

## 2. CENTRAL CITY TRANSPORT CONCEPT PLAN

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The purpose of this report is to report back to the Committee the outcomes of the Central City Transport Working Party (CCTWP) work to date, and to seek adoption for consultation purposes of a concept plan for the central city transport system recommended by the Central City Transport Working Party.

### 1. OVERVIEW

During 2002 the Council proposed plans for changing Tuam Street from a two-way street to one-way eastbound and Lichfield Street from one-way eastbound to two-way. The proposal was one of a number of transport projects signalled in the document *“Revitalising the Heart of Our City, Development of a Central City Strategy - Stage 1”*, February 2001. The public consultation process resulted in many submissions against all or parts of the proposal. At its meeting on the 21st November 2002 the Council resolved to establish a working party comprising councillors, business and user group representatives to oversee a study of traffic issues generally between Hereford Street, Moorhouse Avenue, Fitzgerald Avenue and Hagley Park, and to address transport planning within the four avenues.

The CCTWP was established in early 2003 and held its first meeting in April 2003. The stated goal for the CCTWP is *“That traffic management in the central city assists the city to work for all people and businesses with an appropriate balance between all transportation modes.”*

Key objectives sought by the working party were:

- To enhance or maintain an efficient traffic system that provides good and easily understood access for all people and modes.
- To provide a level of travel time reliability for public transport in the central city sufficient to achieve through routing of buses and cope with the expected growth in bus users.
- To accommodate the needs and safety of pedestrians and cyclists in the central city.

#### 1.1 Process

Since inception, the CCTWP has met regularly (approx. 12-15 meetings to date), and undertaken the following activities:

- Been briefed on all existing strategic transport/policy documents and other information relating to the Central City (eg *“Revitalising the Heart of Our City, Development of a Central City Strategy - Stage 1”*, February 2001, Cycling Strategy, Parking Strategy, Residents Surveys, etc), and current issues relating to these (eg congestion points, bus routeing/reliability).
- Identified key desires from each stakeholder, related to transport and activities in the Central City.
- Developed and reviewed options for meeting the needs of each travel mode.
- Determined assessment criteria for evaluating options.
- Provided feedback on broad combined proposals/options developed by staff.
- Received information regarding assessment/evaluation of various options (eg traffic models, focus groups, expert advice)
- Accepted a concept for consultation purposes

A notable feature of these meetings has been the gradual understanding by all parties of the relative perspectives and desires of each other. The initial “education” process to bring everyone up to speed on the relevant transport and central city issues has also helped. As a result, the process has moved from one initially involving some tension and misunderstanding between working party members, to one where constructive dialogue and often consensus is taking place.

## 2. BACKGROUND

The Central City Transport Working Party was established in response to resolutions of Council when it considered the Lichfield-Tuam Streets Swap proposal, in 21 November 2002. The Council resolutions passed at that time were:

- “1. That the Council conduct a transport review of streets between Hereford Street and Moorhouse Avenue.
2. That the Council form a working party to:
  - (a) Discuss terms of reference for the working party for adoption by the Sustainable Transport and Utilities Committee;
  - (b) Initially address traffic issues between Hereford Street and Moorhouse Avenue; and
  - (c) Address transport planning within the Four Avenues as a parallel process to (b) above.

*This study will focus on the implementation of Council transport strategies, addressing the negative impacts of traffic flows as well as protecting and enhancing inner city economic well-being and commercial viability.*

3. That the working party comprise:
  - (a) Five members of the Committee being Councillors Sally Buck, Carole Evans, Chrissie Williams, Ron Wright and the Chairman.
  - (b) The Chairman of the Mayoral Forum or nominee.
  - (c) Three representatives of Central City Businesses, one of which is to be nominated by the Canterbury Employers' Chamber of Commerce.
  - (d) Councillor Diana Shand, Environment Canterbury.
  - (e) A road user representative nominated by the NZAA.
  - (f) A representative of SPOKES.
  - (g) A bus company representative.”

Note that a fourth resolution for this item related to the Hagley Avenue cycleway project, and was dealt with separately.

The Working Party was established in early 2003, and its membership was in line with recommendation 3 indicated above.

## 3. CONTEXT

The Central City Transport Working Party work was couched in the context of various existing Council policies and strategies which impact on the central city. These were presented to the Working Party over a series of initial meetings, to inform and provide context to the Working Party task.

The key strategy or process into which this project has to integrate is the Central City Revitalisation Project, and this was taken as being principally expressed through that project's document “*Revitalising the Heart of Our City, Development of a Central City Strategy - Stage 1*”, February 2001.

That strategy document presents a vision for the central city as “*A vibrant, exciting, safe and sustainable Central City heart: a heart with a strong and healthy economy, environment, culture and society.*” There are also a number of objectives across a range of issues, including transport which reads “*Transport accessibility and safety: To enhance pedestrian, cyclist, and public transport accessibility and safety in and around the Central City, maintain vehicle access but reduce its dominance in some areas of the Central City, and ensure excellent links with the wider metropolitan area.*”

In the consultation process to create that document, the feedback gathered indicated that the:

*“Issues of greatest importance included transport and parking, improving living conditions and the environment, safety, heritage retention, improving retail and business opportunities and the ideas on a river promenade”*

And in the area of transport and access, the feedback was summarised as:

*"In terms of making our Central City more accessible there were numerous suggestions to create more/better and free parking, improving pedestrian crossing points and wider footpaths and traffic calming, and significant support for improving public transport (especially the shuttle) and cycling, and generally reducing the number of cars"*

Work undertaken in response to the feedback and in developing the overall Revitalisation Strategy resulted in the concept plans shown in Appendix A, Figures 2 & 3, being proposed in the Stage 1 document. Further to the diagrams the strategy also noted in the supporting text a number of "proposed concepts and priorities for the transport system in the central city area". These included proposals for free short term off-street parking (now in place with the one-hour free parking), a slow movement core to provide greater priority for slow modes, increasing use of the Four Avenues through signal priority and street median closures, Shuttle Route Extensions and the Lichfield-Tuam proposal.

The Revitalisation Strategy work drew its various strands and work-streams together to produce an overall concept plan for the Central City area, as shown in Appendix A, Figure 4. Generally the "key" in this figure shows the summary concepts identified including:

- Residential and business development projects focused generally in the area east of Colombo Street and west of Barbadoes Street.
- Traffic and transport improvements including free parking in Council off-street parking buildings 1-2 hours everyday, slow movement area, increases in pedestrian crossings and traffic priority, and extensions to the Shuttle
- Significant tree planting on identified priority streets
- More open space to the "east"
- Heritage Precinct Area focusing on building character groups and entire frontages
- Public art with an initial focus on High Street, Cashel Street and the Avon River

#### **4. PROCESS**

The first key task for the Working Party was to develop its own views on an ideal transport system in the Central City over time and how this would be judged. This was carried out as a visioning exercise, and a Vision, objectives and series of assessment criteria were identified. The Working Party considered that the vision for the Central City needs to be one which:

- Provides a clear long term strategic focus that enables decisions to be based on the achievement of set objectives; and
- Is future proofed and adaptable enough to be amended as and when demographics and physiographics change.

The Vision statements which were derived from this work were:

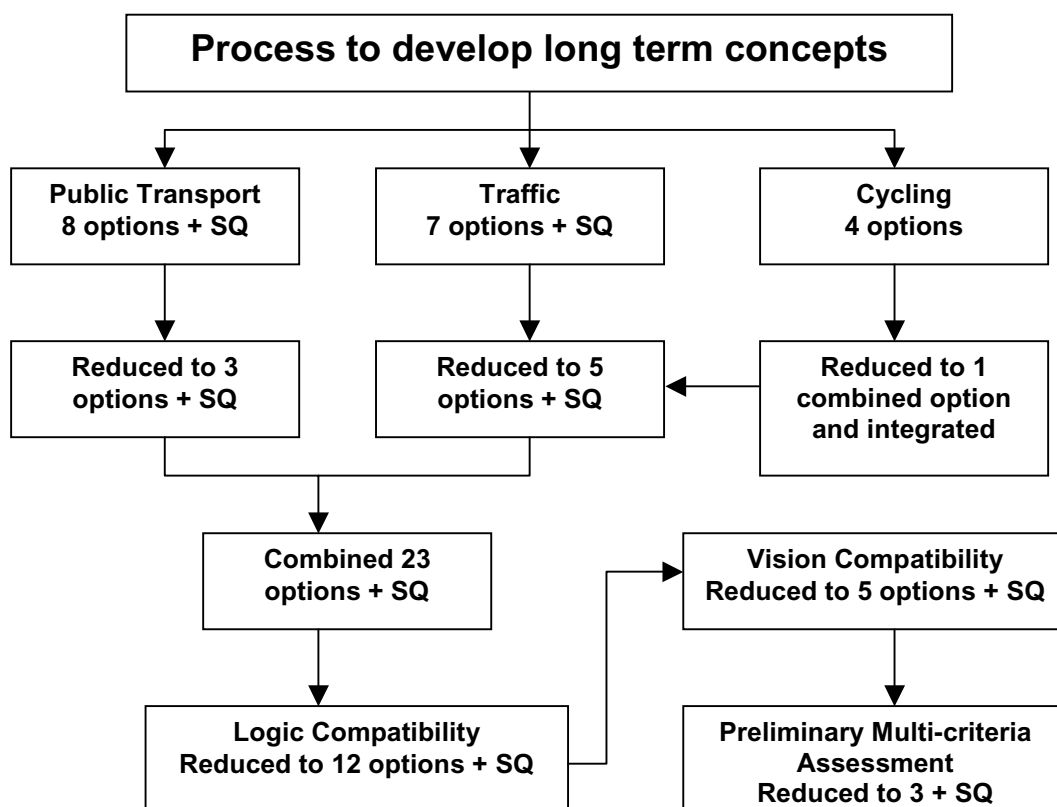
- A central city where people want to come to shop, be entertained, visit, work and live;
- Attractive streets which are very pedestrian friendly and which operate as places of social and economic exchange;
- A balance of hard and soft landscapes; and
- Environmentally sensitive and sustainable.

The assessment criteria agreed by the Working Party from this work are detailed in Appendix C, and were agreed to be used as the basis of assessing the various concepts and projects for the remainder of the project. In summary these criteria relate to:

- Acceptance/understanding of key stakeholders
- Legibility
- Safety: both Travel Safety and Personal Security
- Access
- Travel time
- Cost/value - economic sustainability
- Equity of service
- Amenity/aesthetic quality
- Streetscape

- Urban form
- Environmental impacts
- Integration with the wider transport network
- Future proof/flexibility
- Travel reliability
- Integration with other modes

The Working Party then entered into a series of meetings where background on the central city transport situation and the various relevant Council policies and strategies were presented. Following these meetings, the working party discussed and reviewed various options as concepts were developed, as outlined in the following flowchart. This flowchart shows how the options considered were reduced to three which were then tested against a multi-criteria analysis, outlined in a later section.



#### 4.1 Public Transport Options

Environment Canterbury staff identified nine public transport options, which were presented to the Working Party on 11 July 2003, for comment. These options are:

- **Public Transport Status Quo (A)**, which is the “interim” cross bus routeing arrangement that started in June 2004.
- **Pure Cross (B)**, converts the interim cross to a pure cross bus routeing arrangement by making Lichfield Street two-way for buses.
- **Cross not Colombo Street (C)**, maintains east-west services on Lichfield Street, but shifts north-south services from Colombo Street to either Manchester Street or to the one-way system.
- **Central Bus Free Zone with Bus Exchange (D)** prevents buses from using a central zone, requiring an alternative north-south route to Colombo Street to access the Bus Exchange. A variant of this option allows key bus routes through the central bus free zone.
- **North and South Bus Exchanges (E)**, introduces a second bus exchange in the Gloucester/ Armagh Street area to relieve the volume of buses on Colombo and Lichfield Streets. A variant of this option replaces a shuttle service with a monorail-based service between the two exchanges.

- **Central Bus Station (F)**, replaces the current Bus Exchange with a Bus Station. Because buses can stand in the station between services, all peripheral termini can be removed.
- **Central Bus Free Zone with Bus Station (G)**, is similar to (D) but replaces the Bus Exchange with a Bus Station as defined in (F).
- **Central Bus Free Zone with Three Bus Exchanges (H)**, is similar to (D), but introduces two additional bus exchanges north of a central core.
- **Light Rail (I)** maintains the existing bus network, but uses existing railway south and west of the central city and introduces new rail on key corridors.

A summary of the key elements of each option is presented in Appendix D.

Environment Canterbury staff assigned the options into four groups and selected one option in each to be analysed in the integrated public transport and traffic concept stage. These groups are Public Transport Status Quo (option A), Pure Cross (now known as Bus Exchange) (B or C), Bus Free Zone (D, G, or H) and Bus Station or New Bus Exchanges (E or F). The following four options were selected for integration:

- **Public Transport Status Quo (A)** as a base against which to compare alternative options.
- **Pure Cross (B)**, because maintaining the north-south route on Colombo Street keeps stops close to the central pedestrian area. Shifting the north-south route to Manchester Street prevents the use of on-street termini and significantly increases bus travel distances.
- **Central Bus Station (F)**, because it overcomes significant operational issues that would be required with operating two or more bus exchanges. It is close to the central pedestrian area, removes the need for peripheral termini and prevents the need for multiple transfers incurred by people who change buses.
- **Central Bus Station with Bus Free Zone (G)**, because it has the smallest increase in distances the buses need to travel of all the options in this group. The bus station also removes the need for peripheral termini.

Light Rail (I) was not selected as it was an unlikely option within the time horizons of this Working Party. However, it needs to be investigated outside of this project.

#### 4.2 General Traffic Options

Christchurch City Council staff identified eight general traffic options, which were presented to the Working Party on 11 July 2003 for comment. These options are:

- **Traffic Status Quo (J)**, which is the current street layout.
- **Modified Traffic Status Quo (K)**, which converts Lichfield Street to a two-way street to allow the bus routeing pure cross to be implemented.
- **North, South and East Routes (L)** removes the western one-way pair to improve pedestrian and cyclist amenity in the Arts Precinct.
- **All Streets Equal (M)** removes the one-way system and road hierarchy.
- **Slowing Central Core (N)** introduces the concept of a central core with a reduced speed limit, but makes no attempt to discourage through-traffic.
- **Slow Movement Core (O)** aims to be more restrictive than (N) by discouraging through-traffic. This could possibly be achieved with a faster speed limit on the four avenues.
- **Pedestrian Heart (P)** aims to be more restrictive than (O) by introducing traffic restrictions in some areas.
- **Quadrants (Q)** prevents through-traffic, requiring access to specific quadrants in the central core to be from the four avenues.

Two options were rejected Option L: North, South and East Routes, (because it only treats a single issue related to the Arts Precinct), and Option N: Slowing Central Core (because of the conflict with introducing a slowing core whilst not aiming to discourage through-traffic.)

No other option was considered to have fundamental flaws to warrant early rejection.

### 4.3 Cycling Options

The following four cycling options were identified and presented to the Working Party on 24 July 2003 for comment. These options are:

- **All Streets Cycle Streets (R)** allows modest recognition for cyclists on all streets.
- **Main Arterial Route Focus (S)** introduces cycle facilities on all main routes.
- **Cycle Priority Streets (T)** provides direct routes based on cyclist desire lines.
- **Quiet Street Focus (U)** separates cyclists from large traffic volumes by providing “green” corridors.

Assessment by City Council staff and feedback from the Working Party resulted in development of a combined option (S) and (U). This allows for the desire for commuter cyclists to use arterial roads whilst providing high amenity and safety for recreational and inexperienced cyclists. This combined option has been inherently incorporated into the traffic and public transport options.

### 4.4 Concept Integration: Logic Compatibility and Vision Compatibility Analyses

The four selected public transport options and six traffic options were combined to produce 24 integrated concepts. These concepts were initially analysed on logical compatibility, for example removing buses from a central core whilst maintaining full car movements is almost certainly not a logical proposal.

The remaining integrated concepts were analysed for compatibility with the 20-year vision from the Christchurch Central City Strategy Stage 1 Report and the Working Party’s objectives.

Detail of these analyses is available in a separate project record report, which can be provided on request. The following concepts were combined and selected as packages for multi-criteria analysis:

- **Pedestrian Heart (P)** with **Pure Cross (B)** or **Central Bus Station (F)** due to high amenity in the central core.
- **Quadrants (Q)** with **Pure Cross (B)** or **Central Bus Station (F)** due to high amenity in the central core.
- **Slow Movement Core (O)** with **Central Bus Station (F)** due to reduced car and bus conflict from removal of peripheral termini.

### 4.5 Preliminary Multi-criteria Analysis

The remaining integrated concepts were scored against the assessment criteria, with the following results:

- **Pedestrian Heart (P)** with **Pure Cross (B)** and **Central Bus Station (F)** scored very highly due to high amenity, improved urban form, positive environmental impacts and increased travel reliability.
- **Slow Movement Core (O)** with **Central Bus Station (F)** also score reasonably when compared to the quadrant options.
- **Quadrants (Q)** with **Pure Cross (B)** and **Central Bus Station (F)** scored very poorly compared to the pedestrian heart and slow movement core options, due to poor stakeholder understanding, poor legibility, low accessibility, low amenity compared to pedestrian heart options, and negative environmental impacts.

The results of the public transport and general traffic options selections, logic compatibility analysis, vision compatibility analysis and preliminary multi-criteria analysis were presented to the Working Party on 23 October 2003, which decided that the following three concepts should be analysed in detail pending more information about the concepts:

- **Pedestrian Heart (P)** with **Pure Cross (B)**
- **Pedestrian Heart (P)** with **Central Bus Station (F)**
- **Slow Movement Core (O)** with **Central Bus Station (F)**

Note that coupled with these concepts is the preferred combined cycling concept.

## 5. PEDESTRIAN HEART AND SLOW MOVEMENT CORE DETAILED ASSESSMENTS

This section addresses the detailed analysis undertaken on the remaining concepts which was supported by the Working Party at its meeting of 9 December 2003 when the details and initial comments of the options were presented. This work took considerable resources both in its initiation and in conducting the actual work, and resulted in a hiatus in Working Party meetings in early 2004. The analytical work was conducted under five general work streams, covering economic impacts, traffic modelling, stakeholder views (focus groups, etc.), journey quality and environmental impacts.

### 5.1 Public Transport

The earlier process considered the options of retaining the existing Bus Exchange (Pure Cross) or converting it into a Bus Station (Central Bus Station – although this also requires the pure cross route structure) as two distinct options, albeit allowing the Bus Exchange to be a stage of an eventual Bus Station.

The key differences between a Bus Exchange and a Bus Station are:

- The Bus Exchange is for buses loading and unloading passengers only. Buses then move onto peripheral termini (Casino, Parkside, Polytech and Hoyts) to wait for the next trip.
- The Bus Station allows buses to load and unload passengers and then, if needed, to stand within the station area, removing the need for peripheral termini.

With increasing introduction of bus through-routes (eventually to cover most routes), the Bus Exchange and Bus Station Options become very similar. Therefore, in terms of an overall central city concept, the integrated concepts can be simply referred to as:

- Slow Movement Core
- Pedestrian Heart

This terminology is used throughout the remainder of this section.

### 5.2 Extent of Central Core

Identification of a specific central core size is difficult, with the potential for large numbers of slightly varying boundaries. The extent of the core considered for analysis was bounded by the inner anticlockwise one-way system of Kilmore Street, Durham Street/Cambridge Terrace, Lichfield Street and Madras Street (as indicated in Appendix A, Figure 2).

Other sections of the central city could also be considered to be part of a slow movement core or pedestrian heart, or as associated precincts. These include;

- The Arts Precinct area, west of Cambridge Terrace;
- Victoria Street
- High Street, south-east of Lichfield Street.
- Colombo Street, south of Lichfield Street.

### 5.3 Constant Elements Between The Concepts

Because a primary objective of the Working Party during this stage was to compare concepts, it was important to identify elements that would be constant for all concepts. This does not mean that these aspects would not change with time, but any changes would be likely to occur irrespective of the chosen concept.

These constant elements are:

- The one-way system remains;
- Landscaping to beautify the central city will continue;
- The Shuttle will continue;
- More efficient and simplified routing of buses will be undertaken:
  - reduction in bus volumes whilst maintaining the level of service
  - focus on Colombo and Lichfield Streets
  - two-way movement for buses on Lichfield Street
  - Bus Exchange remains but expanded in time

- Residents' vehicle access will be maintained
- Delivery vehicle access will be maintained, but may be restricted at times in places
- Similar number of on-street parks and no access restrictions to parking buildings.
- More reliable bus service due to less congestion on inner streets.
- Safer journey for pedestrians and cyclists due to fewer, slower moving vehicles, and a more pedestrian friendly layout.

#### 5.4 Status Quo

The Status Quo is essentially the existing situation, with the following details:

- Because street layout and management will change with time, for assessment purposes, it is assumed to be that as existing in 2003, together with other minor committed schemes planned for the central city and adjacent areas.
- Bus routes are assumed to be those as at November 2004, due to the significant changes implemented by ECan in June 2004 and planned for November 2004.

Note that existing pedestrian malls and slow street treatments such as City Mall and Worcester Boulevard would remain.

#### 5.5 Slow Movement Core

The Slow Movement Core aims to reduce congestion and conflict between modes, without restricting access. Key elements of the Slow Movement Core are:

- The one-way system would retain a 50 km/h speed limit.
- The streets within the core would have their speed limit reduced from 50 to 30 km/h without having access restrictions. Traffic management measures will be needed to actively reduce speeds, which could be of the form shown on the *Restricted Speed Environment* sketch (see Appendix B, Figure 5). An example of this treatment is on Gloucester Street outside the library.
- The outer avenues would have a 60 km/h speed limit. This may have some impact and may require median closures at some intersections.

The aim of the 30 km/h speed limit is to encourage traffic to move to the faster streets.

#### 5.6 Pedestrian Heart

The Pedestrian Heart aims to reduce congestion and conflict between modes, through providing a greater balance between modes. In particular, there is a greater promotion of pedestrian activity and amenity within the heart. It is important to emphasise that few, if any, streets would be fully pedestrianised. Instead pedestrian activity and amenity will be improved by reducing general traffic flows and speeds in the core, improving crossability of streets and widening footpaths. Key elements of the Pedestrian Heart are:

- The one-way system will retain a 50 km/h speed limit.
- Approximately half the streets within the heart would be as those in the Slow Movement Core.
- The bulk of the remaining streets will have their operating speeds reduced below 30 km/h to discourage non-essential traffic. These streets could be of the form shown on the *Slow Street Environment* sketch (see Appendix B, Figure 6), or could also be similar to Oxford Terrace outside the "Strip" or Worcester Boulevard outside the Arts Centre. Most streets are likely to remain two-way, but they will be narrowed considerably and could include short one-lane sections such as currently present on Chester Street west near ECan.
- Part of Colombo Street would be a bus only street. This street could be of the form shown on the *Bus Only Street* sketch (see Appendix B, Figure 7), which would allow unrestricted access to buses, cyclists, pedestrians, and possibly taxis. Other vehicles would be restricted, although access for service vehicles would be required at certain times. The extent of this treatment may vary, but it is believed that maximum benefit would be provided between Hereford and Lichfield Streets.
- There would also be the possibility of another pedestrianised precinct.



Other aspects of the Pedestrian Heart are:

- Much more reliable bus service, especially on Colombo Street.
- Safer journeys for pedestrians and cyclists due to significantly fewer, slower moving vehicles.
- Pedestrian friendly layout.

It is important to note that treatments for each street in both these concepts are not definitive, but have been developed to allow some form of analysis.

## 5.7 Stakeholder Views

To gauge stakeholder understanding and acceptance, focus groups with central city users and vested interest groups were held. Three pilot sessions were held in May 2004 to test the group structure and presentation material and six final sessions were held in July 2004.

As a key objective was to distinguish and assess the differences between the Slow Movement Core and the Pedestrian Heart, parts of the concepts common to both (and possibly the Status Quo) were presented as constants.

Key findings were:

- There is high enthusiasm for the overarching Central City Vision with a need for this Vision to be supported by an effective transportation system.
- The transport system should be determined by the central city “product”, with many participants struggling to understand what the product was. This made it more difficult for them to judge the concepts.
- There was overall high support for the one-way system to provide accessibility to the central city, whilst some negative aspects of amenity and high speeds were noted.
- Parking is seen as the single largest issue in the central city. It is considered to be fragmented with insufficient on-street parks, insufficient spaces in some buildings, and high parking costs.
- The Status Quo is not viewed as a realistic option due to issues with parking, accessibility, congestion and conflict between modes.
- The Pedestrian Heart is seen as the most acceptable concept because it helps in creating a more desirable central city product and reduces conflict between modes. The Slow Movement Core is positioned between the Status Quo and Pedestrian Heart in terms of support.
- Central city users as a whole favoured the concepts more than some vested interest participants, although other vested interest participants were strongly in favour of the Pedestrian Heart.
- Both concepts as presented were seen as incomplete for resolving issues with parking, accessibility and congestion, and public transport. For public transport in particular, some thought the concepts were not visionary enough, for example some considered that light rail should be included. Most simply did not understand that the public transport issues as presented in the concepts did address many of the issues being raised. This is because they were not covered in sufficient depth due to the constraints of the Focus Group framework for this study.

The issues surrounding parking, accessibility and congestion are covered in Section 6 “Key Issues for Further Analysis”

## 5.8 Traffic Modelling and Transport Analysis

The concepts were tested using a microsimulation transportation model developed for the central city, which allows every individual vehicle in the network to be modelled and assessed. To ensure a good base to compare the concepts against, the Status Quo model included the proposed November 2004 bus routes and committed traffic schemes that have yet to be implemented.

Key findings were:

- The Slow Movement Core and Pedestrian Heart are anticipated to result in reductions in traffic volumes of 15% and 16.5% respectively in the core area, compared to the Status Quo. The displaced vehicles generally move to the one-way system. These estimates are believed to be conservative, because the model does not allow for behavioural changes, such as changing time of trip, mode, etc.
- There would be an overall 15 second increase on an average vehicle journey time of 4.5 minutes in the Pedestrian Heart. This would be offset by savings experienced by pedestrians who would have greater priority in the core area.
- There is negligible change on travel distance, despite the traffic restrictions imposed on Colombo Street in the Pedestrian Heart.
- In terms of travel reliability, which can be considered as variability in travel times, the Pedestrian Heart has an average 3% increase in unreliability for all central city trips, although within the core area reliability improves. This shows that whilst trips within the core are slower, they are also more reliable.

In summary, both concepts have only minor overall effects in terms of travel times and associated aspects. However, there will be local effects that would need further investigation in later stages of project development.

In contrast to travel times, either concept is expected to yield very positive effects on road safety for vehicles, cyclists and pedestrians. For vehicles, crash cost savings are in the order of 45% and 60% for the Slow Movement Core and Pedestrian Heart respectively, reflecting both reduced conflict and speed reductions. For pedestrians and cyclists, injury savings are in the order of 30% and 50% within the core for the Slow Movement Core and Pedestrian Heart.

## 5.9 Economic Assessment

To gauge the economic impacts of the two concepts, a qualitative economic assessment was undertaken by the NZIER. A quantitative assessment was not carried out on professional advice, primarily due to a lack of data.

Interviews were held by NZIER with sample businesses representing the retail, entertainment, accommodation, commercial and educational sectors. These businesses thought that both concepts would increase the time that people spent in the central city, but retailers in particular thought that introducing access restrictions to private vehicles in the Pedestrian Heart may deter local people from visiting.

Tourism spend should increase for both concepts because they generally are not dependent on the private vehicle, and the amenity will make the central city a more attractive place to spend time.

A literature review found that in the United States, many large scale earlier conversions of city streets to pedestrian malls had not been particularly successful, with conversions back to allowing vehicle access. However, NZIER noted that it is important to understand the context before comparing with Christchurch. Both proposed concepts must be regarded as partial measures compared to the United States pedestrianisation examples quoted, and in this context what is being proposed is closer to many (successful) examples in Europe.

In summary, the NZIER report expressed caution with the Pedestrian Heart because of the reliance on the private vehicle in coming to the central city. However, it considered that perceived impacts on accessibility and congestion can be mitigated by phased implementation coupled with good publicity.

## 5.10 Quality of Service

The journey quality of service relates to the ability of getting to a destination (accessibility), the ease of getting there (legibility) and the enjoyment of getting there (quality).

- Both concepts are expected to have a very small decrease in legibility for vehicles, reflecting in small changes in travel distance.

- The Pedestrian Heart would have a small overall decrease in accessibility for vehicles, due to access restrictions on Colombo Street and the possibility of another pedestrian precinct. This would be offset by increased accessibility for pedestrians, as mid-block crossings will reduce trip suppression for groups such as the elderly or disabled.
- Both concepts would also have small decreases in quality for vehicles due to small increases in travel times and congestion. However, pedestrians and cyclists will have very large increases in quality, which is due to fewer vehicles and lower speeds in areas with high numbers of pedestrians and cyclists.

In summary, both concepts have very positive impacts on quality of service for pedestrians and cyclists, and very minor negative overall effects for motor vehicles. However, there will be local effects that would need further investigation in later stages of individual project development.

### 5.11 Environmental Quality

Environmental quality issues relate to the attractiveness of the environment (amenity), the urban form, personal security, noise and air pollution. Both concepts will significantly improve the attractiveness of the environment, although the Pedestrian Heart will achieve higher gains due to the greater degree of treatment.

Urban form is much more difficult to evaluate because change occurs much more slowly and because there is a strong coupling between land uses and the transport system. In other words, changes to the transport system can lead to subsequent effects on land use that may not be envisaged now. Both concepts were evaluated by the Central City Revitalisation Team, who rated the overall concepts similar in terms of effects on work, live, play and shop land uses.

The traffic modelling showed that both concepts have negligible average change on noise and air pollution, but again there may be local areas of higher or lower levels compared to the Status Quo. The focus groups stakeholders considered both concepts would improve feelings of personal security.

## 6. KEY ISSUES FOR FURTHER ANALYSIS

Following on from the detailed assessments and working party feedback on the Pedestrian Heart and Slow Movement Core concepts, some additional key issues were raised requiring further consideration and analysis. These included how parking accessibility and congestion would be dealt with, and the context of the central city within which the modifications to the transport system would be couched.

### 6.1 Parking and Accessibility

The issues raised about accessibility by the Focus Group participants was linked to being able to access parking (hence this issue can be considered as part of the considerations surrounding parking).

Following the detailed assessment work on the two concepts, a plan was developed and proposed relating to how parking could be managed and developed in the central city. It was presented and discussed with the Working Party and Council Parking staff, and has been accepted by both as suitable for integration with either of the concepts.

The essence of the proposed parking plan is based on three parking zones: the core, a ring immediately surrounding the core, and the periphery (between the ring and the four Avenues).

A range of background information to support the parking plan was presented to the Working Party including:

There are some 36,000 spaces within four Avenues, distributed as follows:

- On-street: 2,500 meters, 1,500 restricted, 5,000 unrestricted
- Public off-street: 3,500 City Council, 1,400 Wilsons, 3,600 Other
- Private off-street: 17,000
- CCC "control" about 10,500 spaces (c. 30%)

There are thus about 25,000 long term parking spaces available within the four Avenues, both on and off-street. This equates to approximately 0.7 spaces per employee, and may be compared to the Wellington CBD (0.5 spaces/employee) and the Auckland CBD ( 0.35 spaces/employee).

In the CCC parking buildings:

- There are about 18% permanent and about 12% early bird parkers (about 1000 spaces are long term parkers)
- Average daily occupancy is approximately 51%, and peak average occupancy (10:30 am - 2:30 pm) is approximately 84% (note that peak average occupancy is practically full, with distributional issues meaning some facilities are at capacity.)

A range of objectives for parking associated with the concepts was supported by the Working Party, and included:

- Easy access to and user-friendly parking
- Easy to find parks (minimising circulating traffic and congestion)
- Easy to service parking costs (ie parking charges use "round" figures for rates)
- Match parking type supply with parking type demand
- Plan for growth
- Manage expectations/provide certainty.

It was also accepted that the City Council had additional objectives, primarily related to the need for a reasonable return on investment if possible, and to be consistent with its Parking and other Strategies

During the discussions on the parking plan objectives, it became apparent that it was important that the concepts should seek to maintain the existing parking supply in total quantity. This was not added as an objective, but was considered as a fundamental issue to seek to achieve.

To deal with the issue of growth in parking demand, the growth was divided into two types: commuter and visitor (noting that the key issues related to growth is in the core where the residential parking will cater for its own demand). Referring to the Regional Land Transport Strategy reveals that the preferred direction for dealing with peak traffic growth is to accommodate it via other modes. Thus the response proposed for the parking plan is:

- For commuter parking: Promote other modes, Park N Ride, new developments growth provides own supply, private sector investment opportunity
- For central city visitor parking: CCC buildings have 1000 spaces to convert as required (40% growth possible); and if a new facility is justifiable then must be in right place

It is worth noting as an aside, some information regarding 'Park N Ride'. Overseas experience with 'Park N Ride', which is now becoming well established, has highlighted a number of key issues which will determine the success or otherwise of schemes. These are:

- There needs to be a good supply of parking at the outer (origin) end, and restrained parking supply at the destination end of the trip.
- There needs to be some reasonable distance travelled on the bus (over 5 km), to encourage the transfer to bus.
- The 'Park N Ride' station needs to be on the origin side of key bottlenecks or congestion points, which public transport priority measures can bypass at significant advantage over general traffic.
- The bus service needs to be at very high frequency, especially so during periods of high demand.

These matters indicate that 'Park N Ride' will not be an easy prospect to introduce to Christchurch, and certainly would not work with stations close to the central city. However, it does provide an option to form part (probably small) of an overall package of proposals to deal with growth in travel to the central city.

To return to the three zone concept, the zones would each focus and/or enable on different types of parking to occur, as follows:

- **Core** - focus on mainly short term and ancillary parking. Shift emphasis to shorter term spaces (mainly M30/P30 with some P10 or P15's). Provide medium term spaces (60-120 minutes) in parking precincts either keeping in on-street clusters or in nearby off-street facilities within the ring. Charge on-street spaces in accordance with the scarce resource concept and let the market supply if demand for public off-street commuter parking justifies
- **Ring** - focus on medium term CBD visitor parking. Base on a search pattern around facilities (integrated with the RTI system). Accept displaced core meter parking by removing long term parkers from Council off-street facilities. Review option(s) for additional off-street facilities on ring to cater for demand foci. Need to address negative views of current parking buildings.
- **Peripheral** - provide for local residents, residential visitors and long term commuter parking, largely as now. Treat special precinct areas on case-by-case basis, eg Victoria Street

The Working Party expressed concern regarding the potential impact/loss of parking especially in the core area, resulting from this parking concept as well as the street treatments proposed in the concepts. Analysis of this matter assessed at a block-by-block level using a series of assumptions concluded that gross displacement of parking in that area would be of the order of 165 "medium term" parking spaces. However, a proposed change to higher turnover of around half the metered spaces, the creation of angle parking in parking precincts and the displacement of some long term leased spaces from off-street Council parking buildings together, provide more than sufficient opportunity to address this initial loss, without necessarily having to resort to planning for a new parking facility. Initial consideration of the financial implications of these proposals indicates reason to believe that they should be able to be managed to be cost neutral to the Council. Whilst at the global level the analysis has not shown the need for any new parking buildings for short/medium term parking (parking demand appears reasonably uniformly distributed across the central city), further analysis is required to determine if distributional issues may create the case for one. The actual significance of 165 spaces in the context of 36,000 spaces within the four Avenues also needs to be considered.

## 6.2 Congestion

The stakeholders participating in the Focus Groups raised congestion as an issue that was not apparently addressed in the concepts. The comments indicated that congestion was not perceived as an overall problem in the central city, but rather that there are hotspots that need addressing. Some were associated with parking facilities (public and private). These localised areas of congestion that were raised were all within the core area, but the reduction in traffic and traffic management approach proposed in this area by the concepts were not linked by the participant stakeholders. Whilst there may not be what the participants desire in resolution of the congestion in all these areas, the nature of the congestion will be changed (including the causes) and should not compromise the desired outcomes of the concepts.

## 6.3 Central City Context

There is a high recognition that the transport system is integral to achieving the Central City Vision, but it needs to be developed in context with the overall central city strategy.

## 7. INITIAL CONCEPT FINALISATION

The following concept plan (see figure 1 attached) was presented to the Central City Transport Working Party at a meeting on 23 July 2004, as an attempt to express the common elements of the concepts being discussed. It should be reinforced that this diagram is highly conceptualised, but outlines the general shape and relationships of various components being discussed for the Central City Transport Plan.

## 7.1 Decision Making Framework

The complexity of the concepts and the perceived similarity of the Slow Movement Core and Pedestrian Heart concepts made it potentially difficult for the Working Party to make a decision between them. To mitigate this, the concepts were broken into components, and each component was assigned to either or both concepts. Agreement was sought from the Working Party on each component during two Working Party meetings held on 30 July 2004 and 5 August 2004.

The following table lists the components in each concept which are described in the following sections.

Component	Status Quo	Slow Movement Core	Pedestrian Heart
Core		•	•
Precincts outside core	•	•	•
Access to the one-way system	•	•	•
One-way system	•	•	•
Streetscaping		•	•
Bus Exchange and Pure Cross		•	•
Parking - loading, short stay, core ring, long stay		•	•
Restricted speed environment treatments		•	•
Slow street environment treatments			•
Pedestrian precincts			•
Bus street on Colombo			•

## 7.2 Core

The core defines the central city area where through-traffic will be discouraged and general amenity is significantly improved. It will be bounded by the anticlockwise one-way system, which is defined as the “core ring”.

## 7.3 Precincts outside core

The principles and treatments within the core are needed for other smaller areas with recognised amenity within the four avenues, for example Arts Precinct, Victoria Street and High Street.

## 7.4 One-way system

The one-way system will be maintained to provide good motor vehicle access to, from and around the core, and to define the core ring. The system needs to be maintained with no breaks to protect its integrity, but implementation of mitigation measures to upgrade amenity, improve crossing points for pedestrians and cyclists, and to manage speeds should be considered.

## 7.5 Streetscaping

A central city streetscape design concept is needed to provide an overall central city theme or “brand”, but is also flexible to allow the individuality of different precincts to be reflected. It is important that the core stands out, but all areas within the four avenues are included in the strategy.

## 7.6 Bus Exchange and Pure Cross

The current Bus Exchange will be maintained, but implementation of the pure cross and expansion of the site is needed to improve public transport efficiency and effectiveness. The north-south bus corridor will be along Colombo Street, and the east-west bus corridor will be along Lichfield Street, Tuam Street or both. A discussion about the east-west corridor and the implications of an expanded bus exchange is described in section 8.2 on Lichfield-Tuam options.

### **7.7 Parking - loading, short stay, core ring, long stay**

The parking proposals are as outlined in section 6.1 above.

### **7.8 Restricted speed environment treatments**

A blanket 30 km/h speed limit would be implemented in the core and special precincts, to reduce speeds and discourage through-traffic. To actively reduce speeds and improve the street attractiveness, appropriate traffic management measures, such as kerb build-outs or pedestrian platforms would be needed.

The lower speed limit throughout the core is needed to provide consistency, but different streets need to have different street treatments.

### **7.9 Slow street environment treatments**

The slow street environment treatments are needed on some streets to provide high pedestrian amenity by discouraging non-essential traffic. The working party was comfortable with adopting this treatment on some streets, but wanted to see an illustrative example of a possible street layout before giving agreement. This is discussed further below in section 8.1.

### **7.10 Pedestrian Streets/Malls**

Development of pedestrianised streets (or pedestrian malls) will not be an essential element of the central city transport concept, although there remains the provision to implement them if warranted by future land use changes.

### **7.11 Bus Street on Colombo Street**

The bus-only street on Colombo Street, at least between Hereford and Lichfield Streets, was proposed to provide reliable access to and from the Bus Exchange for the north-south routes.

### **7.12 Initial Agreement on a Concept**

The working party agreed to expand the Bus Exchange, to set aside the component of Pedestrian Streets and, with the exception of the Bus-only Street on Colombo Street component, adopt all other components of the Pedestrian Heart. This produced a "draft final" basic concept. However, uncertainty regarding options associated with the Bus Exchange resulted in a need for further analysis in greater detail to provide the Working Party more confidence in the robustness of the overall concept. This is discussed in the next section.

## **8. BASIC CONCEPT OPTIONS REFINED**

The working party meeting on 5 August 2004 agreed the basic form of the concept except for the following two components:

- Slow street environments, because of the desire to see an illustrative street layout.
- Bus-only street on Colombo, because of the adverse reaction to closing part of Colombo Street to private motor vehicles and because of a strong desire to remove the Bus Exchange on-street platforms/bus stops.

The issues associated with these were presented at a working party meeting on 9 September 2004, as described in the following sub-sections.

### **8.1 Street Treatment Types**

The core must have a sense of "entry" and reinforcement of the nature of the area throughout; that is people entering by any mode need to realise that they have entered and are in a special area. Therefore all streets within the core need some degree of treatment, although consideration also needs to be given to the different functions that various streets within the core will continue to fulfil.

Three street treatment types have been proposed for core and special precincts as follows:

- **Low**, which improves amenity through measures such as kerb build-outs and landscaping, but continues to give priority to motor vehicles. A current example of this could be central sections of Colombo Street.
- **Medium**, which adds provision of pedestrian priority at selected crossing points to the low treatment, through pedestrian platforms or speed cushions. A current example of this is on Gloucester Street outside the library.
- **High**, which actively discourages non-essential traffic through extensive street narrowing, landscaping and other treatments. However, the use of one-lane sections such as that used on Chester Street West behind ECan was not popular with the Focus Groups. Examples of this include The Strip, Worcester Boulevard and Peterborough Street.

An illustrative example of a possible layout is in Appendix F.

In conjunction with the streetscape design concept to be developed, there will be variety within each street type. Two streets may be designated with the same treatment, but the actual design for each will need to be tailored to suit their different contexts.

This street treatment concept was agreed to by the working party as indicative only of the broad nature of how the street treatment philosophy may be applied, with an understanding that actual designations for each street will be done in the next stage of this project.

## 8.2 Bus-Only Street on Colombo Street and Lichfield Street-Tuam Street Options

The initial Pedestrian Heart concept maintained on-street Bus Exchange platforms/bus stops on Colombo Street at the Crossing/Ballantynes area. To locate all the Bus Exchange platforms/bus stops off-street in an expanded Bus Exchange facility, two alternative options were initially considered:

- **Option 1** is the original Pedestrian Heart option, with on-street Colombo Street platforms/bus stops;
- **Option 2** converts Lichfield Street to a two-way street for all traffic to allow all buses to enter and leave the Bus Exchange from Lichfield Street. Because of the importance of the one-way system within the overall central city transport concept, this would result in Tuam Street being converted to a one-way street.

It was quickly realised that both the above options had significant effects, and so a third option was also developed, known variously as Modified Option 1 or Option 3 (used here).

- **Option 3** removes the on-street platforms by having buses enter and leave the Bus Exchange by both Lichfield and Tuam Streets. This would allow Lichfield and Tuam Street to remain as one and two-way streets respectively.

A summary of the differences between each option is as follows:

Component	Option 1	Option 2	Option 3
All exchange platforms/bus stops off-street		•	•
Expanded exchange necessary	•	•	•
Buses on Lichfield and Colombo Streets	•	•	
Buses on Lichfield, Colombo and Tuam Streets			•
Lichfield two-way, Tuam one-way		•	
Contraflow bus lane needed on the south side of Lichfield	•		•
Exchange access from Lichfield	•	•	
Exchange access from Lichfield and Tuam.			•
Vehicle restrictions on Colombo, between Hereford and Lichfield.	•		
Vehicle restrictions on Lichfield, across Colombo Street.		•	



With Option 1 considered to be unacceptable (mainly from the Bus Exchange bus stops remaining on Colombo Street and general vehicle restrictions on Colombo Street), the comparison on key issues between Option 2 and Option 3 is as follows:

- Both options are compatible with the proposed Central City Transport Concept.
- Option 2 raises again many of the issues that arose from the earlier 2002 Lichfield-Tuam Street proposal. Note that Option 2 would review the access restrictions on Oxford Terrace/Lichfield Street at Hospital Corner and at Montreal Street that were in the earlier project.
- Aside from a one-way Tuam Street, a large concern with Option 2 is access restrictions on Lichfield Street across Colombo Street.
- The Option 3 contra-flow bus lane on the south side of Lichfield Street could make it more difficult to make significant streetscaping changes and would remove between 50 and 135 parking spaces, depending upon the extent of the contra-flow lane.
- Option 2 allows for greater renewal of Lichfield Street, a street with a number of significant commercial buildings with unrealised potential. It would have the effect of potentially shifting the retail core boundary south to Tuam Street in this concept.
- Both options were tested in the traffic model without creating significant increases in congestion, although this would need further testing in the next stage.

In summary, each option has benefits and difficulties in different aspects and locations. Because of the significant differences in way the options treat traffic restrictions, both options should be put out to consultation to receive public feedback, particularly with the main stakeholders in the affected areas. Before this occurs, a Modified Option 2 (or Option 4) which looks at a layout that can remove access restrictions on Lichfield Street across Colombo Street will be developed, as it is felt that this will enable more equitable comparison with Option 3.

## **9. THE CENTRAL CITY TRANSPORT CONCEPT**

This additional analysis and information was presented to the Working Party at its meeting on 9th September. This presentation indicated that overall the basic concept previously identified was robust enough to be able to integrate with any of the outcomes of the alternatives considered in the additional analysis. The Working Party accepted the information as sufficient for it to endorse a Central City Transport Concept for recommendation to the Council for consultation purposes.

The Central City Transport Concept should not be considered a single diagram or map or table of components and plans. It can be considered by blending the ideas contained in figure 1 (in section 7 above) and the illustrative outline figure provided in Appendix E. Furthermore, the figure in Appendix F provides an indicative outline of how the street treatment types could be applied to the core streets. It shows a general balance and possible functional shape between street types. Further analysis and consultation will be required before the confirmation of individual street treatment types, ie finalising the figure in Appendix F.

There are also the components specifically identified earlier in section 7, which form part of the concept definition, namely:

- Core (section 7.2)
- Precincts outside the Core (section 7.3)
- One way street system (section 7.4)
- Streetscape design plan (section 7.5)
- Bus Exchange and its expansion (section 7.6 and 8.2)
- Pure Cross bus routing and through routing (section 7.6)
- The Parking Plan (section 6.1)
- Restricted speed/slow street treatments environment (section 8.1)

All these components in some form are required to maintain the integrity of the concept. For example, introducing core whilst not implementing treatments on all streets within the core to reduce speeds, will significantly compromise the concept.

## **10. CONSULTATION PROPOSAL**

### **10.1 Introduction**

The formation of the CCTWP in April 2003 was a recognition by the Council that it needed to improve its engagement with key stakeholders on the development of traffic systems for the central city. After lengthy deliberation, which has included consideration of the results of focus group research conducted with a range of citizens, the CCTWP has given its support to the Central City Transport Concept.

As the deliberations of the CCTWP and the focus group research provide a balanced picture of community views on this issue, further in-depth consultation is not required on the Central City Transport Concept or other possible concept options.

It would, however, be critical that an inform-type consultation process<sup>1</sup> was conducted to build awareness amongst the community of the concept and its implications for the central city. Building this understanding would be important prior to consulting about specific projects that would impact various stakeholders in the central city quite directly.

Following the inform process, an ask-type (dialogue) consultation processes<sup>2</sup> would be conducted on the specific projects that emerge from the Central City Transport Concept. The first such project would be a consultation to assist the Council to make a decision on the Lichfield-Tuam corridor.

### **10.2 Inform Consultation on Central City Transport Concept**

The inform consultation would be completed by December 2004. It would range from using direct communication tactics (briefings, direct mail, public display) to inform those most impacted by the concept, through to lower-level mass communication tactics (publicity, City Scene newsletter) for the wider metropolitan audience.

The main messages used in this communication would be:

- A healthy central city needs a healthy transport system.
- A healthy transport system is one that balances the needs of different interest groups and transport modes.
- The Council and Environment Canterbury have worked with key stakeholders groups to develop a long term transport concept plan.
- Key components of the plan eg public transport, one-way system, parking, street treatments
- This plan provides an overall context for future transport projects in the central city.
- Citizens will have an opportunity to have their say on each of these projects as they are developed.

Graphics would be used to help communicate the concept, including diagrams of the conceptual approach, example street maps (including individual streets) of what it would potentially mean for different parts of the central city transport system, and impressions of what streetscaping would be done.

Feedback would be invited on the concept although it would be clearly stated that this is the preferred approach of the Council.

### **10.3 Ask/Dialogue Consultation On Lichfield-Tuam Corridor**

Consultation on the options for the Lichfield-Tuam Corridor would commence as soon as practicable after the inform process had been completed (probably February-March 2005 given assessment/reporting requirements and preparatory lead times following the previous consultation period).

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<sup>1</sup> This means the Council provides citizens with clear, balanced and timely information about the issue, including why the Council has made this decision.

<sup>2</sup> This means the Council provides information to citizens about options within an issue, and seeks their views on those options to assist decision making.

These options would be presented to the community for consultation. In-depth dialogue would be conducted with potentially impacted groups, as well as general communication to the broader community. This process would assist the Council with its final decision by gaining a clear understanding of the community's views of the positive and negative impacts of different options.

## **11. NEXT STEPS**

Following on from the consideration of this report by the Committee, the next steps for this project are proposed to be:

- Council approval to consult 23 September 2004
- Stage 1 consultation period during November-December
- Report results of consultation to Working Party in new year
- Council adoption of concept in new year
- Move onto consultation on options 2/4 and 3 next year
- Following second consultation process, initiate the second phase of the overall project, looking at specific schemes between Hereford Street and Moorhouse Avenue.

## **12. SUMMARY**

In summary, this project has been running for some 18 months, in response to the resolutions of Council related to the 2002 Lichfield-Tuam proposals. It has taken the Central City Revitalisation Project document "Revitalising the Heart of Our City, Development of a Central City Strategy – Stage 1", February 2001 as a key context, along with other relevant Council strategies and policies. The key forum for developing the project has been the Central City Transport Working Party, as mandated in the Council resolutions. This group has met some 12-15 times, usually in lengthy but well attended meetings.

The project began by identifying its vision, objectives and assessment criteria. The Working Party then received several presentations on the current central city situation and statistics, and on various relevant strategies and policies. A wide range of initial transport mode options were identified and via various analyses were pared down to a small number of integrated concepts. These integrated concepts (the Pedestrian Heart and the Slow Movement Core) were subjected to detailed analyses involving a wide range of disciplines and expertise both from within the Council and external sources. Ultimately, the Working Party was able to have sufficient confidence to support for consultation the Central City Transport Concept as presented in this report.

The Central City Transport Concept is based on a number of drawings and component elements, as outlined in section 9 above. In essence it defines three zones inside the four Avenues: a core, ring and periphery. The core area would focus on providing high amenity streetscapes and safety, and reducing general traffic dominance through street layouts, and traffic and parking management. The ring area would provide a high accessibility boundary to the core, with the key medium term/shopper parking focussed around the ring developed on a logical search pattern. The periphery area would remain largely unchanged, whilst ensuring high quality access to the ring for all modes.

It is proposed that the Central City Transport Concept be adopted for an inform-type consultation process with full adoption anticipated early in the new year. Ask/dialogue consultations are proposed on more specific issues and projects derived from the concept work directly afterwards.

Finally, it should be acknowledged that the Working Party has contributed significantly to the quality and rigour of the development of the concept, through many long meetings and at times dealing with considerable preparatory material. Appreciation of the considerable effort, learning and hours of attention to the project by the Working Party is highly warranted.

**Staff****Recommendation:**

1. That the information be received.
2. That the Central City Transport Concept, as outlined in this report, be adopted for the purposes of an inform-consultation process this year and reporting back to Council thereafter.
3. That immediately following conclusion of the work in recommendation 2, an ask/dialogue consultation process be undertaken on the Lichfield-Tuam corridor.
4. That the Council expresses its appreciation and thanks to the non-Council members of the Central City Transport Working Party for their contribution and commitment to the project.

**Chairman's****Recommendation:**

That the above recommendations be adopted.