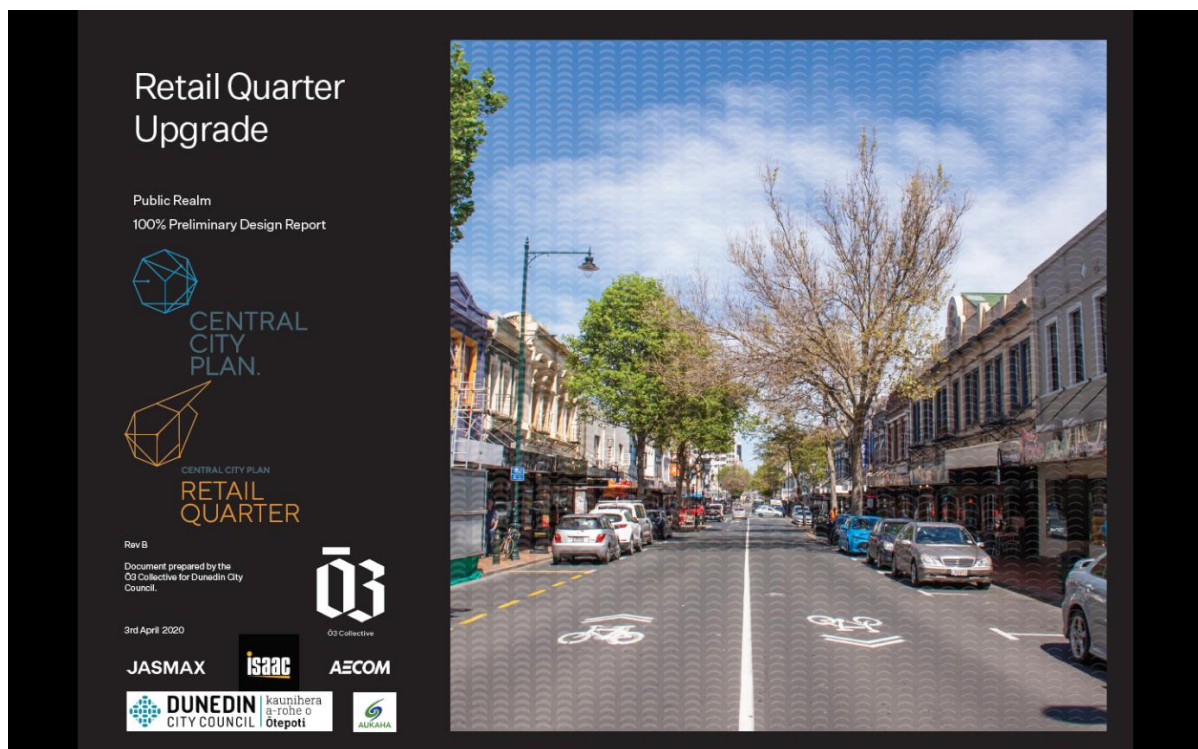


# Retail Quarter Upgrade Review

## Dunedin City Council

Urbanismplus



30 October 2020

## CONTENTS

1. Executive summary
2. Background
3. The Proposed Design Under Review
4. The Review Process
5. Core Consultation Findings
6. Issues and Recommendations
7. Decision Pathways
8. Conclusions

## 1 EXECUTIVE SUMMARY

This is an independent review of the Retail Quarter Upgrade proposal for Dunedin City undertaken by Urbanismplus. The analysis is limited to the material and representations available to the author and no additional research was undertaken. The views expressed in the review do not necessarily represent those of Dunedin City Council.

### *Review Consultation*

A series of meetings and workshops were undertaken between 3 August and 19 October 2020. These involved the Mayor, Councillors, the Project Control Group, Senior Management, Council Staff, the Central City Advisory Group, Aukaha, the Chamber of Commerce, property owners and retail / hospitality representatives.

The following proposed design elements found *high* acceptance:

- The need to upgrade George Street.
- The shared street design approach.
- The inclusion of Iwi principles and design elements.
- The public space design with its high place-making qualities and responsiveness to different conditions along the street.

The following proposed design elements found *conditional* support:

- *Heritage* – expression of Iwi values combined with the local heritage and history of the street was suggested.
- *Safety at night* – more passive surveillance from passing traffic was asked for, while ensuring additional planting would not obstruct views.
- *Flexibility* – opportunities for future users to vary the use of the spaces was asked for.
- *Rain gardens* – their water quality function was valued, provided the number did not exceed the functional requirement so space could be freed up for other needs.
- *On street parking* – there was consensus that a reasonable number of convenience and disabled carparks should be provided. Some advocated for the maximum while others recognised that the number would reduce if trade-offs were made to achieve a high-quality public realm outcome.

The following proposed design elements were *disputed*:

- *Lack of through-movement for vehicles* – disputed due to the reduced exposure to businesses and loss of legibility for residents in the district and tourists travelling by vehicle.
- *Lack of any public transport in George Street* – disputed by advocates for the elderly, the disabled, families with small children and advocates for public transport in general.

### *Decision Pathways*

An early decision is required on whether or not to provide an *appropriate* bus service through George Street. This will determine one or other of the following pathways:

- Pathway 1: Proceed with a two-way design which provides the ability to convert to a one-way design in the future.
- Pathway 2: proceed with a one-way design that can convert to a two-way design in the future.

### *Additional recommendations:*

- Extend the scope of the upgrade from Moray Place to the Octagon.
- Reduce the amount of streetscape elements, specifically:
  - Provide more flexible, obstruction free small open spaces.
  - Limit rain gardens to the minimum required to ensure functionality.
  - Consider the additional use of tree pits for run-off water treatment.
  - Avoid excessive eye-level planting that may reduce personal safety conditions.
  - Consider the interpretation of the heritage of George Street.
- Related to parking:
  - Design for 45 carparks as a working hypothesis to be verified during the developed design stage.
  - Consult with businesses to establish an appropriate distribution of carparks.
  - Ensure general short-term carparks are predominantly P20 and P30.
  - Provide parking signage and information system.
  - Consider a right-turn access into the Meridian carparking building.
  - Consider converting some leased parking to public parking in DCC owned parking buildings.
  - Review surrounding parking restrictions to better meet demands and other strategic priorities.
- Provide a bus service in George Street with:
  - Buses running on green energy such as electricity or hydrogen.
  - Buses that are smaller than current standard sizes.
  - Allowance for buses to stop in the lane.
- Locate bus stops in the Knox Block as close as practicable to Frederick Street.
- Apply traffic management techniques to improve safety at the George / Frederick Streets intersection, and avoid severance of any connecting lanes if possible.
- Design flexibility in George Street:
  - Design the upgrade so that it can convert from two-way to one-way or the other way around.
  - Do not place permanent obstacles such as trees or rain gardens in any area that may be required for vehicle movement at a future date.

### *Conclusion*

Compared to the existing George Street conditions, either of the recommended options will provide a significant improvement and result in:

- An exciting, safe, and environmentally friendly destination.
- A viable precinct where retail, hospitality and commercial activities prosper.
- A place which celebrates all aspects of Dunedin's culture and identity.
- A street that provides the ability to respond to the future.

## 2 BACKGROUND

### The Brief

On 23 July 2020 Kobus Mentz of Urbanismplus was invited by Dunedin City Council (DCC) to undertake the following:

- (i) Peer review of the George Street work done to date. Does the data / evidence support the design? Will it create a successful retail precinct?
- (ii) Potential review of our proposed engagement approach and advice on how to make the concept design a successful retail precinct that the community and councillors are convinced by.

The review was to be an inclusive process involving input from the members of the Central City Advisory Group, Councillors, staff, the Project Management Team, and the design consultants. The lead DCC contacts included the Group Manager Community and Planning and the Group Manager Transport.



**Figure 1:** Existing view of George Street (Dunedin Retail Quarter Upgrade report - page 109).

### The Reviewer

The review was undertaken by Kobus Mentz and his team. He is director of Urbanismplus based in Auckland and has a bachelor's degree in architecture and post-graduate qualifications in urban design from the Joint Centre for Urban Design, Oxford, UK. He is an associate member of the New Zealand Planning Institute and is an adjunct professor on the Master of Urban Design course at University of Auckland. He has 30 years of local and international experience as urban designer. He led the 'Dunedin Central City: *Strategic directions for the city centre and the warehouse district*' project in 2011 and delivered follow-up work in 2014.

## 3 THE PROPOSED DESIGN UNDER REVIEW

The core document under review is the **Retail Quarter Upgrade**. (*Public Realm DRAFT (100%) Preliminary Design Report*). The authors are listed as the O3 Collective which include Jasmax, Isaac and AECOM.

## 4 THE REVIEW PROCESS

The review process involved a range of consultation and technical meetings, as well as reference to several documents.

## Consultation and technical meetings

The following consultation and technical meetings were held:

*3-5 August 2020:*

- Mayor and Councillors, Project Control Group, Senior Management, Council Staff.
- Central City Advisory Group (including elderly, disabled, school and student reps).
- Aukaha (Chief Executive and General Manager, Cultural & Economic Development).
- Chamber of Commerce, Retail / hospitality and property owner representatives.

*13 August 2020:* Project Management Team and Jasmax.

*17 August 2020 (videoconference):* Mayor and Councillors, DCC staff, Central City Advisory Group.

*8 October 2020:* Central City Advisory Group.

*19 October 2020:* Mayor and Councillors.

## Documents referred to

During the review, the following documents were referred to:

- Terms of reference for the Central City Advisory Group and agenda for their first meeting.
- Retail Quarter Upgrade design report, O3 Collective, 3 April 2020.
- Slides from non-public workshops for Councillors (held during lockdown).
- Report to Planning and Environment Committee 16 April 2020 describing the consultation (including Item 7 of the minutes)
- Preliminary urban design and three waters designs including peer review.
- Business Case for George Street.
- Dunedin Inner City Bus Loop Feasibility study, AECOM, May 2020.
- Dunedin Central City upgrade, Retail Quarter – economic resilience, First Retail Group, April 2020.
- George Street public life survey, Aitken Taylor, March 2020.
- George St IBC Options Modelling, Jacobs, June 2019.
- Memo Retail Quarter parking survey, AECOM, April 2020.
- Dunedin Retail Quarter, George Street - Indicative Business Case, Stantec, February and July 2020.

## 5 CORE CONSULTATION FINDINGS

The consultation meetings revealed three categories of response:

- Elements of high acceptance.
- Elements of conditional acceptance.
- Elements in dispute.

### Elements of high acceptance

#### *Upgrading George Street*

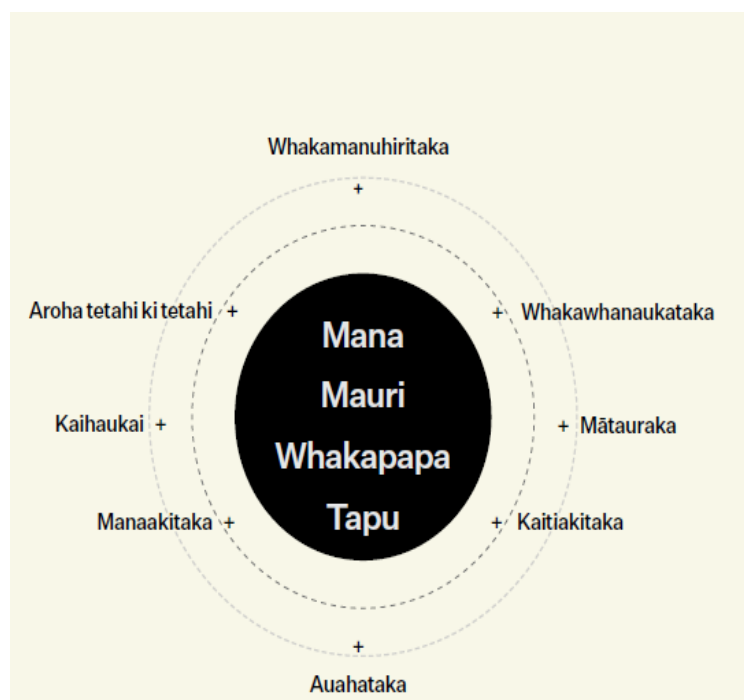
There was wide acceptance of the approach to upgrade George Street while the storm water infrastructure work was being undertaken.

### *The shared street design approach*

There was support for the shared street approach entailing an even surface across the width of the street which would be convenient for pedestrians, especially the elderly, small children and the disabled. It would also be practical for events were the street to be closed temporarily.

### *Iwi involvement and expression*

The design inclusion of Iwi principles and practical design elements was widely welcomed.



**Figure 2:** Kāi Tahu cultural values diagram (Dunedin Retail Quarter Upgrade report - Page 10).

### *Quality of the Public Realm design*

The public space design with its high place-making qualities and responsiveness to different conditions along the street was highly valued.



**Figure 3:** Street views (Dunedin Retail Quarter Upgrade report – pages 96, 108, 102).

### **Elements of conditional acceptance**

While the quality of the public space design was highly valued, concerns were raised regarding heritage, safety, flexibility, and parking.

### *Heritage*

While the inclusion of strong expression of Iwi values and principles were welcomed, the case was made that the local heritage and the history of the street should also find expression, and that the two were not mutually exclusive.

### *Safety at night*

Concerns were expressed regarding potential personal safety in the street outside business hours, due to the reduction of passive surveillance from passing drivers and the potential obstruction of views by planting.

### *Flexibility of the public spaces*

A need was expressed for more flexibility for future users to vary the use of the spaces, and for future generations to exercise expression.

### *On-street parking*

There was consensus that a reasonable number of convenience and disabled car parks should be provided in the street. While some advocated for the maximum amount to replicate existing conditions, others recognised that the number would reduce if trade-offs were made to achieve a high-quality public realm outcome. A preference for P30 parks was indicated, so that a practical amount of time was provided for short transactions. The need for information directing motorists to the surrounding parking buildings was stated.

## **Elements in dispute**

The following proposed design elements were most vigorously disputed:

### *Lack of through movement for vehicles*

Strong concern was associated with the reduced exposure to businesses from passing motorists and bus passengers. This was expressed against the background of competition with online shopping and large format stores with ample convenience parking.

An additional concern was the loss of legibility for residents in the district and tourists travelling by vehicle, who unless otherwise informed, may not be made aware of George Street's existence.

### *Lack of any public transport in George Street*

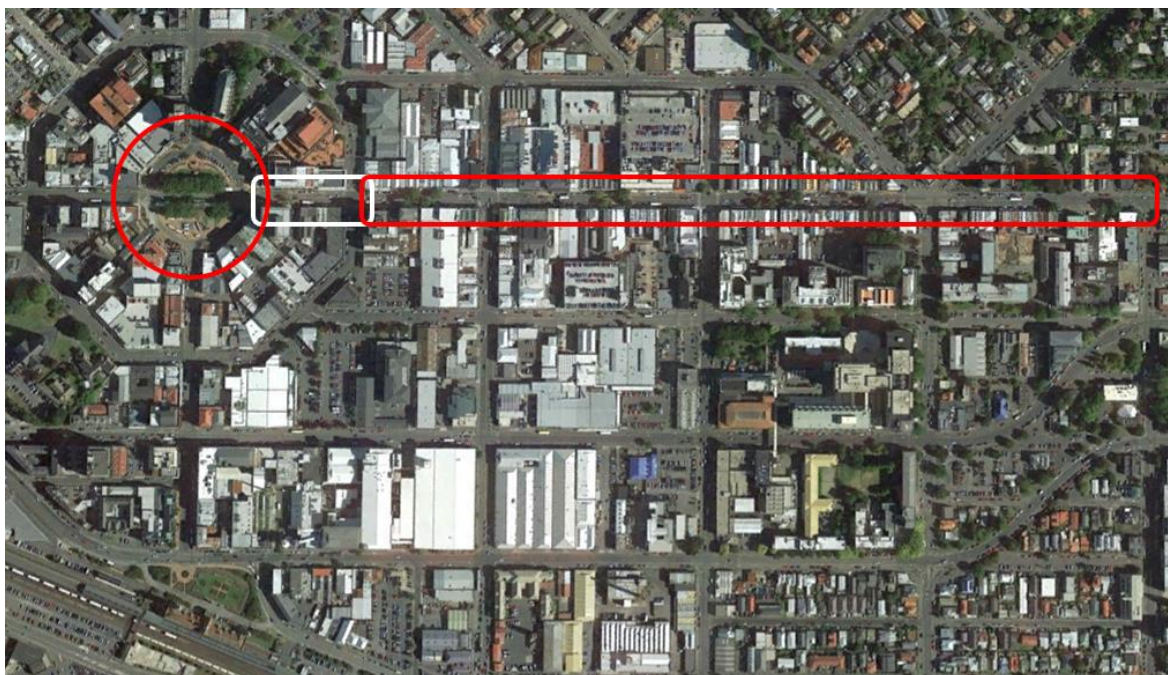
Strong representation was made for some form of public transport within George Street by advocates for the elderly, the disabled, families with small children and advocates for public transport in general. Provided there was some provision of public transport in the street, there was general acceptance of the redirection of the majority of the existing bus routes onto Great King Street.

## **6 ISSUES AND RECOMMENDATIONS**

### **Moray Place to the Octagon - the 'missing link'**

In considering the wider context, the review questioned the extent (or scope) of the George Street upgrade project and its relationship with the Octagon which is the iconic centrepiece of Dunedin City. These two entities are separated by a gap from Moray Place and the northern edge of the Octagon (see figure 4).





**Figure 4:** Moray Place to the Octagon indicated by the white rectangle.

A visual survey (see figure 5) suggests that both entities will be barely recognisable from either direction.



**Figure 5:** View from the Octagon (photo by the author and image from Google Street View).

It is suggested that continuity offered by extending the upgrade up to the Octagon will significantly improve the experience of the city centre as a whole for residents and visitors.

### Recommendations for the scope of the project

It is recommended that the scope of the project is extended from Moray Place to the Octagon along the following lines:

- The two-way function and kerb arrangement are maintained in order to retain movement flexibility through the transition period as the Hospital project evolves and for the Octagon should future changes occur.
- The public realm treatment could be similar to the proposed Knox Block design (see figure 6 below), while footpaths could be widened as appropriate.





**Figure 6:** Proposal for the Knox Block upgrade that could serve as a model for the Moray Place to Octagon link (Dunedin Retail Quarter Upgrade report - page 121).

## Movement versus Place

This project embodies tension between the need for the city to facilitate movement and its need to provide high-quality places.

### *Place*

It is clear from the earlier consultation and the review consultation, that there are high expectations of the public realm that is to result from this project. This is fully justified from an amenity perspective as well as it being a means to attract customers to businesses.

However, if the making of good places significantly overrides movement objectives, there is the risk that other legitimate objectives are comprised, such as personal safety, facilitating public transport and the viability of businesses. This may result in economic failure.

### *Movement*

There has been strong advocacy for retaining unfettered through-movement and undiminished carparking along the street. This is understandable from the perspective of business owners, advocates for public transport and those concerned about personal safety.

However, if the provision of vehicle movement overrides the place-making objectives, the benefits of attracting and engaging a range of users, including visitors and the young, and providing a platform for contemporary and cultural expression may never occur. This may result in stagnation and a lost opportunity.

### *Finding the balance*

This will require some trade-offs and a degree of ingenuity to ensure the social and economic gains are kept in balance. Of equal importance will be the need to build the flexibility to shift that balance as future conditions and aspirations unfold. Suggestions for consideration are offered below.

## Public Realm design

### *De-cluttering*

The combination of objectives identified by the review mitigate toward a greater proportion of open space which is free of obstructions, in order to:

- Allow for more flexibility for small spaces to be used in unpredicted ways in the future.
- Ensure the presence of the existing heritage buildings remains strong with a little less visual competition.
- Personal safety is not compromised by planting that obstructs view lines.

The proposed design suggests a significant number of rain gardens (see figure xx below), which puts a high demand on space. While it is recognised that addressing run-off water quality is an imperative, the techniques to achieve this are varied and may be a combination of rain gardens, tree pits as well as conventional downstream treatment. Providing water quality outcomes are not compromised, a reasonable reduction in rain gardens should be justified when set against other legitimate objectives.



**Figure 7:** The Farmers Block diagram with the author's circles overlaid (Dunedin Retail Quarter Upgrade report - page 101).

### *Heritage*

In addition to the abovementioned measure, it is acknowledged that a more detailed interpretation of heritage issues is to be addressed in the next design stage.

### Recommendations for the public realm design

1. Provide more flexible, obstruction free small open spaces.
2. Limit rain gardens to the minimum required to ensure functionality.

3. Consider the additional use of tree pits for run-off water treatment.
4. Avoid excessive eye-level planting that may reduce personal safety conditions.
5. Consider the interpretation of the heritage of George Street.

### On-street parking

The current proposal is supported by the following parking statistics which were provided to the reviewer:

- *City Central* has 13,000 off-street carparks with 2,600 available at peak time.
- *Retail Quarter* has 600 on-street carparks with 39 available at peak time. An additional 1,300 off-street carparks are located in public carparks and buildings with 190 available at peak time.
- *George Street* has 77 existing on-street carparks with 60 occupied at peak time. The 35 proposed result in a loss of 25 carparks at peak time.

Some of these statistics, especially the peak occupation numbers, were disputed by some submitters who claim 77 carparks are occupied at peak time, not 60. The implications are that:

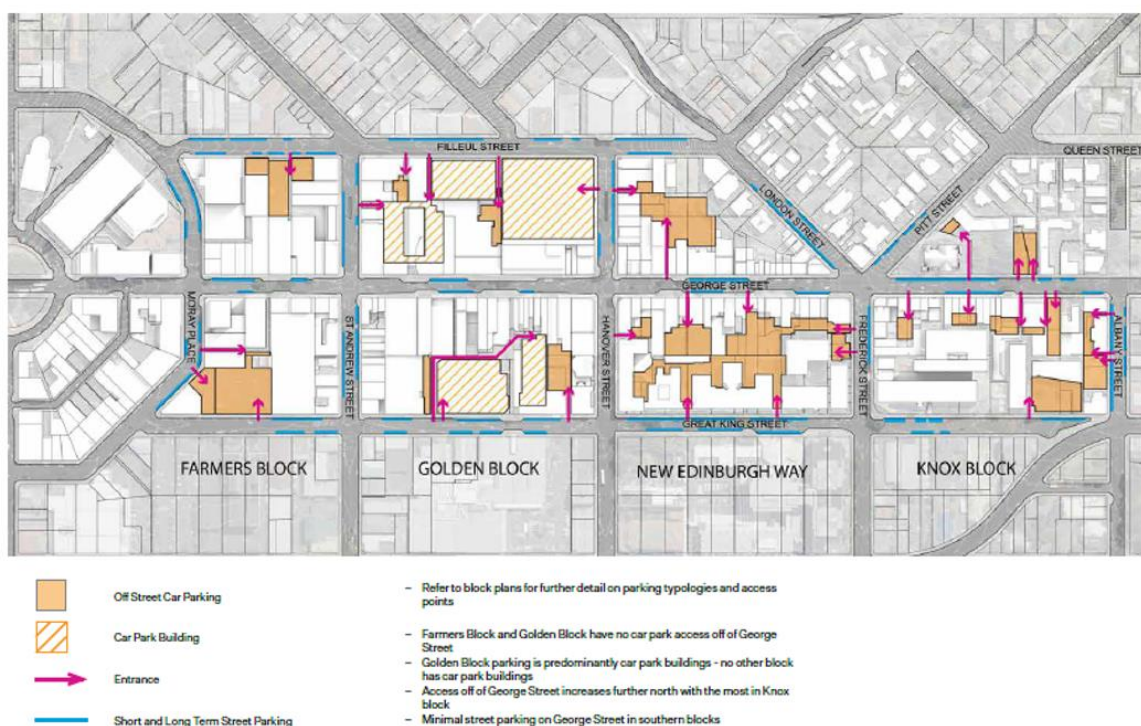
- The proposed 35 carparks translate into **58%** of a peak of 60 (if the statistics provided to the reviewer are accurate).
- The proposed 35 carparks translate into **48%** of a peak of 77 (if the submitters' statistics are accurate).

The reviewer had no means to verifying which assumptions are correct.

However as stated earlier, there will need to be trade-offs from all sides. Just as this review suggests that through-movement in the street provided (where the current proposal severs the corridor) at the expense of some of the place-making objectives, it is proposed that some reduction in parking be tolerated. It is proposed that the reduction in on-street parking be ameliorated to some degree by measures that make parking in the existing carparking buildings (see figure 8 below) more efficient and convenient.

In order to make progress, the review proposes the provision of 58% of 77, which translates into 45 carparks, as a working hypothesis to be verified.

## 8.5 Car Parking - Overall



**Figure 8:** Diagram indicating parking buildings near George Street(Dunedin Retail Quarter Upgrade report – page 164).

### Recommendations for on-street parking

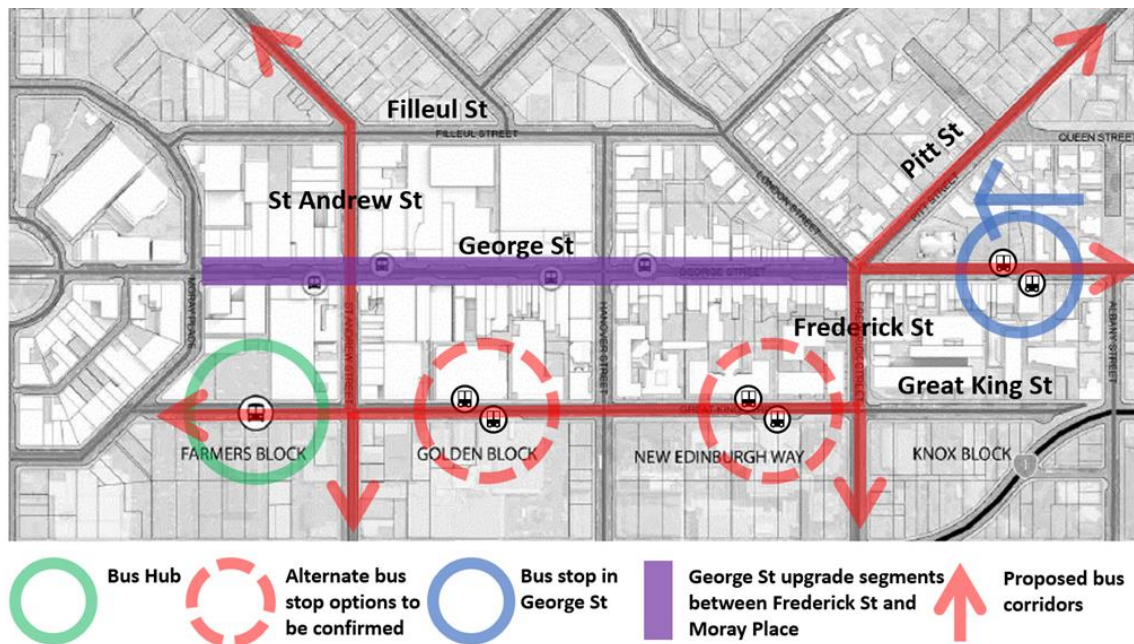
1. Design for 45 car parks as a working hypothesis to be verified during the developed design stage.
2. Consult with businesses block-by-block to establish an appropriate distribution of car parks.
3. Ensure general short-term car parks are predominantly P20 and P30.
4. Provide a parking signage and information system that identifies the nearest available off-street parking spaces.
5. Consider a right turn access into the Meridian carpark building.
6. Consider converting some leased parking to public parking (in DCC owned parking buildings - Great King Street and Wall Street).
7. Review surrounding parking restrictions to better meet demands and other strategic priorities.

### **Public Transport**

The current proposal removes all public transport from the corridor. Bus corridors are to be located on the adjacent streets as illustrated in figure 9 below. While the review consultation indicated general acceptance of the removal of the majority of the existing routes out of George Street (between Moray Place and Frederick Street) there was serious concern expressed at the lack of any public transport at all. This was particularly by representatives for the elderly, the disabled, families with small children, the youth, and advocates for public transport in general.

One measure that will help to a small degree is to locate the bus stops in the Knox Block (George Street between Frederick Street and Albany Street) as closer to Frederick Street, see the blue arrow and circle in figure 9.





**Figure 9:** Bus stop locations (the author's modifications over a base map from the Dunedin Retail Quarter Upgrade report).

#### *Bus routes favour two-way streets*

Technical discussions undertaken during the review established that should a bus route be provided in George Street that there would be a very strong preference for the street to be two-way. This is in order to ensure there is clarity for passengers knowing that they can depart from the area they arrived at.

#### *An electric bus along George Street*

Dunedin Council has expressed a strong aspiration to provide bus service that serves the city centre that has high sustainability credentials and runs on green or renewable energy such as electricity or possible hydrogen. Such a service would be tolerated in George Street and could provide social benefits discussed above.

If a stand-alone bus service is not contractually or economically viable, it could be that an existing route with a long reach, or coverage, can be converted into such a service. The St Clair to Normanby route may qualify in this regard.

The inclusion of a bus route through the corridor will impose additional space demands on the corridor if wider lane widths are required and bus bays are required. This will further diminish the amenity of an already contested public realm. The review suggest that the feasibility of using a smaller bus with a lessor lane width requirement is investigated. It is also proposed that buses stop in the lane to pick up passengers. This is an emerging common practice, especially for trams in Melbourne. It also has the effect of calming traffic.

#### Recommendations for public transport

1. Provide a bus service in George Street that:
  - Runs on green energy such as electricity or hydrogen, in line with Council objectives.
  - Is not too big, preferably smaller than current standard sizes, so that buses are less intrusive in the shared street context, possibly allowing for marginally narrower lane widths.

- Allows buses to stop in the lane to avoid bus indents that would take up large areas of valuable public space. This approach is common for trams in Melbourne where cars have to momentarily stop, which contributes to traffic calming.
2. Locate the bus stops in the Knox Block as close as practicable to Frederick Street.

### **George/Frederick Streets intersection**

During the review process the technical advice suggested that this intersection has a poor accident record, especially between vehicles and pedestrians. The proposed design removes the southbound lane entering George Street from this intersection.



**Figure 10:** Aerial photograph of the intersection at Frederick Street and George Street, north is to the right.



**Figure 11:** View from the corner of London Street and George Street looking North.

Should the outcome of this review result in a two-way condition in George Street, the safety conditions will need to be addressed through traffic management measures or by severing a traffic lane connection.

#### *Traffic management solutions are preferred*

Consideration at a high level indicates that all the options that sever a traffic lane have substantial negative consequences, which are discussed below. It is strongly urged that all traffic management options are explored and tested before such a radical step is taken. These may include:



- Raised pedestrian crossings (possibly Pitt and London Streets) to slow down incoming traffic and bring a greater awareness of crossing pedestrians.
- Kerb-buildouts.
- Banning some selected right-turns or removing the right-turn-only lanes.
- Minimising the green time given to a particular movement, especially if that movement could be reasonably accommodated by some of the adjacent streets.

*If severing a traffic lane is inevitable*

Should severing a lane be the only available option, a series of issues should be considered. The review received advice that removing a lane that is approaching the intersection would provide more advantages to the safety conditions at the intersection than a departing lane. All the directional options have consequences which will need to be investigated. A high-level appraisal suggests that severing the incoming lane at:

- George Street (south of Frederick) will severely limit the George Street upgrade options discussed in this report.
- George Street (north of Frederick) will deny major connections to the east and the west, and nullify the currently proposed bus route alignments.
- Frederick Street will deny major connections to the north and west, and nullify the currently proposed bus route alignments.
- Pitt Street will sever the Helensburgh bus route which has few alternatives (see figure 12).
- London Street will reduce access from the Stuart Street direction and diminish local circulation and the ability to for Filleul Street to absorb traffic displaced from George Street due to traffic congestion or if George Street is closed for events (see figure 13).

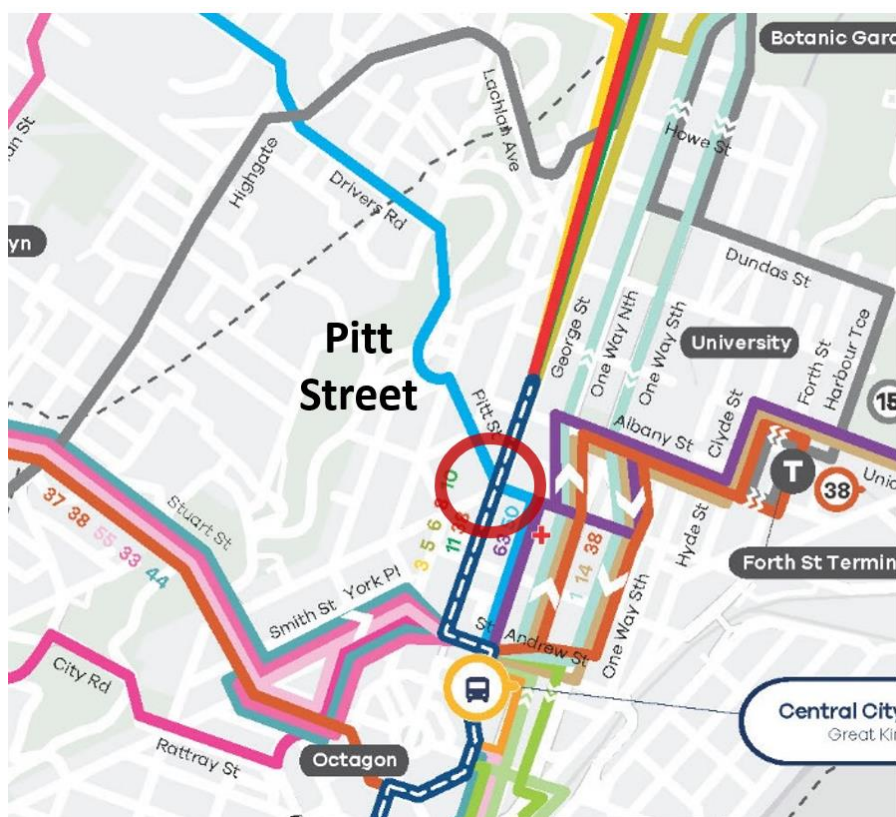
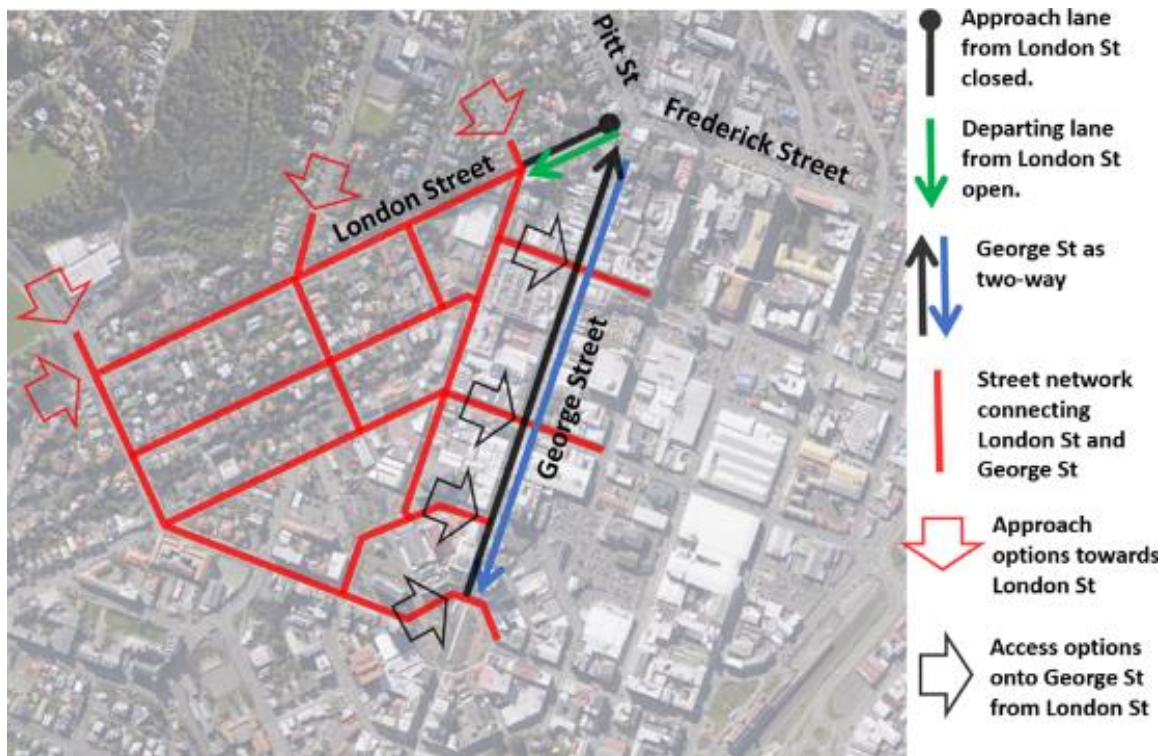


Figure 12: Dunedin Bus Map indicating Pitt Street and the Frederick/George Street intersection in red circle (author's text and symbol over the Orbus: Dunedin Bus Timetable map).



**Figure 13:** Network and access options if the approach lane from London Street were closed.

#### Recommendations for the George/Frederick Streets intersection

- A traffic management solution for the intersection's safety issues be favoured over the severance of a connecting traffic lane.

#### **Vehicular movement in George Street**

The current proposal (figure 14) has an arrangement of one-way streets between Moray Place and Frederick Street (with a small extent of two-way to facilitate property access in Edinburgh Way) that deny vehicles the option of moving through the corridor from end to end in either direction.



**Figure 14:** Diagram indicating proposed vehicle movement conditions, the red line indicates the point of severance that denies full through-movement between Moray Place and Frederick Street (the author's modifications over a base map from the Dunedin Retail Quarter Upgrade report).

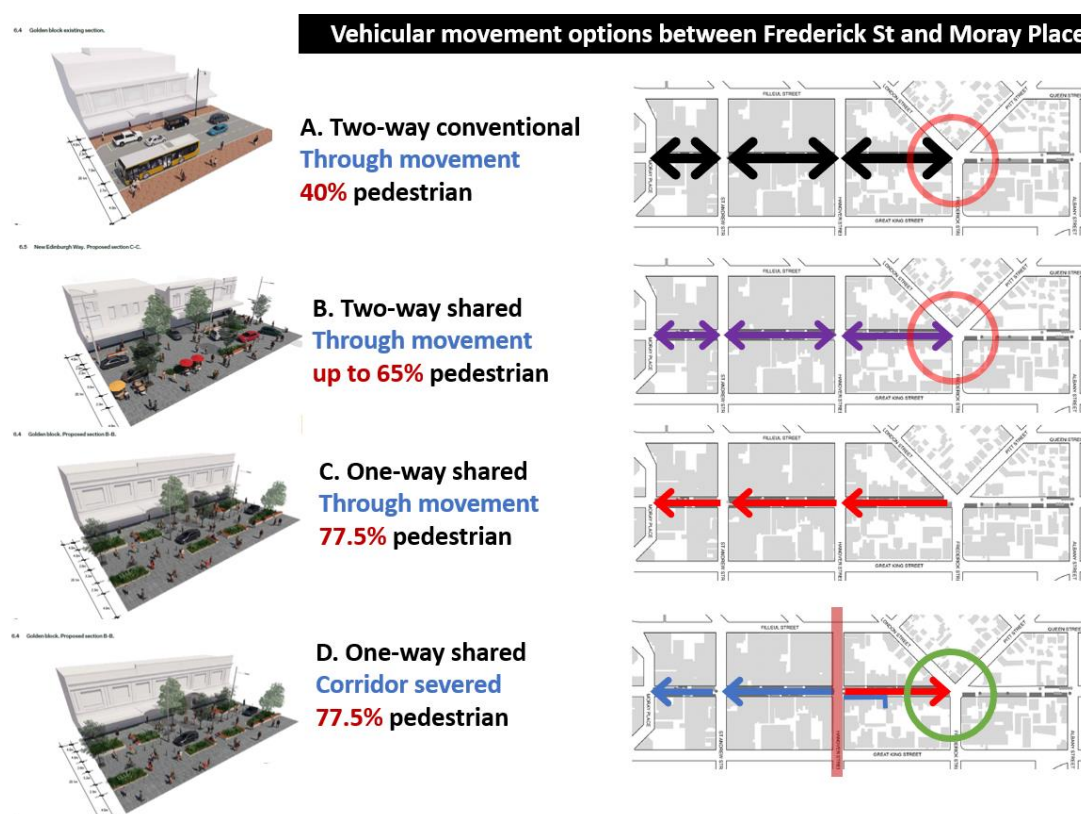
The inability to move through the corridor has raised the following concerns:

1. Effects on retail viability.
2. Safety outside business hours.

3. Inability to run small electric busses through the corridor.
4. Legibility for visitors from the region or tourists by car.
5. It is a high-risk strategy and failure could be damaging.

#### *Vehicular movement options between Frederick St and Moray Place*

During the review consultation, four (A to D) vehicular movement options were discussed (figure 15). Note that the one-way option (C) applies to a one-way in either direction. If a one-way option resulted, the direction would be determined in the next stage after a more detailed investigation.



**Figure 15:** Vehicular movement options between Frederick St and Moray Place - note that option C applies to one-ways in either direction (the author's text and symbols over diagrams from the Dunedin Retail Quarter Upgrade report).

#### *Preferred vehicular movement options B and C*

The review consultation effectively discounted Option A because it offered too few public space benefits, and Option D due to the consequences of the severance as discussed above. This leaves Options B and C for further consideration, as illustrated in figures 16 and 17 below.

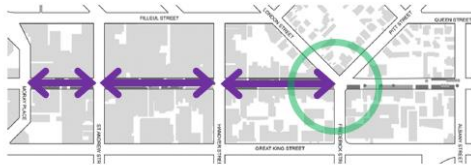
It is worth noting the following:

- The proportion of pedestrian area for the one-way option is 77.5%; for the two-way option this is 65%.
- Should a bus service require a wider lane, these numbers will change somewhat.
- While a two-way lane is bound to have more traffic, the traffic speeds may be lower.
- The shift from Option A (footpaths and traffic separated by kerb) to Option B (a shared street) will in itself be a significant improvement in pedestrian amenity.



## Option B. Two-way Shared Street WITH FLEXIBILITY TO CHANGE TO ONE-WAY

- Movement in both directions
- Up to 65% pedestrian area
- Electric bus possible
- Traffic management at Frederick St or deny London St ingress.



## Option C. One-way Shared Street WITH FLEXIBILITY TO CHANGE TO TWO-WAY

- Movement in one direction
- Up to 77.5% pedestrian area
- Electric bus not possible
- Full connection for London St at Frederick St.



**Figure 16:** Vehicular movement options B and C - note that option C applies to one-ways in either direction (the author's text and symbols over diagrams from the Dunedin Retail Quarter Upgrade report).

## B. Two-way Shared Street



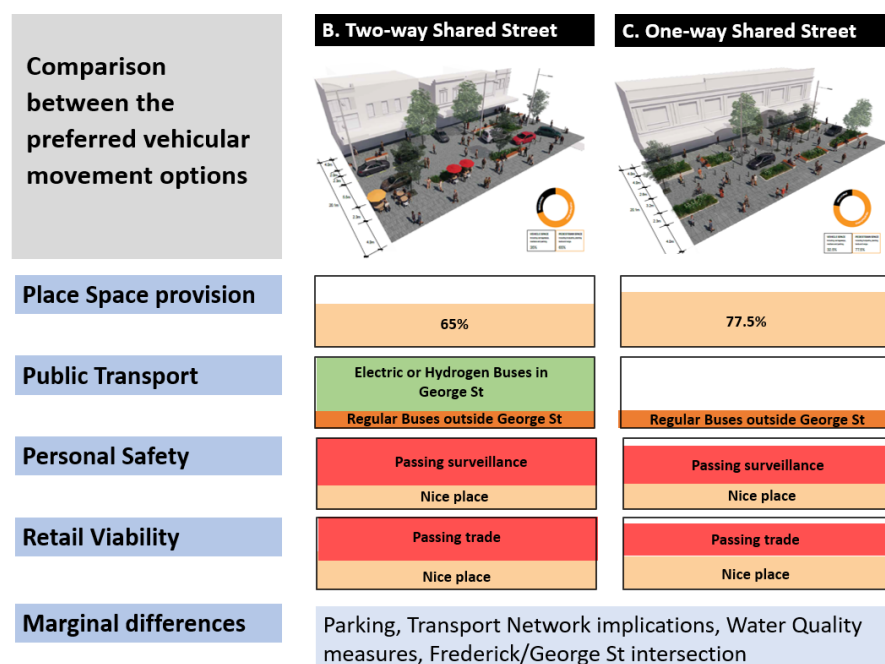
## C. One-way Shared Street



**Figure 17:** Vehicular movement options B and C (the author's text and symbols over diagrams from the Dunedin Retail Quarter Upgrade report).

### Evaluation of preferred vehicular movement options

While a formal evaluation was not conducted, the diagram below (figure 18) is an indication of the reviewer's sense of how options B and C compare on a selection of criteria. It should be noted that the criteria are not comprehensive, but those that the reviewer deemed most significant to the corridor in determining difference between the two options. There are no numeric values or weighting applied to the scoring. Dunedin Council engaged with the Central City Advisory Group to produce an evaluation of the same options (A to D) independently of this review.

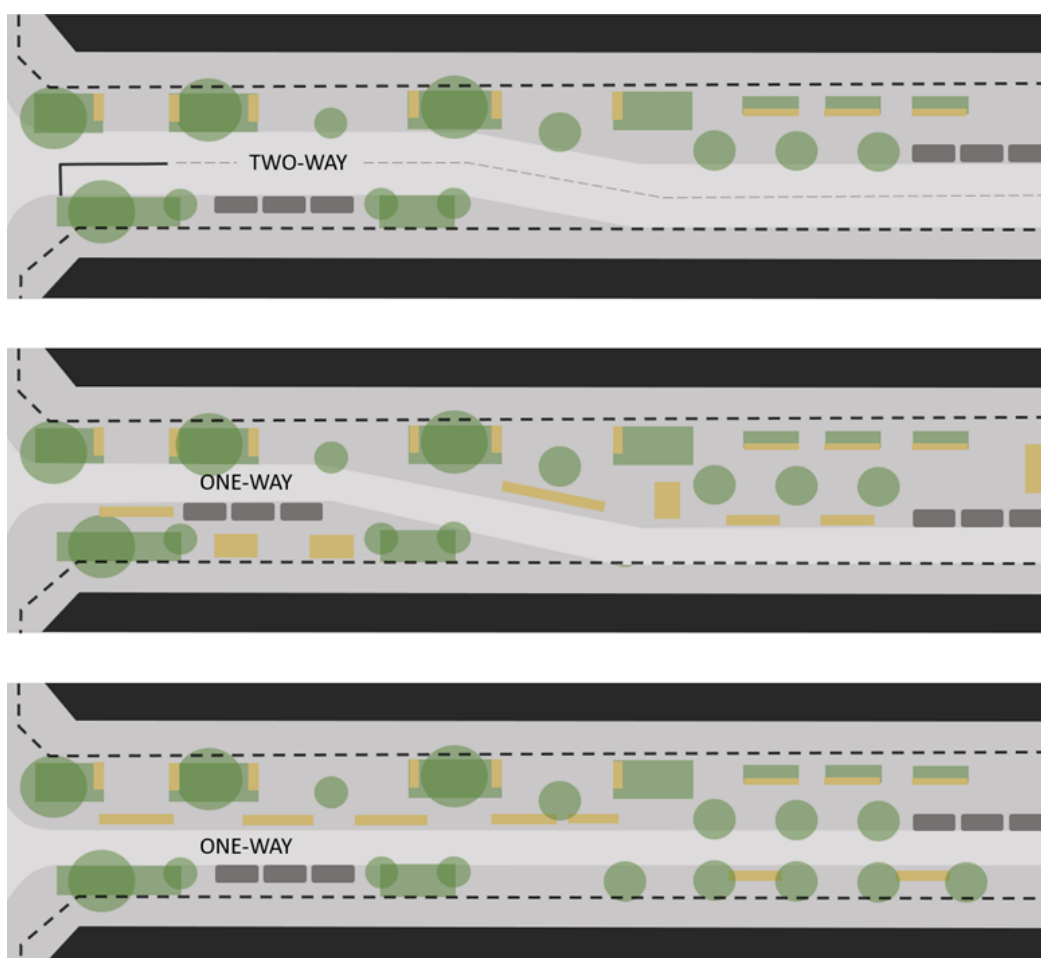


**Figure 18:** Comparison of vehicular movement options B and C (the author's text and symbols over diagrams from the Dunedin Retail Quarter Upgrade report).

The review concludes from this evaluation, and a range of interconnected factors, that a two-way shared street would be most preferable if an appropriate bus service was achievable in George Street. If not, the preference would be for a one-way shared street option, as this would improve pedestrian amenity and still making a reasonable contribution to personal safety and retail viability in George Street.

### **Design flexibility in George Street**

Both the two-way and one-way options should be conditional on the ability to adjust their configuration in the future, should circumstances demand a change. This is an imperative as technological, economic and social changes are highly likely and very difficult to predict. It will also allow future generations a degree of control without undue financial penalties. Technological changes may produce on-demand public transport which could readily function in a one-way system, or if inner city housing may achieve a level that negates the need for passing vehicles to ensure personal safety, and so on. For full flexibility, one-way should be able to convert to two-way and two-way should be able to convert to one-way.



**Figure 19:** Illustration of how, through the use of removable furniture, flexibility between two-way and one-way configurations can be achieved.

Figure 19 offers a hypothetical illustration of how a one-way and a two-way design can be interchangeable, in either direction. This will require that no permanent obstacles (such as trees or rain gardens) be located in an area that may be required for vehicle movement in the future.

### **Recommendations for design flexibility in George Street**

1. Design the upgrade so that it can convert from two-way to one-way or the other way round.



2. Do not place permanent obstacles such as trees or rain gardens in any area that may be required for vehicle movement at a future date.

## 7 DECISION PATHWAYS

### Two pathways

A fundamental early decision point entails whether or not to provide an *appropriate* bus service (as recommended under Public Transport in this report) through George Street. This will determine one or other of the following pathways:

- Pathway 1: Proceed with a two-way design which provides the ability to convert to a one-way design in the future.
- Pathway 2: proceed with a one-way design that can convert to a two-way design in the future.

#### Pathway 1: Two-way with public transport in George Street

This pathway involves a two-way design based on the assumption that an *appropriate* bus service can be delivered in George Street within a reasonable timeframe.

The following steps are proposed:

1. Investigate, in depth, whether safety conditions at the Frederick/George streets intersection can be met with traffic management techniques without loss of connecting vehicle lanes.
2. Should the aforementioned not be achievable, investigate the implications of severing an incoming lane from either London Street or Pitt Street.
3. Consider the other recommendations listed in this report.

#### Pathway 2: One-way without public transport in George Street

This pathway involves a two-way design based on the assumption that delivering public transport cannot be delivered in George Street within a reasonable timeframe.

The following steps are proposed:

1. Determine the one-way direction. If the difference in impact between the northbound and southbound is not significant, consider a northbound direction as it is favoured by the shop owners.
2. Consider additional traffic management improvements to the Frederick/George streets intersection.
3. Consider the other recommendations listed in this report.

## 8 CONCLUSIONS

Compared to the existing George Street conditions, either of the recommended options will provide a significant improvement and result in:

- An exciting, safe, and environmentally friendly destination.
- A viable precinct where retail, hospitality and commercial activities prosper.
- A place which celebrates all aspects of Dunedin's culture and identity.
- A street that provides the ability to respond to the future.