



## NEW ZEALAND

## CHRISTCHURCH

Size of the country	271,000 km <sup>2</sup>
Population	3,8M
Population density	14 inhab/km <sup>2</sup>
Population growth rate (1993 – 1999)	1,2%
Part of urban population	85 %
Life expectancy at birth	77
Infant mortality (per 1000 live birth)	5
Access to improved water sources (% of population)	87
Official languages	English, Maori
Religions	Anglican: 22%, Presbyterian: 16%, Catholic: 15 %, other Christian: 6 %.
Gross domestic product	53 billion USD
Gdp per capita	13 780 USD / capita
Inflation	Inflation
Gdp growth rate	4,2 %
Gdp repartition in different sectors	Agriculture: 9 %, Industry: 19%, mines: 2%, services: 65%.
Unemployment rate	6,3 %
Illiteracy (% of population age 15+)	0
Tourism	1,5 M visitors (1997)
Urban areas inhabitants	Wellington: 331 000 (9,2 % of the total population) Auckland: 26,5 %, Christchurch: 26%

# CENTRAL CITY REVITALIZATION AS A FLAGSHIP FOR A SUSTAINABLE CHRISTCHURCH

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Christchurch, New Zealand is a medium sized city of 350,000 people whose new mayor set a goal for central city revitalization, as a flagship for urban sustainability.<sup>1</sup> As with many cities, over the past few decades the primacy of Christchurch's central city as the economic and social powerhouse of the city has been eroded for numerous reasons. This paper explores the importance of community vision, the challenge of establishing public-private partnerships, and integrating transport and land use interactions to achieve central city revitalization and urban sustainability. Crea-

ting a balanced mix of council leadership, governance and community participation to establish a vision and strategic program for success is presented. This paper outlines the progress and approach taken to date in this project and some of the proposed projects and policies central city revitalization will need to take if it is to be successful. Finally, the paper touches briefly on the need to develop an overall urban development approach including "urban villages" for future city development, which supports central city revitalization.

## Introduction

In 1999, the Mayor of Christchurch made a challenge to the city<sup>2</sup> that revitalizing the central city is a key to the long-term well being of the entire city. The contention is that the economic, social and environmental health of Christchurch depends upon a strong central city "heart" to attract more people, activities, investment and tourism for the city's and the region's future prosperity.

In physical and social terms the central city of Christchurch is the heart of Christchurch as well

as the Canterbury region, and the South Island of New Zealand. Local and international visitors pass through Christchurch at some point in their journeys - in fact most will visit the central city to see what's unique about Christchurch including such features as:

- Cathedral Square (the original settlers city square and church)
- the old University setting converted in the 1980s into a thriving Arts Centre

- the café “ strip ” on Oxford Terrace which now incorporates three city blocks and a strip of cafes and bars alongside the city’s river front
- the unique shops and urban spaces included in the Cashel Street pedestrian mall or
- the Botanic Gardens and scenic Avon River. In fact, it is these unique elements of the central city which make it special, and which will require support and celebration if the “ heart ” and city are to survive in the future. However, like a number of cities overseas the central city is facing the prospect of slowly becoming an undesirable place for central city activities such as residential living, shopping, playing and investing. The issues and recent trends are further addressed below.

The City’s challenge as stated by the Mayor is to improve the quality of life in Christchurch, including the city’s social, environmental and economic sustainability and specifically the contribution, which the central city makes to the city as a whole. Specific objectives for central city revitalisation include making the central city more:

- Culturally vibrant
- Economically strong
- Environmentally sustainable
- Socially active
- Safe

## Development of a Central City Strategy and the Mayoral Forum

The Mayor of Christchurch, Garry Moore, and the City Council raised the revitalisation and economic regeneration of the central city as a key challenge in 1999. To provide broad-based community leadership and input the Mayor convened the Central City Mayoral Forum. The Forum is chaired by the Mayor, and members

include senior politicians, members of the business association, local community leaders from the arts and social services, and central city residents.

The Mayoral Forum’s mandate is to<sup>5</sup> :

- Work in partnership with the City Council and the Christchurch Community to develop a Central City Concept Plan.
- Lead the public consultation and stakeholder input into the development of the Concept Plan.
- The Concept Plan will present a physical vision and strategy for central city revitalisation.
- The Forum will collaborate with the Council on issues relating to the Council’s core initiatives (streetscape, traffic management, etc.); the Concept Plan will also provide direction for future initiatives and general strategies for the Central City Board (a newly created development agency to facilitate joint venture projects).
- The Central City Board will act on behalf of the Council to provide leadership, to act as an initiator or investment catalyst on appropriate projects and to actively market and participate in, through development projects, the revitalisation of the Central City.

The structure of the Forum, City Council and future development agency the Central City Board are outlined in Figure 1.

## The Central City Concept Plan and Strategy

Both the City Council and the Central City Board need a clear sense of direction for the future of the central city. The Central City Concept Plan and Strategy will create a long-term vision, building on existing strengths of the central city and develop a programme and project priority to achieve that vision. It will also build on the kinds of innovative private,

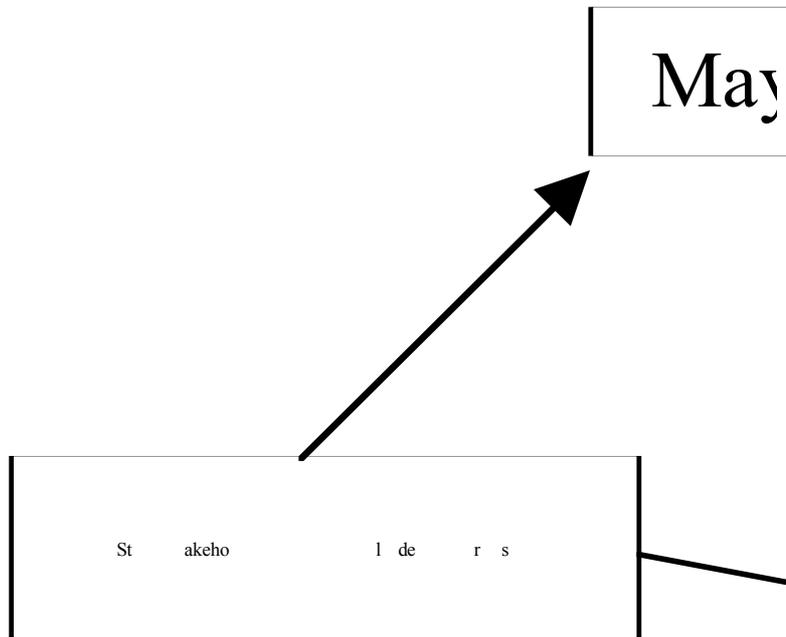


Figure 1: Structural Relationship of the Mayoral Forum, City Council, Concept Plan Development and Central City Board<sup>6</sup>

community and public partnerships that have been key to many success stories in Christchurch and elsewhere (see below).

The Central City Concept Plan and Strategy will connect Council activities and private development opportunities, providing incentives and reducing the barriers to revitalisation. Specifically the Concept Plan will give direction:

- To the City Council on priorities for public projects.
- To the Central City Board on future projects.

It will also create incentives to private landholders and developers for projects, and generally establish vision, direction, and leadership for projects over the next 25 years.

## Recent Trends and Issues

As with many New World western cities, prior to extensive use of the private motor car and associated urban expansion, the central city of Christchurch had been the city's economic, job and cultural centre. However, expansion of the city including significant growth in suburban malls, the shifting of the University in the 1960s to a suburban location, and continued residential expansion to new green field areas has generally resulted in a declining use and economic activity in Christchurch's central city<sup>8</sup>. As a result Christchurch's central city over the past few decades has diminished in its importance in terms of jobs, residential population, and overall commercial turnover. This has led directly to an overabundance of commercial floor space, decreases in the financial viability of many areas, and a general decline in foot-traffic in some areas of the central city. Combined with increases in some social problems (crime, youth "boredom," increases in graffiti, etc.), there are areas of the central city that are viewed as reasonably undesirable for both commercial investment and activity, and residential living (see below)<sup>9</sup>.

Stiff competition from Auckland, Australia and beyond has seen many head offices heading away or being taken over by other companies outside the region. The extensive expansion of local suburban malls has also dramatically changed the kind of retail conditions facing central city businesses with a general shift toward more restaurants/cafes and a shift away from retailing, finance and manufacturing.

Between 1991 and 1996 the proportion of jobs in the central city of the city-wide total declined from 19.0 percent to 16.6 percent<sup>10</sup>. During the same period there was 16 percent growth in the residential population although from a very low base of only 5,670 people<sup>11</sup>.

Some specific issues and trends are identified below.

## Social and Environmental Issues and Trends

- Safety - The central city is not as safe at night as it should be where 61 percent of people feel unsafe after dark in the central city<sup>12</sup>;
- Infill development has caused a number of concerns among residents including lack of privacy, building heights, loss of trees and gardens;
- Traffic growth has increased by about 18 percent between 1991 and 1996, with forecast traffic growth to increase by over 40 percent in the next 20 years with significant increases in congestion, costs of road upgrades and needed improvements in public transport, cycling and pedestrian facilities;
- Noise complaints have increased by 170 percent since 1991;<sup>15</sup>

## Population Issues and Trends

- Central city residential population – since 1991, over 1,000 units were built within the central city (four avenues) leading to a 16 percent increase in the number of central city residents between 1991 and 1996 although from a very small base (whereas Christchurch total population grew by 7 percent between 1991 and 1996);<sup>16</sup>
- Population growth city-wide population growth has slowed from 2-3 percent in the mid-1990s to less than 1 percent in 1999<sup>17</sup> – suggesting that goals to significantly increase the residential population in the central city may require changes in national migration policies;
- Household size continues to decline – suggesting a need for more houses in general and a greater range of housing types (e.g., townhouses and apartment/unit dwellings, mixed use facilities, etc.).<sup>18</sup>

## Business Issues and Trends

- Commercial/retail business investment in new building is significantly higher in

- outlying suburban centres than in the central city (over the past seven years four of the major malls have redeveloped or applied for redevelopment consent);<sup>19</sup>
- Significant commercial/retail floor space in the central city is under-utilised, with ground floor vacancy at about 11 percent with significantly higher vacancy rates implied on 2nd and 3rd floors of older commercial buildings;<sup>20</sup>
- Office space vacancy rates improved from 30.6 percent in 1993 to about 19 percent by 1995 (partially due to significant conversions of previous office space to hotels and to a lesser extent apartments); however office space vacancy has remained static between 1995-2000 at about 19 percent with much higher vacancy rates in the east of south portions of the central city (average 24 percent) compared to lower vacancy rates in the west and north (average 9 percent);<sup>21</sup>
- Central city has one of the largest commercial areas in New Zealand<sup>22</sup> – which provides both an opportunity for improving use of existing commercial areas and a threat with continued shift in commercial trading to suburban premises;
- Central city has the highest concentration of businesses and employment in Christchurch although as a proportion of the total this figure has been declining consistently over the past few decades (business activity accounted for 17 percent of city wide total in 1999);<sup>23</sup>
- The number of new businesses established in the central city decreased by 0.5 percent between 1997 and 1999, whereas city-wide there was a 3.6 percent increase: numbers of central city businesses showed declines in finance/insurance, retail/wholesale trading, and manufacturing with slight increases in restaurants/cafes and business services.

In summary, there are a number of issues facing the central city, including: social issues

like safety, cultural and community well-being and an apparent need to increase its population base particularly with a stated desire for more central city resident; environmental issues like improving winter time air quality<sup>24</sup>, a need to improve public spaces, and

address issues like noise and infill; and economic issues in order to ensure the central city is a better place to invest. Many of these issues are addressed below in the development of specific proposals for improving Christchurch's central city.

## Previous Success Stories, Building Community Vision and Improving Outcomes

### Previous Public/Private Partnerships

In Christchurch, there have been a number of successful public-private partnership in the central city over the past few decades which have resulted in a series of successful redevelopments most of which have occurred in areas west of the city's main street<sup>25</sup>. Generally these "partnerships" have involved the City Council investing in improvements to public space areas, combined with private development investments in adjoining private land areas. For example:

- In 1977 Cashel Street Pedestrian Shopping Mall was created by closing off the street and building what at that time was the largest car-parking building in the central city. Over-time redevelopment in private land uses has resulted in what is now the central city's premier retail shopping area with the highest retail floor space rents and highest foot traffic of anywhere in Christchurch.
- In 1987 the Council closed off one street in a five lane intersection, leased the previous street space for a five star hotel (the Park Royal) and developed the remaining area into one of the premier central city parks, Victoria Park. The area has become one of the more successful and vibrant tourist

areas, and significantly added to the city's green space in the western area of the central city.

- In the early 1980s, the previous University campus, now known as the Arts Centre, redeveloped and refurbished historic buildings to cater for an arts, crafts, and cultural centre for the city. In 1993 the adjoining street, Worcester Boulevard was upgraded, traffic calmed, and a small heritage tram loop was built. Over the past 15 years, this combination of private and public investment resulted in a rejuvenation of neighbouring residential areas, significant increases in both local and international tourists, and a thriving weekend arts market.
- In 1998 the owner of an entire block of shops which fronts the Avon River approached the Council seeking traffic calming and footpath widening of what was then a two lane road with car-parks on both sides of the street. The council narrowed the road to one lane, took out the car parking, and widened the footpath. At the same time the developer redeveloped all of the stores as restaurants, cafes and bars. The block quickly became the premier restaurant and outdoor eating area in Christchurch with extensions recently completed for the next two blocks.

It is these success stories between public and private enterprise in the " west " which the Council should attempt to stimulate in the " east " area of the central city. Some of the key determinants of these successes include: provision of an excellent mix of quality public spaces, excellent transport/traffic access, appropriate traffic calming and improvements to pedestrian areas, upgrading historic buildings, and generally reasonably extensive public investment.

## Development of the Central City Strategy and Concept Plan

The policies and suggested strategies developed in this paper are about creating future opportunities for the central city of Christchurch. In early 2000, the Mayoral Forum and Council embarked on a wide public consultation exercise in order to identify key issues of concern from the public and stakeholders, and to develop key policies and projects which would over time lead to revitalizing the central city. These are briefly outlined below.

### *General Steps and Strategic Policy Issues Considered*

Overall the process for developing the central city concept plan and strategy involves: 1) identifying key issues, visions and potential improvements through both public and selected stakeholder input, 2) identifying key priority projects and needed policy changes, and 3) developing key recommendations and an achievable action plan on needed changes.

A broad list of policy issues under consideration includes changes to: transport and traffic management including traffic calming and tree planting; parking policies to increase shopping " access " but which decrease commuter congestion; zoning issues which address concerns about infill and improve use of mixed use zoning; heritage building assistance and development of heritage area precincts; incentives to increase residential and

commercial developments; improving the natural environments and public spaces with particular emphasis on creating more spaces in the eastern side of the city.<sup>26</sup>

### *Public Consultation and Feedback*

A discussion document entitled " Focus on the Heart " released in October 2000 was the first public consultation document in a process of developing a Central City Strategy and Concept Plan.<sup>27</sup> The document identified a number of general goals including developing a vision for the " heart of the city " which is environmentally, economically and socially sustainable; and generally making the central city " a vibrant place for people to live, work, socialise, play and invest. "

The document suggests that revitalizing the central city will involve:

- Environmental and design excellence;
- Retaining historic buildings and other heritage features;
- Stimulating and promoting development and investment;
- Creating partnerships and joint venture developments;
- Selling the central city as a destination for residents, tourists, visitors, businesses, and migrants.

The public consultation exercise sought the following outcomes:

- Community " buy-in " to the process and feedback on desired outcomes;
- Business community participation and partnership on future projects;
- Identification of strategies and programme priority projects for the City Council over the next one to five years.

The Discussion Document received over 700 submissions and over 40 public meetings were held during a two-month public consultation period. Generally feedback suggested that many people would like to see a more active and interesting central city area with more people living and playing there, more activities and cultural events, a unique range of shop-

ping and commercial opportunities, more people oriented street environments with improved accessibility with fewer cars, and a safer atmosphere at night. At the time of writing this paper, preliminary analysis of 370 submissions suggested the following key issues:<sup>29</sup>

- general support for the central city revitalisation project as a high priority for the Council;
- support for a focus to the eastern areas of the central city, those areas with greater "trouble" in terms of commercial rent difficulties, crime/safety, etc.;
- to make the central city more appealing for residential living a series of issues will need to be addressed including improving the natural environment, safety and security, transport and access, and cleanliness and recreation to name a few;
- issues of greatest importance suggest that transport and parking, improving general business and retailing, heritage retention and the ideas for a river promenade were identified as important;
- in terms of green and more "liveable" streets there was quite strong support with preliminary feedback suggesting that the main shopping streets (Colombo St and Manchester Street) and the main arterial roads into and out of the city (the "One-Way" streets) deserve priority attention;
- in terms of making the central city more accessible there were mixed views on whether the central city is accessible currently with specific suggestions to create more/better and free parking, improving pedestrian crossing points and wider footpaths, and significant support for improving public transport (shuttle, tram), and fewer cars;
- the central city is not perceived to be as safe as it should be with a series of issues which will need to be addressed including reducing the impacts of "gangs/skinheads," improving police presence, providing better lighting standards, and reducing crime and "drive-by hoons."

The next section explores in some detail proposed projects as a result of this public consultation.

## Proposed Projects and Policy Changes<sup>30</sup>

### “ Precincts ” of the Central City

The central city is made up of actual and potential “ precincts ” or communities of people – from people who live in the central city, to business and commercial communities, to areas catering for cultural, education and tourist activities (see Figure 2). The term precinct in this sense is used quite broadly...essentially capturing the communities who live, work, play, shop and socialize in different areas in the central city.

The concept of identifying precincts is intended to create more recognizable community and diversity within the central city, celebrating the success stories and community visions, and to lead toward developing specific themes or projects within certain areas, which require high priority attention. There are various improvements under consideration including:

- street furniture specific/special to each area;
- developing an advocate or association for each area to promote and organize each precinct;
- providing incentives for certain types of residential and commercial development preferred by each precinct;
- creating specific infill and design guidelines for the residential areas, which support or create identifiable precinct differences.

### Residential and Mixed Use Housing

To create and support a lively and active area, it will be critical to have more people living in central city. Slowly, more and more people are choosing to live in the central city with over 1,000 units built since 1991, including increases in townhouses and apartments. However, there are significant opportunities for future residential development. For

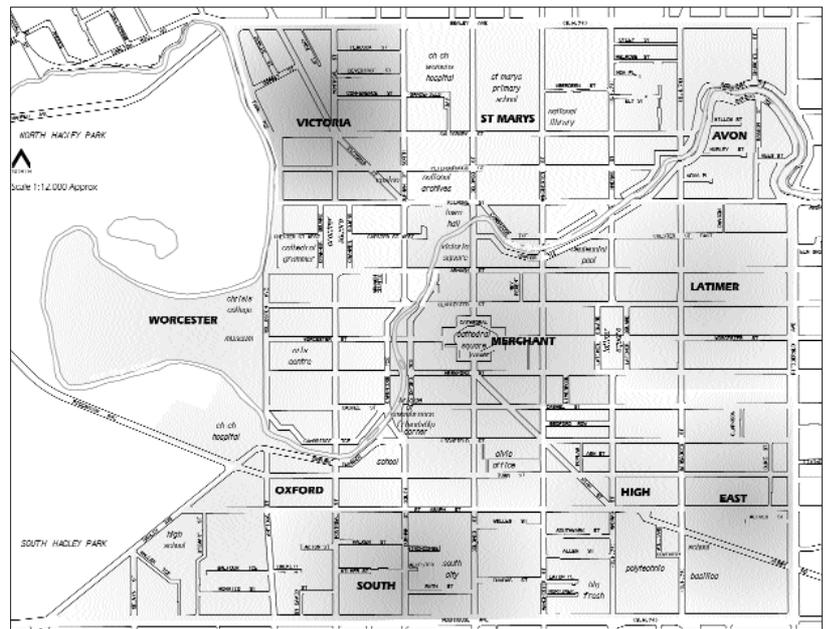


Figure 2: Precincts of the Central City<sup>31</sup>

example, although common in other cities, Christchurch has relatively limited “ mixed use ” development using ground floor commercial and residential living areas above. In addition, there are large numbers of under-utilised commercial buildings in the central city – many of which could be used for inner city living (and/or mixed use). Incentives are currently being explored for:

- converting existing 2nd and 3rd floor commercial spaces to residential units;
- increasing the residential living zone density in certain areas (including converting some of the existing industrial zone areas to mixed use zoning);
- addressing building act and earthquake strengthening requirements to provide financial assistance for converting older buildings, particularly heritage buildings into residential;

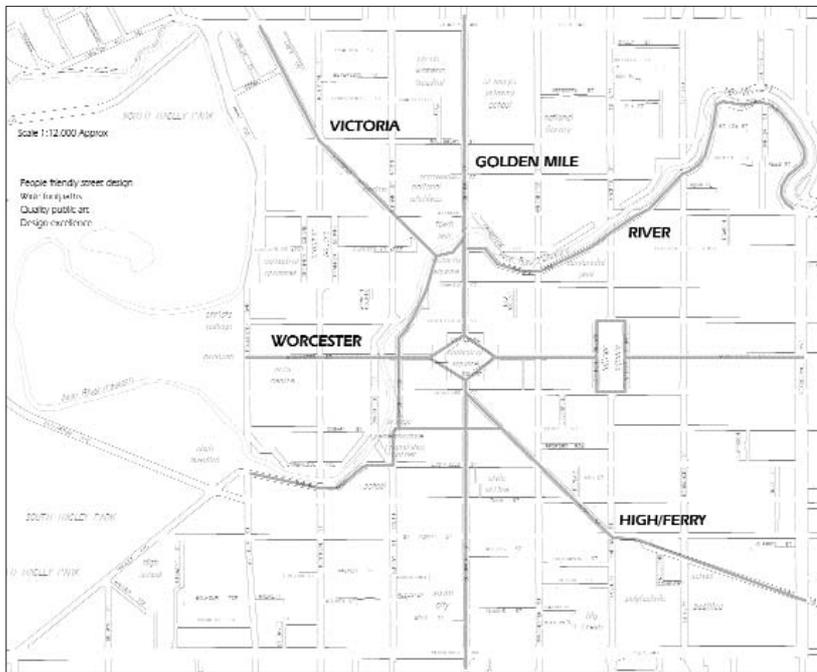


Figure 3: Improving People Linkages

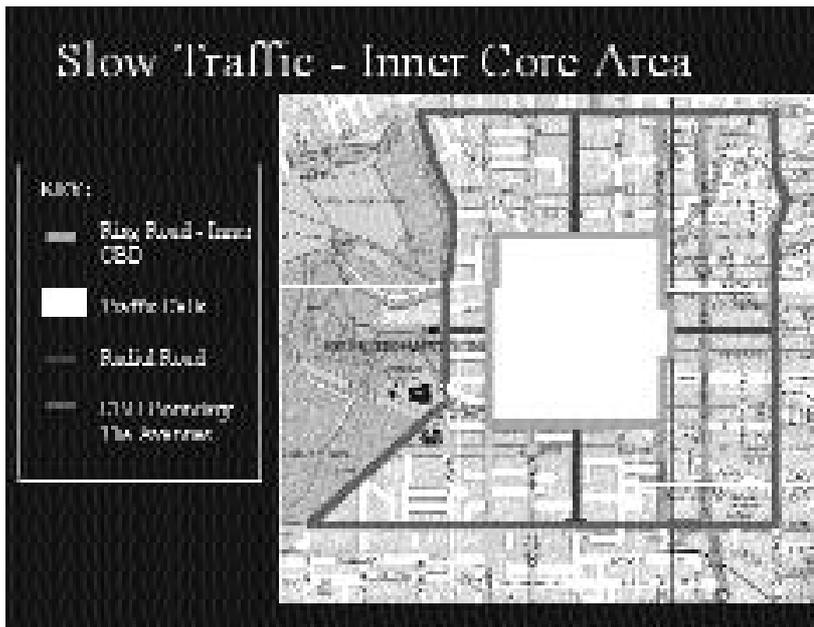


Figure 4: Proposed Slow Mode Core Area for the Central City

- addressing “ problems ” associated with increasing residential populations in the central city including noise requirements (building insulation standards, hours of operation, etc.), and infill guidelines, and more public parks; and
- improving safety through physical programs (e.g. improved street lighting and design) and social programs (e.g., youth crime, increasing police presence, etc.);
- addressing the need for affordable housing in the future especially in areas in the east where currently low-income residents reside.

### Transport and People “ Linkages ”

Improving transport access and generally focusing on moving people not just vehicles is a key to successful central city revitalization. Transport strategies and policies proposed include continuing to improve the pedestrian amenity and linkages, traffic calming certain areas, improving parking policies as a tool for traffic management and improving shopping, enhancing cycle paths both on-street and off-street, and improving public transport services, routes and priority.

Many cities, including Christchurch, show that nice places for people to walk generate more foot traffic and provide an incentive for private redevelopment opportunities. In general, the streetscape of Christchurch as in most New World western cities makes up a huge proportion of the public space (generally 25-40 percent) , and provides tremendous opportunity for improving both people linkages and public amenity. Specific streets identified for pedestrian improvements are shown in Figure 3, including wider footpaths, better street lighting, more trees, more public art, improved points of crossing, and general traffic calming.

One of the key themes under consideration is giving greater priority to slow modes (pedestrians and cyclists) in the core area of the central city, essentially using traffic manage-

ment and traffic calming techniques to ensure that once in this designated zone vehicles give way to people (see Figure 4).

Improving public transport in the central city is another proposed change. Currently, Christchurch has a free electric shuttle bus, introduced in December 1998. In its first year of operation the three shuttles in operation carried over one million people operating on approximately a 10-minute frequency. The proposal is now to significantly extend the route to better connect to off-street parking buildings and improving coverage throughout the core business area (see Figure 5), with later extensions into the residential areas in the north, west and east of the central core area (not shown).

This "package" of public transport improvements also proposes to make off-street parking buildings free for up to two hours for shoppers, while increasing commuter parking charges to maintain an overall financially neutral parking revenue and to reduce peak time traffic congestion.

## River Promenade

The Avon River is one of the few very unique natural features in the central city. Along with the Botanic Gardens, the river provides some of the nicest public spaces in the central city. Over the past few years the council has upgraded some public areas along the river, but not developed a continuous "promenade."

This proposed project would create a river promenade and provide space for strolling, a safe space for young kids and families to walk, cycle, roller blade, etc, and distinct attractions and sites along the river to visit, socialise, eat and generally spend time. The general proposal is shown in Figure 6.

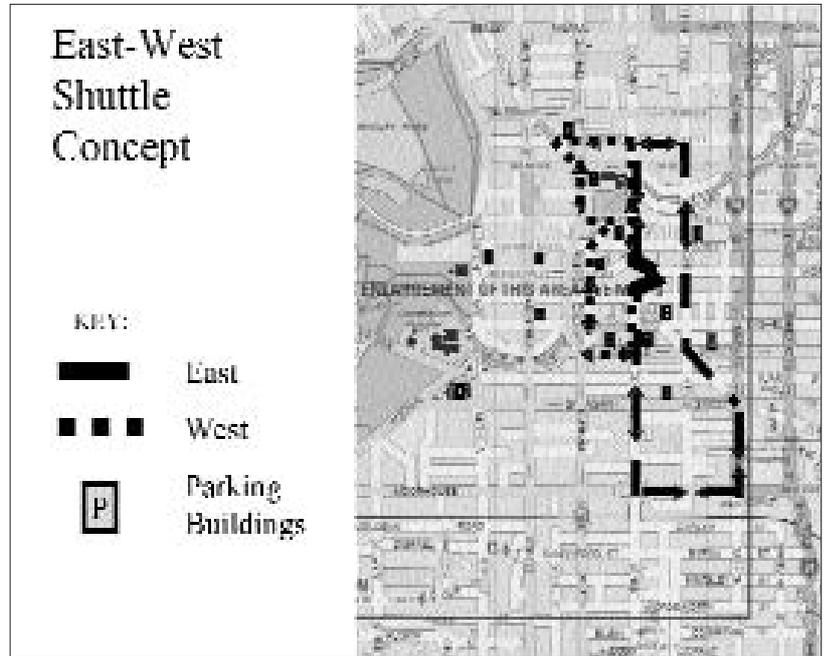


Figure 5: Free Electric Shuttle and Free Two-Hour Shopper Parking

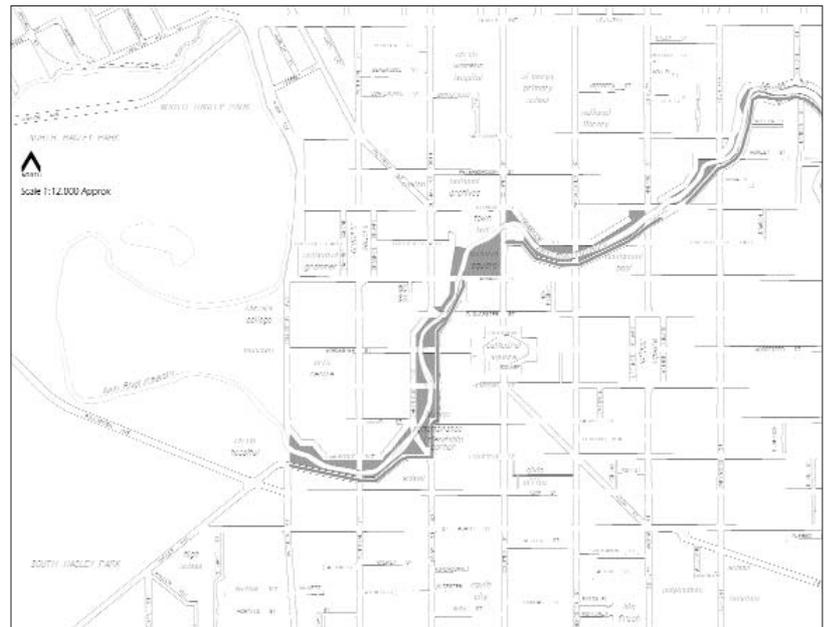


Figure 6: Proposed River Promenade<sup>37</sup>

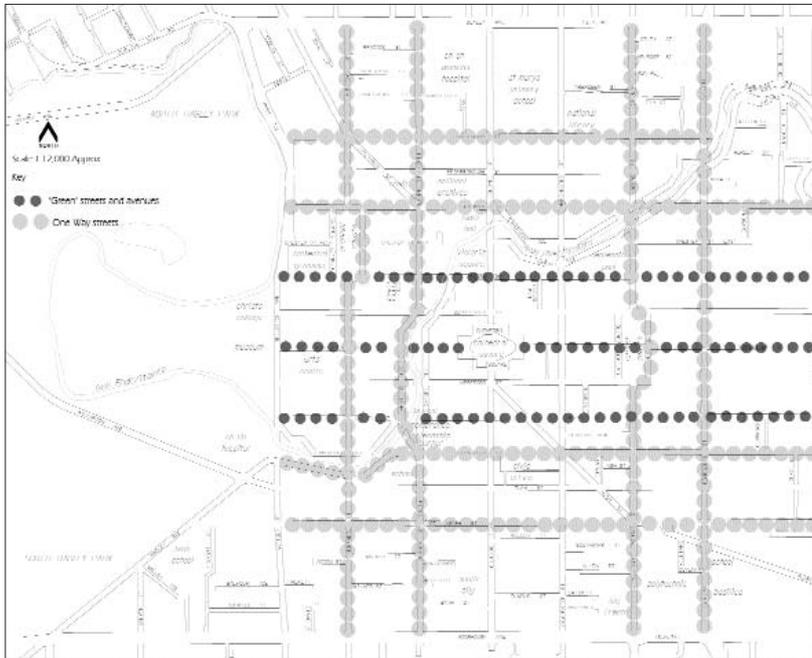


Figure 7: Creating Green “Liveable” Streets



Figure 8: Creating a Heritage Priority Area or Precinct

## Creating “Green” Liveable Avenues and Streets

Public streets make up a huge proportion of public space, generally 25-40 percent.<sup>38</sup> Many cities have successfully utilized reasonably wide streets to reintroduce nature and green areas into the urban areas by narrowing the carriageway and planting trees. In addition, reducing the impact of traffic, particularly in retail streets and residential areas, has become a high priority to create more “liveable” streets. The combination of tree planting and traffic calming is proposed to provide:

- more green and natural qualities in urban areas;
- better quality public space;
- an opportunity for slowing traffic particularly in high foot traffic retail areas and residential neighbourhoods; and
- a visual connection to other areas (and if extended beyond the central city to other suburbs).

Many of the central city streets, especially in some of the residential areas in the central city, are reasonably wide and could allow for significant tree planting improvements. Trees can also provide an excellent connection between areas in the central city, such as between the central business district and residential neighbourhoods as well as connecting to the larger open space parks such as the Botanic Gardens to the west. These ideas are not new, and many cities including Singapore, Paris and Portland use extensive tree planting to improve both urban amenity and natural connection through what is otherwise generally a “hard” urban space. It is proposed that over the next 5-10 years certain priority central city streets will be significantly tree planted and traffic calmed to improve their amenity.

## A Heritage Building Precinct

Christchurch’s central city has the highest concentration of commercial, civic and public heritage and character buildings in the entire

city (of a total of 597 heritage listed buildings citywide, 498 are included within the central city area). It is these buildings which contribute to making the central city's unique character and give it a special sense of " place. "

The Council to date has developed a program to assist heritage-building owners with earthquake strengthening and façade retention for specific listed buildings. The proposals contained in the discussion document identify the need to address heritage retention for an entire area or group of buildings, not simply individual buildings. This proposal shown in Figure 8 identifies an entire street block (or multiple blocks) on the east side of the city be developed as a priority program for upgrading not individual buildings in isolation but entire blocks (denoted by the heavy dotted line). The program should address not only building façade retention, but also street furniture upgrades, and assistance with increasing commercial use of the buildings ideally for residential mixed use conversions from what are now generally under-utilized (or in some cases non-utilized) buildings.

### *Other General Proposed Changes*

Finally, not covered in detail in the above proposals, but considered critical to success of the revitalization strategy:

- Significant increases in public art are needed. A financial funding policy should be pursued which requires a 1-2 percent expenditure on any major public capital work project be devoted to public art. For example, if a street is to be upgraded or other major capital works completed, a small percentage of the total capital work for the project should be spent on public art.
- There is a significant need for more open public green space in the eastern part of the central city. The Council should pursue the purchase of one or two large open space areas over the next 2-5 years, possibly as part of a major block redevelopment, to improve the amenity and re-balance the lack of open space in the eastern area;
- Marketing the central city as an international lifestyle destination for future migrants and businesses to increase the overall population and financial investment base of Christchurch.

## Urban Development Strategies with Support Central City Revitalization

There is a growing interest in cities worldwide to pursue sustainable urban development, to improve environmental, social and economic performance for this generation and generations to come. Christchurch is no exception to this rule and has recently embarked on a program to pursue sustainable urban development, with the revitalization of the central city as a " flagship " to a sustainable Christchurch.

Imperative in achieving sustainable urban development is ensuring that land uses and transport plans and policies are integrated. This is true within the entire urban area, as well as the sub-centers of the city. How a city physically develops directly affects its economic, social and environmental " sustainable performance. "

Improving self-sufficiency of a city and its individual " urban villages, " including the central

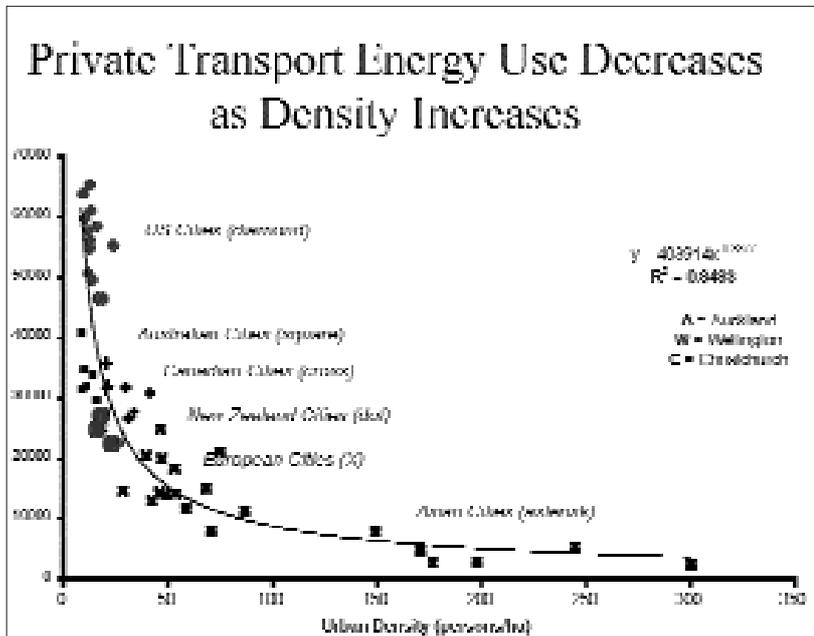


Figure 9: Private Passenger Transport Energy Use and Urban Density (1991)<sup>47</sup>

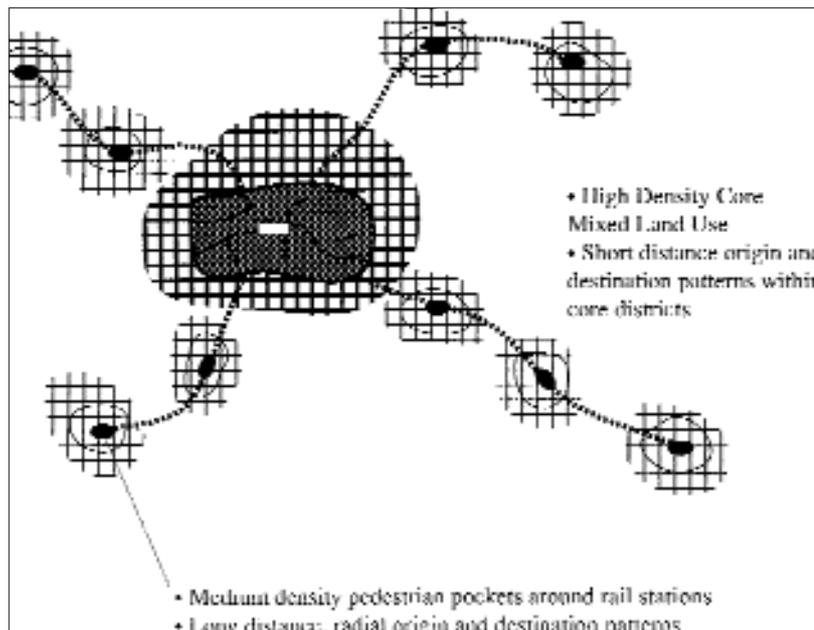


Figure 10: Integrated Transport and Land Use - Nodes and Corridors <sup>49</sup>

city, within the overall urban fabric is critical toward achieving more sustainable outcomes, particularly with respect to the effects of urban development. Most cities, including Christchurch, are essentially made up of a mix of land uses, including urban villages (or sub-centers), suburban residential areas and often separated industrial/commercial areas. One key to reducing the effects of urban development is to ensure that these urban villages are well connected to each other, and provide as much of a self-sufficient activity and attraction mix as possible. The integration of land use and transport is critical at the local "village" level as well as at the urban/regional level.

The focus of this paper (and project) raises the question: is a healthy central city important to the overall city's sustainable development? Essentially there appear to be two directions for Christchurch's urban development pattern: a healthy central city, well linked to recognizable community urban villages – or a sprawling city with a dying central city heart.

There is a very strong link between urban form and transport outcomes, and vice versa between transport provision and land use. Generally, data show that as cities spread out and become less concentrated (either in total area or in specific locations), there are related increases in travel, associated increases in environmental effects and increasing costs of transport. A number of studies have shown direct relationships between urban form and transport, and associated environmental and economic "costs." For example, data were collected on New Zealand cities and compared to data from 46 other international cities. The link, integration and relationship between land use and transport is critical, and is shown below in Figure 9 in terms of transport energy use.

As an example of the relationship between transport and land use, Figure 9 shows a very strong statistical correlation between urban density and transport energy use – that is as a city increases in density it uses less transport energy. This relationship was first identified by Newman and Kenworthy and the data for New Zealand’s three main cities “ fits ” nicely into this relationship. These relationships also appear to hold true within a city.<sup>26</sup>

*Sustainable Urban Development – A Nodes and Corridors Approach*

A “ nodes and corridors ” approach to urban development, shown in Figure 10, suggests that an urban development pattern which links nodes/villages of the city, can reduce the need for travel within each node or village by good design and increases each village’s self-sufficiency in terms of activities and attractions. In general, if a city’s daily activities are brought closer together, into a series of nodes along defined corridors of activities, like “ beads on a necklace, ” there will be less need for travel in general as well as more use of

non-auto modes. And if transport policies and infrastructure development support this nodes and corridors approach then the full benefit of integration can occur. Improved public transport services, the physical design of the nodes (or sub-centres), and the road network can all be supportive of increasing use of public transport, and the inherently shorter trips will then be more easily made by foot or on bicycle. Only with such an integrated and co-ordinated package can alternative modes become attractive options to the convenience of private cars and classic consequences of “ auto dependence. ”

Finally, two policy prescriptions for urban development in Christchurch and elsewhere emerge, to achieve an integrated transport and land use approach, including the design elements included in an urban village concept cities need to :

- facilitate increasing population and commercial activity densities in central cities and select nodes along corridors; and
- pursue an urban area growth management strategy, which supports this integrated approach.

## Conclusion

A challenge has been made by the Mayor of Christchurch to revitalize the central city. Currently the central city enjoys some successes, but also shows signs of teetering toward a demise with general declines in commercial investment, increasing concerns about safety, and increases in vacancy rates in commercial and heritage buildings. This paper outlines a few proposed projects and policy changes intended to improve the physical amenity of the central city, provide incentives for future developments, and generally increase the use and activity of the central city. Most of the "successful" areas of the central city of Christchurch are west of the main shopping street, where a mix of public-private partnerships have been pursued resulting in a lively mix of activities, excellent public spaces, and redevelopment in commercial and residential areas occurring over the past few decades. It is many of those same qualities and attributes which residents appreciate in the "west" which can and should be developed in the "east." The proposed changes included in this paper focus on specific public projects and policy changes, and provide a number of possible opportunities for public-private partnerships.

Key recommendations include:

- Creating incentives for increasing the residential living population including conversions of under-utilized commercial and heritage buildings for residential purposes;
- Creating a slow mode core in the central commercial area where traffic is calmed and pedestrians and cyclists are given priority, including general pedestrian improvements to key streets;
- Extending the free electric shuttle, with free 2-hour parking and increases in commuter parking charges to improve use of public transport generally
- Significant streetscape improvements in tree planting and traffic calming;
- Creating a river promenade by developing a continuous footpath and identifying development sites for future activities along the Avon River;
- Creating a heritage precinct area for heritage building redevelopment, including appropriate street upgrades and street furniture, and providing incentives for conversions of under-utilized commercial spaces into residential units;
- Marketing the central city as an international lifestyle destination for future migrants and businesses;
- Introducing a funding policy to include public art as part of all major capital expenditure works;
- Purchase and provision of one or two large public green spaces in the eastern area of the central city; and
- Recognizing that urban development city-wide needs to support a more integrated approach and that a healthy central city supports a more robust and sustainable Christchurch.

## Notes:

1. Ideas and statements made in this paper do not represent City Council policy or commitments and are simply the views expressed by the author.
2. The central city is defined by the area within the four avenues: Bealey, Fitzgerald, Moorhouse and Rolleston.
3. Refer to CCC 2000a. Discussion document on Central City revitalisation, " Focus on the Heart, " Christchurch City Council, October.
4. CCC 2000a.
5. Mayoral Forum, Terms of Reference, (Christchurch: Christchurch City Council, Strategy and Resources Committee, August 2000).
6. Mayoral Forum 2000.
7. See Newman, P. and Kenworthy, J., *Cities and Automobile Dependence* (Aldershot: Gower Technical, 1989); *Sustainability and Cities: Overcoming Automobile Dependence* (Washington DC: Island Press, 1998) and Bachels, M., Newman, P., and Kenworthy J., " Indicators of Urban Transport Efficiency in New Zealand's Main Cities, " a study prepared for a number of New Zealand government bodies (Perth: Institute for Science and Technology Policy, Murdoch University, March 1999); Bachels, M., " Development of Sustainable Urban Transport Energy Policy - Transport and Land Use Planning Implications, " unpublished doctoral dissertation, Christchurch: University of Canterbury, March 1999).
8. CCC 1995, Proposed Christchurch City Council Plan, Volumes I, II, and III, Christchurch City Council (note that the city plan is still to be finally adopted).
9. CCC 2000a
10. Bachels, M., Newman, P., and Kenworthy J., " Indicators of Urban Transport Efficiency. "
11. CCC 1999b, Christchurch Central City Background Information, Christchurch City Council, Environmental Policy and Planning Unit, Technical Report 99/3, July.
12. CCC 1999a, Christchurch City Council Annual Residents Survey.
13. CCC 1995
- 14; Bachels, M., Newman, P., and Kenworthy J., " Indicators of Urban Transport Efficiency. "
15. CCC 2000b. Christchurch City Update 2000, Environmental Policy and Planning Unit, Christchurch City Council, April.
16. CCC 2000b
17. CCC 2000b
18. CCC 1995
19. CCC 1999b
20. CCC 2000b
21. CCC 2000b
22. 1.6 million square meters, greater than the combined area of all the city's major suburban shopping centers. CCC 2000b
23. CCC 2000b
24. Christchurch has a significant winter time air pollution problem due to high use of wood and coal burners for domestic heating combined with poor residential insulation standards.
25. Public investment " west " of the main street, Colombo Street is estimated at well over \$100 (NZ) million dollars (equivalent to approx. \$40 million US) over a 25-year period, compared to less than \$10 (NZ) million invested in eastern parts of town (equivalent to approx. \$4 million US) (based on discussions with Bill Williamson, previous Town Planner Christchurch City Council, and Sir Miles Warren, architect, personal communication).
26. The east part of the city has only one significant block-sized park, whereas the west part of the city has two very unique and large natural features which the east lacks – the city's largest park (Hagley Park and the Botanic Gardens) and the Avon River.
27. CCC 2000a
28. CCC 2000a
29. CCC 2000c
30. The next few pages explore some proposed projects to improve the central city of Christchurch. However, it should be noted that these ideas and proposed projects are simply proposals at this stage, since this is early in the development of the strategy and concept plan (these do not yet represent Council policy or commitments and are simply the views expressed by the author).
31. CCC 2000a

32. Resulting in a 16 percent increase in the residential population from a very low base of just of 5500 people.
33. See Newman and Kenworthy, *Sustainability and Cities*; Katz, P., *The New Urbanism: Toward an Architecture of Community* (New York: McGraw-Hill, 1994); "Liveable Neighbourhoods: Community Design Code, Edition 1" (Western Australia Government Sustainable Cities Initiative, 1997); Calthorpe, P., *The Next American Metropolis* (Princeton: Princeton Arch. Press, 1993); Goodwin, P., "Solving Congestion." Inaugural Lecture for the Professorship of Transport Policy, University College London, 23rd October 1997; Holtzclaw, J., *Residential Patterns and Transit, Auto Dependence and Costs* (San Francisco: Natural Resources Defense Council, 1994); Bachels, M., "Development of Sustainable urban transport energy policy."
34. Where the term traffic calming refers to slowing traffic generally and giving greater priority to pedestrians and cyclists.
35. See Bachels, "Development of Sustainable urban transport energy policy"; Newman and Kenworthy, *Cities and Automobile Dependence*.
36. CCC 2000a
37. CCC 2000a
38. See Bachels, "Development of Sustainable urban transport energy policy" and Newman and Kenworthy *Cities and Automobile Dependence*.
39. A typical street in Christchurch is 20 meters wide building front to building front with two lanes of traffic (4 meters each), two lanes of parking (3.5 meters each) and a footpath on each side (2.5 meters each).
40. CCC 2000a
41. CCC 2000a
42. CCC 2000a
43. For example see Newman and Kenworthy, *Cities and Automobile Dependence and Sustainability and Cities*; Holtzclaw, *Residential Patterns and Transit*; Bachels, Newman, and Kenworthy, "Indicators of Urban Transport Efficiency."
44. Bachels, Newman, and Kenworthy, "Indicators of Urban Transport Efficiency."
45. The correlation between private passenger transport energy use and urban density is very strong, with an  $r^2$  or variance component of 0.8483 (an  $r$  value or correlation of 0.92), signifying that 85 percent of urban private passenger transport energy use is "explainable" or related to the population density of the city.
46. See Bachels, Newman, and Kenworthy, "Indicators of Urban Transport Efficiency."
47. Bachels, Newman, and Kenworthy, "Indicators of Urban Transport Efficiency."
48. See Newman and Kenworthy, *Sustainability and Cities*.
49. From Bachels, Newman, and Kenworthy, "Indicators of Urban Transport Efficiency". Note the figure is indicative only and does not represent any particular city or geographic region. Specific city or urban areas would need to identify potential nodes and corridors, including an assessment of transport network requirements, in order to develop such an approach.
50. See Katz, *The New Urbanism* and Bachels, Newman, and Kenworthy, "Indicators of Urban Transport Efficiency."
51. Feedback on the Discussion Document (CCC 2000a) showed that based upon 370 submissions analyzed over 80 percent believe that central city revitalization should focus on the "East" side of the central city (CCC 2000c).