Lodge
South Morang Mews
San Carlo Homes for the Aged
Regent Aged Care Facility
GV Vaccari Hostel
Dalton Lodge Nursing Home
Sunlight RAC
Whittlesea Lodge Private Nursing Home
Dawnville Aged Care Services
Care Life Australia
Willandra
Kooronga Close
Judge Book Memorial
Eltham Villa
Eltham Lodge Memorial Village
Catholic Homes
Catholic Homes
Wattle Glen Private
Patricia Gladwell Aged Care Home
A.C.E.S. - Iris Lovett-Gardiner Caring Place (Koorie Comm.)
Brunswick Lodge Supported Residential Services
Boyne Russell House
Kanella Aged Care Facility
St Joseph's Place
Gilgunya Village
Emily Lenny
Masonic Court Coburg

Aged Care Facilities (cont.):

Anzac Lodge
Wesley Aged Care Housing Services
Windsor Manor
Regis Karingal Manor
St Basil's Homes for the Aged
Glenroy Private Nursing Home
Benetas @ Colton Close
Glenlyn Aged Care Facility
Glenville Lodge
Monterey
Plumpton Villa
Villa Del Sole
Glengowrie
Edith Bendaill Lodge
Dorothy Impey Home
Brunswick Manor
Benetas @ Gladswood Lodge
Latrobe Private Nursing Home
The Alphington
Fred Combridge House
Lonsdale House Private Nursing Home
Veronica Gardens Northcote
Veronica Gardens
Little Sisters of the Poor - St Joseph's Home
Parkwood Supportive Care Home
Ruckers Hill Aged Care Facility
Marion House
Hilltop Private Nursing Home
Bellhaven Hostel
Uniting Aged Care Victoria & Tasmania - Lumeah Home for the Aged
Latrobe Private Hostel
Latrobe Village
Eden on Ashley
Eden Terrace
Aberdeen Aged Care Facility
Radford Private Nursing Home
Ravenswood Court Hostel
Reservoir Gardens Retirement Home
Reservoir Rotary Village Hostel
RSL Village Reservoir
Summerhill Residential Park

Aged Care Facilities (cont.):

Twin Parks Aged Care Centre
Medina Manor
Anesi Aged Care Facility
St Aidans Nursing Home
St Paul's Hostel
Arlington Nursing Home
Woodleigh Aged Care Facility
Preston & Districts Nursing Home - Moran Health Care Group
Ian Brand Nursing Home
Villa Maria Aged Care Residence Bundoora
Vasey House
Bundoora Village
Benetas @ Dowell Court
Cleveland Gardens
Deloraine Private Nursing Home
Grace Villa Aged Care Accommodation
Greensborough Private Nursing Home
Clevedon Terrace
Catholic Homes
Elizabeth House
Rowena
Bamfield Lodge Supported Residential Service
Darley House
Sir William Hall Hostel
The Grace Garden Aged Care Facility
RSL Village Ivanhoe
Graceton Aged Care
Catholic Homes
RSL Village Heidelberg West
Waterdale Assisted Living
Airlie
Catholic Homes
Chatsworth Terrace
Strathalan Community
Macleod Village
Regis Macleod
Terry Barker Nursing Home (part of Macleod Village)
Jedasa House Private Nursing Home
Rosanna Views Residential Aged Care Facility
Assisi Nursing Home and Hostel
Viewbank House SRS

Centrelink:

Centrelink Moreland
Centrelink Heidelberg
Centrelink Greensborough

Department of Primary Industries Head office Department of Primary Industries Bundoora Centre

Melbourne Airport

AgiBio Centre at La Trobe University

Department of Business and Innovation

Regional Office – University Hill Bundoora

Wholesale Market

Heidelberg Magistrates' Court

Broadmeadows Magistrates' Court

Schools:

LGA	Early Childhood	Primary	Secondary
Banyule	49	25	9
Darebin	41	22	11
Hume	48	31	10
Moreland	52	20	11
Nilumbik	24	16	2
Whittlesea	45	24	11
Yarra	30	14	7
Total	289	152	61

Understanding of the Broadband Landscape

Melbourne's North is a region that has a deep understanding of the broadband landscape and a proven capability to develop and lead innovative programs that maximise the benefits of the broadband infrastructure. For example, the City of Whittlesea's conduit policy and approach, implemented in 2001, is the model taken up and used by NBN Co in greenfields today. Whittlesea has a strong reputation for the technology innovations it has developed and delivered, both within the organisation and across the sector (see *Appendix 3: Case studies*), leading to 14 national innovation awards and world recognition in 2007 as a top 21 Intelligent Community by the US-based Intelligent Communities Forum.

Critical connections

Preliminary discussions with key stakeholders in the region have led to indications on how early NBN rollout will assist different sectors.

Education

The education and training sectors are undergoing major changes internationally. The need for change is driven by the cost of traditional education infrastructure, the increasing demand for education and the need for greater flexibility through the learning process.

Educational institutions in Melbourne's North are well positioned to benefit from these changes by exporting services. An early and intensive NBN rollout in the region will enable future growth in its service exports.

In the decade to 2010, the education and training sector in Melbourne's North added 7,000 jobs, growing employment by 32 per cent in the period.

Medicine

The health sector is already a significant employer in Melbourne's North and the potential is to develop specialist precincts around major hospitals. The NBN will enable:

- online consultations by specialists
- improved communications and interpreting services with patients
- sharing of complex medical imaging
- a greater capacity for research and training
- knowledge exports.

In the decade to 2010, the health care and social assistance sector in Melbourne's North added 13,000 jobs, growing employment by 35 per cent in the period.

Transport and aviation

Melbourne's North is home to a large number of transport, warehousing and logistics businesses, which are dependent on broadband for their operations. Improvements such as the NBN would increase productivity and competitiveness for this important sector.

Melbourne Airport has more than \$2 billion in investment planned in next two years, with employment for 12,500 people. This equates to 11,000 full time equivalent positions. The main employment areas are retail, aviation, air traffic control, air and road transport, airport management, security and hospitality. The NBN would allow Melbourne Airport to be at the forefront of global communications and not fall behind its international equivalents. There is also huge scope for efficiency improvements across airport operations with the NBN.

Industry and research organisations

Leveraging existing \$350 million investment in research, the Biosciences Research Centre and the Institute for Molecular Sciences at La Trobe University will create a formidable cluster of scientific research in Melbourne's North, creating opportunities for high tech business developments and educational exports via improved online programs. The NBN would be of significant benefit in its operations.

Benefits of Regional NBN Strategy

To government

Benefits to government of an early NBN rollout in Melbourne's North include:

- improved communication with residents
- improved communication with business
- cost benefits from managing council business online
- greater capacity to influence strategic vision and economic development
- greater connectivity for the region's libraries and learning centres.

To Industry

An early NBN rollout in Melbourne's North will result in a move towards a more knowledge intensive focus and high value added businesses, which means:

- strengthening the region's key competitiveness including capacity for innovation, market access, logistics and Melbourne's North brand
- intensifying R&D and growing the number of patents
- moving basic manufactures to knowledge intensive production, new products, processes, services and engineering solutions

- growing exports of higher value production, associated technologies and engineering solutions which include innovation in product delivery
- improving branding and marketing channels and increasing focus on exports
- opening up Melbourne's North, its knowledge, skills and manpower to attract global opportunity, particularly in areas of research and development.

New business opportunities

The NBN would generate new business opportunities for Melbourne's North, including:

- new media, such as online publishing, film and web TV
- integration of social media into existing operations and market development strategies
- engineering and other complex design exports
- online retail linked with local logistics operations, blending the existing infrastructure of transport hubs, roads and rail
- smart grids
- increased access to global markets for products and services.

Saving manufacturing

Melbourne's North is a region of manufacturing businesses and manufacturing skills, and many of these businesses are moving to a high tech future.

If manufacturing industries are to survive in Australia they will require increasing inputs of knowledge and innovation in processes, supply chain integration and marketing. A position in a strong high tech cluster of highly connected businesses is much more likely to provide a base for future growth. The NBN may prove critical for manufacturing firms in Melbourne's North.

Saving jobs

In this region of historically high manufacturing employment, the NBN will improve employment prospects and diversification of knowledge based employment.

This needs to happen now because:

- the decline of manufacturing has reduced the rate of job generation in the outer suburbs
- the advent of the knowledge economy has increased the rate of job generation in the city centres and inner suburbs.

Leveraging export potential

Early introduction of the NBN across the region will increase:

- export of skills, such as design and engineering skills, and business services skills

- export of intellectual property rights in bioscience, manufacturing, media, aerospace systems and technology, green technologies
- licensing of locally developed intellectual property such as inventions relating to climate change adaptation technologies or renewable energy
- supply chain integration with international and interstate customers to enhance the export of specialist food items and manufactures
- export of education and skills development.

New jobs and new skills

Regional and vertical integration of schools, tertiary education, research and industry are important goals. Creating opportunity for the young people in the region means providing the opportunity for school students to link at least some of their learning activities with the specialisation of the region's tertiary institutions. These links will allow local students to benefit from the region's investment in post school education in subjects such as aerospace, biotechnology and health sciences, construction, nursing and many more.

Home based businesses

Intensive rollout of the NBN in Melbourne's North will increase the opportunity for residents to develop home based businesses. Many of these businesses will develop the capacity to export services and some may have the capacity to grow and move into commercial precincts.

Environment

There will be environmental benefits from online communication, reducing the need to travel to work on a daily basis.

Appendix 1: How Council Leadership can Maximise Impact of NBN

Councils will play an irreplaceable role in maximising the impact of the NBN. With our active involvement, not just as a partner with NBN Co on the planning and engineering front but as the agent for a broader legacy, the impact can be transformational.

It will positively affect the design and delivery of services, the engagement with and skills of citizens and the performance of local SMEs. To achieve this impact will require Council leadership – as an exemplar and advocate, as a partnership-builder and as an authoritative source of information and support for local business.

Council services and high speed broadband

Councils are elected to deliver public services efficiently, effectively and economically. Our aim must be to harness the new digital infrastructure and interactive capacity of high speed broadband to improve our services, reduce costs, tap into the energies and creativity of our staff, and empower our citizens.

To exploit the opportunity of the NBN is as much about Councils working in new ways as it is about new technologies. This is what local government in the interactive 'Web 2. 0' era means.

An increasingly sophisticated and technically adept community, used to accessing social media, expects to receive the same kind of responsiveness and service 24/7 from e-government that it is used to when accessing commercial services online. High speed broadband can only raise expectations and we need to meet them.

Why should Councils take this leadership role? Because no-one else can perform this role and because the benefits of so doing – and doing it well – are clear to us.

The more we can digitise services to and communications with the public, the more 'bang for the public buck' can we achieve.

This is attractive in itself but the prize is also of enhanced relationships, shared problem-solving and more instant feedback loops with the public, improving the quality as well as the cost-effectiveness of services.

Shifting business online will save money. But the really exciting cost-savings will come from restructuring the existing processes entirely. Digital media allow far more people to contribute to solving a problem, which means greater efficiency and a catalyst for democratic renewal. This is business process reengineering in which clients and citizens take active parts.

So Councils must lead by example in the implementation of integrated online services and digital communication with (and with the involvement of) its citizens – and develop staff and member capacity to deliver this. And we will.

We will also be **an advocate** for, enabler of and where appropriate provider of initiatives aimed at ensuring that local communities have the knowledge, familiarity and skills required to access the benefits of the emerging digital economy and online public. We will use our network of libraries and other community facilities to support this work.

The community cannot exploit high speed broadband unless it is broadband-ready and has access to the right tools – if not at home, then at least in the community. Councils therefore see digital inclusion as a strategic imperative for the community and also the public service.

Maximising the impact of the NBN: Councils as partnership-builders

In pursuit of these objectives, Councils need to show leadership not only as a service provider and advocate for community development, but also **as a convenor of and partnership builder** with all those other forces that will be required to maximise the impact of the NBN locally.

The Councils need to go beyond the role of effective partner with the NBN on the engineering and planning front to being a **client for the broader legacy** that we want to leverage from the advent of high speed broadband.

So it is vital that Councils build on partnerships with the local private sector, with the community and voluntary sectors, with other tiers of government, other parts of the public sector providing services locally, in education and training, employability and business support and in social and health care. All will need to coordinate their activities and investments in support of an effective local strategy to exploit the NBN.

We see it as our role – and it is a role only elected local government has the legitimacy, capacity, focus and determination to play – to help convene and coordinate these forces and secure their buy-in and contribution so as to obtain the maximum benefit for and impact on our local area and community.

Councils can be an exemplar in their own use of broadband-enabled technologies, quality digital content and Web 2.0 approaches that encourage interactivity with and user-created content from local citizens. They can be an influencer over the actions and interventions of all relevant partners to the strategy. And they can be an enabler of the digital understanding, capacity and use of their own citizens.

Maximising the impact of the NBN on SMEs

Small businesses typically lack the resources, time or capacity to explore the potential of, adopt and exploit new technology and applications. Yet, they are among the biggest beneficiaries of online activity, as it:

- enables them to access customers, leverage knowledge networks, research new markets and develop relationships with partners throughout the world
- improves business efficiency and productivity
- enables firms to offer new products and services
- allows increased use of online tools and access to new Cloud services that will reduce business costs and raise productivity
- enables them to get onto supplier lists with larger businesses or win public sector tenders as access to high speed broadband is becoming a standard minimum requirement
- improves marketing with use of rich media.

The Councils place a major emphasis on supporting local SMEs to take advantage of high speed broadband. We will work to ensure that all business support activity carried out in the area, whether provided by the Council, federal, state regional agencies or universities, guides SMEs on how to exploit high speed broadband in their enterprise. We are reviewing local business incubators supported by Councils in the light of the arrival of the NBN in the area and the anticipation that that SMEs which rely on faster speeds and bandwidth for their businesses will look to locate in our areas.

Appendix 2: SEIFA Data

Below is the SEIFA score data from the 2006 census (1000 is average over all CDs in Australia – weighted averages are shown).

Region	Index of Relative Socio-economic Disadvantage: is derived from Census variables related to disadvantage, such as low income, low educational attainment, unemployment, and dwellings without motor vehicles.	Index of Relative Socio-economic Advantage and Disadvantage: a continuum of advantage (high values) to disadvantage (low values) which is derived from Census variables related to both advantage and disadvantage, like household with low income and people with a tertiary education.	Index of Economic Resources: focuses on Census variables like the income, housing expenditure and assets of households.	Index of Education and Occupation: includes Census variables relating to the educational and occupational characteristics of communities, like the proportion of people with a higher qualification or those employed in a skilled occupation.
Northern Melbourne	1006	1000	1001	1009
Melbourne	1028	1022	1018	1026
VIC	1008	1012	1006	1008
AUST	1007	1005	1008	999
Relative to:				
Melbourne	97.8%	97.8%	98.3%	98.4%
VIC	99.7%	98.8%	99.4%	100.1%
AUST	99.9%	99.5%	99.3%	101.0%

Appendix 3: Case Studies – Education, Health, Industry and Local Government

Kangan Institute

With existing campuses located across five LGAs, and with video conferencing and lecture capture facilities available on its major campuses, Kangan Institute is poised to take immediate advantage of connection to the NBN. As more students demand the ability to learn at a time and place of their own choosing (including in the workplace and on the job), existing bandwidth limitations are severely hindering attempts to upskill more and more Victorians in line with both state and national imperatives.

2012 will see a major overhaul of the Institute's IT infrastructure, with new student management, library management and learning content management systems being implemented across the Institute, all of which it is anticipated will place further strains on the Institute's internal and external bandwidth demands, and all of which will benefit from an early connection to the NBN.

Availability of high-speed broadband internet connectivity through NBN will allow Kangan to:

- Significantly complement and augment a strategy for flexible and blended online learning by providing a high speed internet connection to our students and teachers. It will give Kangan the added opportunity to offer courses and training online as well as enhanced federated collaboration and access to remote communities, students, industry, businesses and municipalities.
- Enhance the existing virtual classroom experience by adding interactive rich multimedia teaching and learning content, podcasting and simulations as well as high definition video for enhanced collaboration and communication. It will allow students to learn remotely at their own pace, even if they have chronic illnesses, physical or emotional conditions that preclude them from participating in a traditional classroom.
- Provide 24x7 access to its standard operating environment via virtual desktops to students and staff. They will enjoy a much better experience due to the high speed connectivity either at home or at community locations such as a public library. Virtualised desktops will also lead to the reduction in desktop energy consumption by up to 80%.
- Adopt Cloud services. Kangan can fast track moving Storage and Servers to IaaS (Infrastructure as a Service) and key enterprise business systems to SaaS (Software as a Service). It will also open up opportunities for Kangan to offer IT infrastructure and system solutions to other regional TAFES and remote educational institutions.

Michael Segrave

Consultant. Business Development Solutions

La Trobe University

The primary impact of the NBN on productivity is the opportunities the NBN presents for communication in multiple formats with external partners.

The University is linked to other universities and research institutions via Vernet – a high speed internet pipeline that is comparable to the NBN. There are real opportunities to be explored in both teaching and research for the connection between the University and the outside world at relatively high speed broadband.

The NBN has the potential to enhance communication options with:

- industry
 - enabling transfer of large data sets facilitating research and development
 - enabling face to face communication via video links
 - collaboration and research activities less dependent on collocation
- teaching and research
 - large data sets such as X-rays and CAT scans can be transferred between the University and partner health providers to improve teaching for health science students
 - the same capacity will enable expanded research opportunities
 - significantly enhanced capacity to deliver high quality video communications to remote locations such as hospitals and health services where students and staff are undertaking clinical placements in a workplace environment.

The NBN will potentially impact on:

- staff productivity
 - capacity to undertake research and teaching from locations other than the University and to access the data sets and communication links required to work effectively off site
- utilisation of Cloud services
 - hosted application services like Cloud more feasible with access enabled through NBN pipeline.

La Trobe University's strategic plan – Vision 2015 – commits the University to 30 per cent growth by 2025 and the operational plan further commits the University to developing flexible online programs over the next two years in preparation for the high speed broadband access to other than university sites enabled by the NBN.

NMIT

The inclusion and expansion of video based activities is crucial to teaching and learning activities of the 21st century, and NMIT is keen to use a video service that would be cost effective for use by students and staff. Following are examples of how the technology could be used.

Robust video conferencing capabilities will mean remote programs can be delivered at maximum quality using two-way synchronous (video conferencing) video for a range of applications, including:

- industry seminars held by the Department of Visual Arts
- classes for skilled migrants in the Overseas Qualified Professionals Program who are working full time in a different field and cannot attend classes
- interviews for applicants of the Bachelor of Early Years Studies
- PD, moderation sessions and meetings for Northern AMEP Consortium members from 9 sites across the region, reducing wasted travel time
- delivery of workplace English Language and Literacy (WELL) at business sites
- delivery of the Home Tutor Scheme for new migrants in their own homes
- access to a virtual classroom in remote areas and while on the job for trainees and apprentices in hospitality and tourism
- visual practical techniques required for massage could be viewed and practised by students studying the Certificate IV in Massage Therapy Practice
- off campus/flexible delivery student numbers are increasing and services are needed to ensure their success, including online literacy sessions to promote library e-resources and effective research skills
- online learning for first-year units of competency that are generic to all Building Structures and Services program areas could be delivered, allowing students to enrol immediately and not wait for a place
- online Recognition of Prior Learning programs would provide flexibility in delivery models and strategies to suit an adult learning environment
- consistency in carpentry and plumbing courses would be increased by use of technology such as podcasts, video links and online test banks
- the Certificate IV TAE flexible course, now delivered nationally online, could enrol students from overseas.

Video conferencing would also be beneficial for face to face sign ups, training negotiations and confirmation of competence.

Rob Hagan

Chief Information Officer

RMIT University

1. How RMIT might reap productivity improvements from NBN:

- Enable faster data connection across RMIT's six campuses to both students and staff (75,000 student and staff) improving, data streaming, video and web conferencing, data casting, broadcasting of educational content and real time online engagement
- Support RMIT transition of all students and staff to Cloud computing
- Increase our VoIP and digital communication capacity
- Improve our network architecture, domain designs and storage through virtualisation (reducing costs and increasing productivity)
- Expand network capacity and improve connectivity (link City, Brunswick and Bundoora)
- Promotion of digital literacy in educational design and delivery through the increased usage of broadband technologies to the community
- Improved remote access and control of automation of operational equipment (ie Advanced Manufacturing Precinct equipment).

2. How RMIT might identify potential new business opportunities:

- Development of new products and services through online education and learning (RMIT is a part owner of Open Universities Australia). Increase/open new markets locally, nationally and internationally giving a new footprint from the Northern region. This also will give more flexible options to the end user
- Research and innovation opportunities with industry, government and the local community (eg mobile technology, application development, gaming technology, 3D virtual interaction, eHealth)
- Drive opportunity for small business participation of new e-Business models in collaboration with the University.

3. Potential for innovation in the delivery of existing business:

- Support current offerings from Open University Australia (broaden flexible delivery, new curriculum design and pedagogy)
- Further enhance our remote access facilities to students/staff and employers
- Redesign ICT skills and training to support industry and the community
- Efficiently manage our huge system load (75,000+ users) and bandwidth hungry applications and clients (eg Advanced Manufacturing technologies –files transfers, including downloads and uploads, storage and improved latency).

Ian Kearney

Assistant Director - Industry Engagement Global Business & Engagement

Northern Health

Northern Health has an existing state recognised internal video interpreting service that utilises its own health-service-wide VoIP phone system. They are currently in the advanced planning stages of a trial to expand this system to service external clients in their home or satellite clinics. The NBN would facilitate the delivery of high quality video to these clients. With the increased bandwidth of the NBN, they could upgrade these conferences to high quality video, increasing the accuracy and usefulness of service.

As the Northern Health Interpreting Service has proven itself an efficient performer, there have been discussions about whether Northern Health could on-sell this service to other health providers in the area, thereby reducing costs to those health providers and increasing positive patient outcomes. This has the potential to become another revenue stream for Northern Health.

Another area currently under investigation and near preliminary trials is the remote attendance of specialists to the emergency department (ED) at The Northern Hospital. The current plan is for a specialist in another area within the hospital (or Northern Health campus) to remotely consult a patient in the ED without physically attending. This will allow more timely diagnosis of illnesses and increase efficiency by reducing travel time between clinics/locations. What the NBN enables is the expansion of these plans to allow an on-call physician to attend from a location outside the hospital to conduct the same interview remotely, utilising NBN bandwidth and connectivity.

The NBN has the potential to realise cost savings and increase positive health outcomes by allowing instant remote attendance of health specialists to distant locations. There have been many trials of programs of this type over recent years, none of which were continued. Failure to deliver a reliable, high bandwidth connection was seen to be the primary cause of the failure of these trials.

Northern Health would be particularly advantaged with the introduction of the NBN as it would help to service a growing and diverse population in an efficient and timely manner. The potential improvement to tele-medicine that the NBN would facilitate could make a marked difference to the lives of all the people exposed to the technology.

Yul Rustem

Director ICT Services

Dolphin Products

Dolphin Products creates and manufactures complex plastic products. In state of the art facilities, it uses computerised robotic controlled injection moulding machines to manufacture and assemble products. The company supplies components and assemblies to a diverse range of local and international clients from industries including automotive, gaming, industrial, mining and medical. They export to Europe, North and South America, India, China and countries in the Pacific Rim.

Preliminary discussions resulted in Dolphin identifying the following ways that NBN could be utilised by the business:

1. Speed up download and upload of large CAD files from and for our customers
2. Improved transfer of larger graphics files with our gaming customers
3. Improved access to our gaming web application and the Dolphin website
4. Remote access to our network for our approved users
5. Possible use of Cloud applications
6. Internet business access
7. Fast and low cost video call and video conference communication with Head Office in Hong Kong, overseas customers and interstate sales representatives
8. Conduct injection mould machine diagnostics with overseas machine engineers (Wittmann Battenfeld)
9. Improve ordering and logistics communications
10. Speed up banking services and payments (as they become available from our bank); currently still using slow dial up facilities
11. Support new features and communication services as they become available, based on our new Telstra IP telephony system.

Mario Turcarelli

General Manager Operations

Banyule City Council

Two projects give examples of how the NBN will be utilised within the municipality.

Heidelberg West Superhighway Project

Heidelberg West is flanked by one of the largest training hospitals in Melbourne, the Austin (with significant medical research facilities including the new Olivia Newton John Cancer Research Centre), La Trobe University, NMIT and the new Charles La Trobe Secondary College.

Yet it has one of the lowest socio-economic standings in Australia. The area has 40.6% State Government owned housing, constructed in the 1950s, and is characterised by high degrees of social exclusion and low socio-economic status. Residents have extremely low levels of personal computer, internet access and vehicle ownership.

To provide access to local learning, Banyule City Council has:

- led a plan for the establishment of a children's services and learning hub in Olympic Village (part of Heidelberg West) next to Olympic Village Primary School
- embarked on a plan to provide a second community learning hub that will house a library and information portal linked to NMIT; the hub will provide the region and local community with access to the best in information services, including interactive meeting rooms for video conferencing and the latest in information services.

The project will provide access to the best that the information superhighway has to offer for the medical, education and research sectors and industry in Heidelberg West and neighbouring suburbs. It will improve the social and economic factors that have held this area in a state of disadvantage and provide direct access to information and learning for local residents.

Macleod Village Shopping Precinct

Some parts of Banyule are 'broadband blackspots' – areas that are unable to access high quality broadband services. This project will remove all remaining broadband black spots from within the municipality, with a particular focus on Macleod.

The Macleod Village Shopping precinct has 45 businesses. An inability to access ADSL or cable broadband is a significant impediment to their profitability and sustainability. Council is investigating opportunities through the NBN rollout that may deliver on improved access for businesses and the local community, and particularly local communities like Macleod.

Given's Macleod's proximity to La Trobe University, the Biosciences Research Centre and Institute for Molecular Science and the State Forensic Laboratory, the relationship between the knowledge economy and local communities is critical. Neighbouring communities that provide an increasingly important labour pool and ancillary research capacity for these research facilities need to have the highest levels of broadband connection to support these industries.

Vincent Ryan

Manager Strategic & Economic Development

City of Whittlesea

The City of Whittlesea is working on an Intelligent Communities Strategy, which includes the following plans.

- **Ongoing WIRED development:** Work on fibre optic conduit planning until marketplace is operating effectively. Use development planning authority to encourage installation of effective premise connections to NBN.
- **Maximise the use of existing conduit:** Explore opportunities to utilise existing conduit to bring broadband to new estates. Accelerate the deployment of fibre by utilising council's existing conduit to provide a pathway to the premises.
- **Staff training program:** Trained staff are essential to fully utilise broadband as a means of providing services and information to the community.
- **Development of an integrated web service channel**
- **Link with other community service agencies to deliver services:** Identify and explore agreements to work with community agencies to deliver a joined up service model.
- **Research impact of broadband on businesses and local community.**
- **Optimising communications technologies for business:** Offer training for business to assist in transforming the way they do business, marketing or sales, or lowering cost of business.

Some collaborative projects are summarised below (most depend on external funding).

1. Research on local Home and Community Care (HACC) elderly to identify the value of being able to stay in their own homes (by using technology) rather than moving into assisted housing (with HACC services, NARI and Institute of Broadband Enabled Society, University of Melbourne).
2. Research on social impacts of broadband on the local community (with Swinburne University).
3. Remote sensing pilot study to monitor air quality in the vicinity of DSE managed back-burning to provide alerts to asthma sufferers (with DSE and Duis Computing).
4. Pilot study of automatic medication for HACC clients (with HACC services and RMIT).
5. Digital Inclusion program with HACC clients to create a physical and virtual community hub for social interaction to support the elderly to address social isolation (council's HACC team).
6. Trade training to build local workforce to support the NBN rollout (with Peter Lalor College, Hume/Whittlesea LLEN, RMIT University).
7. Business assessment scorecard program to facilitate ICT uptake in local businesses to strengthen local businesses (with NMRDA).
8. Teleworking action research to address communities under financial and family stress by enabling families to lower their cost of living.
9. Library digital hub that promotes digital awareness and library telework space utilising an active process of building collaborative networks between businesses to foster innovation.

Brad Wynter

Manager Organisation Improvement

City of Yarra

The City of Yarra has had an enduring interest in the application of technology as a means of facilitating economic and social inclusion for all of its community. Yarra has worked for many years in partnership with community and State Government agencies to address access and equity issues associated with technology and lifelong learning for isolated and disadvantaged members of the community. Ensuring social and economic inclusion is a priority value for the Yarra community.

- **Digital divide:** 13% of households in Yarra are public or social housing and the residents are among the most disadvantaged in Australia. Yarra intends to continue supporting work with community and State Government agencies to ensure access to modern technology and high speed broadband for refugees and disadvantaged members of the community.
- **Lifelong learning:** Council has a 5-branch 'walk to' library service, where branches operate as local hubs for community access. The new North Fitzroy Community Hub will be an example of modern community access point that will allow citizens access to world wide web and modern digital services. Council intends to trial remote access to council services through an integrated customer service point.
- **Environmental performance:** Active monitoring and managing environmental performance of communities, buildings and facilities will be supported by the NBN.
- **Staff development:** The use of high speed broadband to provide reliable links to services in the community will be increasingly imperative. Staff are actively encouraged to find new ways and means of using high speed internet to provide services in a more efficient and effective manner, including care planning and assessment services in HACC, and service coordination with hospitals and non-government agencies.
- **CITY project:** Award winning work was commenced in 2008 to review and improve 14 core council customer service business processes and the work on implementation of outcomes continues.
- **Supporting digital arts:** The City of Yarra is renowned for its vibrant and emerging arts community. NBN will allow further growth and exploitation of this emerging field and development and sharing of creative opportunities in Yarra and the North.
- **Knowledge workers:** Yarra has a high concentration of global knowledge workers and will have a high demand for premium broadband services to support this emerging economy.
- **Demand aggregation:** Yarra City Council would be interested in exploring demand aggregation mechanisms for the benefit of institutional and low income members of the community. This will ensure impediments to access to relevant technology will be removed.
- **Digital proficiency in the not-for-profit sector:** The NBN presents an incredible opportunity to bring the not-for-profit and non-government sector to an appropriate level of digital proficiency. This will improve efficiency and effectiveness of the sector and provide better outcomes for clients and the community.

Craig Kenny

Director, Community Programs

Darebin City Council

Darebin City Council is keen to utilise the capacity of the NBN to assist to deliver more responsive and increased services to the community. Access to high speed broadband for Darebin staff and community will provide the following benefits:

- Increased community involvement in decision making through consultation, public participation, community engagement and representation.
- Improved ability for businesses to compete globally, contact customers and suppliers around the world, provide training to offsite staff and access to remote staff using satellite offices.
- ABS data from 2006 Census shows that Darebin has 1.5 times the Melbourne average of people earning their living through the arts, with Thornbury having twice the Melbourne average and Northcote a sizeable 3.7 times the average. The NBN in Northcote and Thornbury will provide a platform for artists to undertake interactive online exhibitions and provide artists' comments and teachings in different languages.
- High speed broadband will allow Darebin's cultural and artistic services, programs and events to be promoted throughout the municipality and the world. People who are unable to attend the community activities or events are able to participate through telepresence.
- Darebin is home to two highly successful business incubators – ArtDECL and the internationally recognised Darebin Enterprise Centre. ArtDeCL targets creative and digital arts businesses. Access to fast broadband will ensure that high tech businesses are able to develop data rich content for their products that they are developing.
- Marketing and promoting Darebin's spaces and places, recreation and leisure facilities.
- Reduce the environmental impact associated from council, business and resident operations through a reduction in energy use and greenhouse gas emissions.

Some projects either commencing or are under consideration include:

- ICT Strategy for Darebin Community.
- Free community Wi-Fi is currently being rolled out in Reservoir strip shopping and will soon be rolled out in Preston, Northcote and Fairfield strip shopping centres. The NBN will complement the Wi-Fi and enable municipal wide connection to staff and residents.
- The new Reservoir library will be adaptable for community and business learning, with connectivity, conferencing and business telemeeting, and video based telecommunications.
- Increased opportunities for community to learn through online tutorials, lectures and workshops delivered in partnership with Kangan Institute and La Trobe University.
- All libraries in Darebin will be connected and provided with high speed connections for community and disadvantaged groups to use.
- Online HACC assessment and delivery of elderly social, fitness and wellbeing programs.
- Use of improved mobile computing or video based telecommunications technology for staff to deliver services remotely.
- Development of internet training services at the Intercultural Centre with Spectrum Migrant Resource Centre to build digital capacity and community accessibility.
- Creating connected community hubs and neighbourhood centres with training facilities for business and residents.
- The new Darebin Arts & Entertainment Centre will provide theatre and conferencing technologies and fast broadband connection for online theatrical performances.

Eddy Boscarol

Manager Economic Development & Civic Compliance

Hume City Council

1. To overcome major challenges surrounding educational attainment, Hume City Council delivers a range of tertiary courses with university partners through its Global Learning Centres, which incorporate video conferencing, tele-presence and online learning facilities. This reduces the need for residents to extensively commute for education. Barriers to education, both geographic and financial, will be reduced as more education services can be delivered online. The availability of ubiquitous high-speed broadband has the potential to significantly extend the reach, availability and quality of education across the region.
2. The rollout of NBN will facilitate a paradigm shift in the way education is delivered in Hume. Through the Hume Global Learning Centres, access to higher education will be a reality. Hume City Council will partner with schools, TAFEs, registered training organisations and other learning institutions to develop and collaborate on innovative and flexible educational services and resources. This will extend online learning resources to the home and workplace, and offer students and learners, who cannot access courses via traditional means, the opportunity for online virtual learning.
3. Hume City is home to a major aviation sector (Melbourne Airport) that will continue to grow dramatically over the next 10 years. Melbourne Airport will be home to leading edge technology and innovation. New businesses will be attracted to the area and the diffusion of technology developed will be greatly enhanced by the NBN. The continued growth of major projects and residential property developments will continue to create jobs and a larger demand for training and education services to train or re-skill workers. Hume City Council is in an excellent position to facilitate education and training for specific workers through its learning facilities.
4. A great deal of research and innovation is undertaken by businesses in Hume, not only in the aviation industry but also in the engineering and manufacturing sectors. Hume is home to a large number of cutting edge businesses. The NBN will allow businesses, council and its partners the opportunity to greatly increase their research capabilities, distribute intellectual property for commercial gain and develop new products and services in a growing and emerging economy.
5. The NBN will enable the more efficient delivery of essential services and programs, and will increase access and significantly reduce inequity of access to vital services. It will also deliver more cost effective access to broadband, which is beyond the means of many local residents and small to medium business owners. In 2006 Hume had a lower proportion of households with internet access; 57.5% of households, compared to 61.0% for the Melbourne Statistical Division (*ABS 2006 Census of Population and Housing*).
6. To ensure meaningful take up, Hume City Council will provide support through:
 - coordination of Hume Broadband Initiative Project
 - training for residents on the internet and computer use
 - connecting users to other service providers within the community
 - assisting with volunteering, sharing of knowledge and information
 - recruitment and management of administration and support staff for project coordination.

Marea Ekladios

Acting Manager Learning Communities

Moreland City Council

In August 2011, the Prime Minister launched the NBN in Brunswick, the third mainland site to be switched on. The Brunswick NBN footprint covers 2689 premises. Residents in more than half of these premises consented to having a connection. And in September 2011, NBN Co announced a series of second release sites across the country, with an extension to the Brunswick site. To progress the successful take-up of the NBN, a range of funding programs have been established. Moreland City Council has participated in a number of Federal and State Government initiatives.

Digital Communities – Brunswick Digital Discovery Hub

Moreland City Council submitted an application for funding under the Digital Communities program to establish the Brunswick Digital Discovery Hub. The Hub will provide residents and visitors with digital literacy training, information and access to the latest technology showcasing the NBN. It will include training facilities, tele-communication pods, an NBN expo area and customer service area to assist the local community to access and appreciate the possibilities of the NBN in their daily lives. With an emphasis on improving communication with family and friends across the globe via video, these pods are anticipated to meet a strong need for Moreland's culturally diverse community.

Digital Enterprise – Brunswick Business Incubator Enterprise Hub

The Brunswick Business Incubator has also recently submitted an application for funding under the Digital Enterprise Program. The Digital Enterprise Program provides a similar function as the Digital Hub, but its target market is the small business community. In partnership with Moreland City Council, the Brunswick Business Incubator developed the program to provide digital literacy training and small business mentoring services within the incubator and at the business premises.

Digital Local Government Program

The Digital Local Government Program aims to improve the delivery of council services to the home. With a focus on housebound or time poor customers, Moreland is exploring video based technology as a platform to enhance face to face customer services into the home in real time. If successful, the pilot could be adopted by other agencies.

Broadband Enabled Innovation Program

Under the direction of its Aged and Disability Services, council has successfully applied for funding available from the Broadband Enabled Innovation Fund. The Ageing Well at Home with Broadband program will deliver home based exercise programs for older adults using Xbox Kinect 360 devices. The program will enable group exercise sessions facilitated by a physiotherapist while enabling social connections. Of international significance, it has attracted a range of key partners including the National Ageing Research Institute, Microsoft and the University of Melbourne (IBES).

Moreland Digital Strategy

Moreland City Council has begun research into the development of a Digital Strategy to advance the delivery of council services and build the digital capacity and accessibility to the community. The strategy will provide a framework to advance council's efforts in delivering on existing and proposed future funding opportunities and programs. It will assist council to identify the key opportunities and the leadership structure that will deliver locally on the potential of the NBN.

Mike McIntosh

Manager Economic Development

Nillumbik Shire Council

The current economic development strategy aims to enhance the wellbeing of our community by encouraging the development of a vibrant and sustainable local economy that is based on our key advantages, including our magnificent environment and the high level of skills and abilities of our residents and business people.

The home-based business sector is very strong throughout the Shire. It is particularly important in rural townships (for example, recovery efforts following the bushfire disaster in 2009 found that 70% of homes in Strathewen accommodated a business). However, in some rural areas, mobile phone coverage and broadband connections are poor or lacking altogether.

This has an adverse impact on the efficiency and profitability of enterprises and may be preventing the formation of certain types of home-based businesses in some rural areas.

Improvements in technology, and in particular broadband services, will increase opportunities for local businesses to develop in the Shire. This can increase local economic activity (including local employment opportunities) and reduce commuting.

Nillumbik Digital Enterprise Initiative – 7 Point Plan

The purpose of this plan is to foster and promote innovative new services and applications that can use the existing and new technologies and networks, including:

- research to build local evidence base and identify opportunities for business
- develop Nillumbik Digital Enterprise Position Statement
- support/ advocate for provision of digital services within the region
- provide ICT training and mentoring to small to medium enterprises
- support business continuity /disaster recovery
- support emerging/new industries
- seek funding for specific projects such as the Smart Farms Digital Hub concept.

Nillumbik Shire Council, jointly with the recently formed Nillumbik Rural Business Network, is investigating the Smart Farms concept with a view to establishing a regional sustainable agriculture centre for online research-led collaboration (subject to external funding).

This concept addresses several strategic priorities: stimulating regional innovation in agriculture; introducing innovative land use management practices in the Green Wedge; stimulating regional economic development following the devastating fires; and community capacity building through support to farmers and landholders, both locally and in the north-eastern region.

The overall aims are:

- to promote and increase awareness of online resources
- to improve collaboration between the sector and regional research/educational institutions
- to increase agricultural sector capability to utilise technology
- to improve uptake of technology to increase productivity and sustainability.

Darko Popovski

Business Development & Tourism

Appendix 4: Northern Melbourne RDA Committee: Business ICT Benchmarking Project

The Northern Melbourne RDA (NMRDA) committee is supporting the NBN rollout by preparing to run a large survey of small to medium businesses across the region that measures individual businesses current uptake and utilization of ICT. The survey will map demand based on the broadband needs of the organization to be able to compete in the global marketplace. By assessing current broadband utilization, it will be possible to better leverage broadband and develop e-solutions.

The survey will measure current broadband utilization and identify barriers and drivers to increased future usage of e-solutions. The results will be translated into industry sector scorecards, that compare individual businesses with its sector and provides the best ICT options for individual businesses that link to superior business performance based on a researched evidence base. By providing businesses with benchmarking data against other businesses from their industry they can readily identify utilization gaps and this will become a significant motivator for driving e-solutions usage.

It is planned to survey businesses with the objective of receiving up to 6,000 completed surveys which represents approximately 10% of businesses in northern Melbourne.

The results will be aggregated and analysed for regional policy development and also designing specific programs to meet needs coming out of the survey and data analysis. Leveraging increased broadband utilization and e-solutions will contribute significantly to increased regional productivity, innovation and job creation. By maximizing the productivity benefits of current broadband capacity, these regional businesses will be ideally placed to generate another wave of productivity benefits when the NBN rollout is introduced across the region.

The project will provide significant regional and national economic benefit by identifying barriers to ICT take-up by local businesses and acting as a catalyst to these businesses to increase ICT uptake, improve business productivity and generate innovation.

This pilot will be a demonstration project for other regions as no other region has previously undertaken this approach in Australia. The full benefits of the NBN rollout will only be achieved when businesses are aware of, adopt and utilize the full benefits of broadband and e-solutions. This project will identify gaps in the current utilization of ICT by regional businesses and identify the opportunities to leverage increased productivity through increased utilization of e-solutions. This will directly and immediately benefit businesses across the region including those that already have high speed broadband within the NBN trial sites.

NMRDA strongly supports the fast tracking of the NBN throughout Melbourne's North. This survey project will ensure that regional businesses are well prepared to take advantage of the full benefits of NBN high speed broadband and contribute significantly to increased regional and national productivity and innovation.

©Melbourne's Northern Economic Wedge trading as NORTH Link

Commercial in confidence: not for distribution without the express permission of the authors
(contact m.butera@latrobe.edu.au)