14.2 GEORGE STREET UPGRADE PROJECT – STATUS REPORT

REPORT AUTHOR: Chief Executive Officer
GENERAL MANAGER: Not Applicable
CONTACT NUMBER: 83664539
FILE REFERENCE:
ATTACHMENTS: A - K

PURPOSE OF REPORT

The purpose of this report is to provide a summary of the status of the George Street Upgrade Project, to ensure that Elected Members are appraised of the various Council decisions and the latest discussions with the Chapley Group.

Given that Mr Tsapaliaris (Director of the Chapley Group) has now engaged solicitors to act for him and given the discussion and strategy that has been pursued by the Chapley Group since Council staff commenced discussions with property owners regarding construction schedules, construction, sequencing, access and so on, it is most likely that this matter will proceed to litigation in some form. On this basis therefore, this report and attachments are provided to the Council with a recommendation that it be treated as a Confidential Item, thereby enacting the provisions of Section 90 of the *Local Government Act 1999*.

BACKGROUND

Essentially, the George Street Upgrade Project is part of The Parade Masterplan and is the first stage of the Masterplan's implementation. It is also being progressed as a demonstration to illustrate the quality and urban design features of the approved Masterplan which will be progressively "rolled out" as the Masterplan is implemented.

The Parade Masterplan was considered and endorsed by the Council at its meeting held on 15 May 2019.

A copy of the report that was presented and considered by the Council at the meeting held on 15 May 2019 is contained in **Attachment A**. Importantly, a plan of the George Street component of the Masterplan is contained in **Attachment B**.

As part of the 2020-2021 Budget, the Council allocated funds for both the design and construction of the George Street Upgrade Project.

Due to the legal proceedings that were initiated by Parkade Pty Ltd (the Chapley Group) and Australian Property Developments (owners and developers of the new Coles Development) regarding The Parade and George Street intersection (the pedestrian scramble crossing that was initiated by the Council and approved by the former Minister for Transport, Infrastructure & Local Government), commencement of work associated with the design and construction of the George Street Upgrade Project was held in abeyance and delayed until the conclusion of the legal proceedings.

The legal proceedings associated with the pedestrian scramble crossing and associated works was completed and finalised in September 2021, following which the scramble crossing and associated works were installed.

In April 2021, the Council commenced a two (2) stage procurement process to appoint consultants to prepare the detail design (ie. progress the concept design as approved by the Council to detailed construction documents) and construction documentation associated with the implementation of The Parade Masterplan and the George Street Upgrade Project.

At a Special Meeting held on 26 October 2021 the Council appointed a multi-disciplinary group of consultants, led by *Landskap* (landscape architects and urban designers) to undertake design development for The parade between Fullarton Road and Portrush Road and detailed design and construction documentation for George Street, between the intersection of The Parade and Webbe Street.

Preparation of the design documentation was subsequently progressed and at an Elected Members' Information Session held on 3 August 2022, Elected Members were provided with an update on the progress on the implementation of The Parade Masterplan and the George Street Upgrade Project. This update also included a briefing on the stormwater modelling that was undertaken as part of the detail design work and the measures that were identified to mitigate the risks associated with potential flooding.

The information that was provided at the Elected Members' Information Session held on 3 August 2022, was subsequently detailed in two (2) reports that were considered by the Council at its meeting held on 5 September 2022.

A copy of the report titled *"Implementation of The Parade Masterplan and George Street Upgrade Projects"* is contained in **Attachment C**.

Of particular interest, this report contained plans of the linemarking and associated work that were proposed to be undertaken essentially as a precursor to the works proposed as part of the George Street Upgrade Project and a plan showing the final design of the George Street Upgrade Project.

Following consideration of this report, the Council resolved the following:

1. *That the Council notes the status of the Implementation of The Parade Masterplan and the George Street Upgrade Projects as set out in this report and in the attachments to this report contained in Attachments A and B.*

2. *That the Council notes that the proposed George Street line marking improvements as illustrated in Attachment C will be implemented over the next couple of months.*

3. *That the Council notes that a report on the tenders for the George Street Upgrade Project will be presented to the Council for its consideration in early 2023.*

It should be noted that in terms of progressing the project as part of its resolution, the Council *"…….. noted that a report on the tenders for the George Street Upgrade Project" would be presented to the Council for its consideration in early 2023".*

This means that the Project was ostensibly approved to progress to the Tender stage and following this, to construction. However, given the ongoing discussions with the Chapley Group, this schedule has not been met.

At the same meeting held on 5 September 2022, the Council considered a report titled *"George Street and Harris Street Stormwater Drainage Improvements"*. A copy of this report is contained in **Attachment D**.

In simple terms, the *City-wide Floodplain Mapping Project* that was undertaken in 2019, identified that there are flood risks present in George Street, which is associated with the localised depression in the eastern side of George Street opposite Webbe Street. This flood risk was incorporated in the Council's *Long-Term Stormwater Drainage Plan (2018)* and works associated with remediating this issue were scheduled to be undertaken in 2032-2033.

Given that the George Street Upgrade Project was proceeding, staff identified and recommended that it was both financially prudent and responsible to bring the stormwater drainage works forward, complete these works prior to undertaking the streetscape works associated with the George Street Upgrade Project.

Following consideration of the report, the Council resolved the following:

1. *That the George Street and Harris Street Stormwater Drainage Improvement Project, as outlined in this report, be endorsed.*

2. *That $600,000 be redirected from the Trinity Valley Stormwater Upgrade Project to the delivery of the George Street and Harris Street Stormwater Drainage Improvement Project, to enable the Project to be constructed in 2022-2023.*

3. *That the Council notes that the George Street and Harris Street Stormwater Drainage Improvement Project will be delivered prior to the commencement of the George Street Upgrade Project.*

4. *That the Council delegates to the Chief Executive Officer the authority to award the tender for the George Street Harris Street Drainage Improvement Project during the Council's Caretaker Period, on the condition that the tender which is received does not exceed $600,000.*

5. *That the Mayor and Chief Executive Officer be authorised to sign and seal the documents associated with the awarding of the contract for the construction of the George Street and Harris Street Stormwater Drainage Improvement Project.*

6. *That the Council notes that should the tender for the George Street and Harris Street Stormwater Drainage Improvement Project exceed $600,000, the matter will be deferred for consideration by the Council, following the conclusion of the 2022 Local Government Election.*

It should be noted that $600,000 was allocated to undertaken the stormwater drainage works.

Given the complexity of both the George Street Upgrade Project and the George Street Stormwater Upgrade Project, staff proceeded to consult adjoining property owners in respect to the scheduling and sequencing of works to ensure that business operation is not unnecessarily impeded, including whether this would necessitate night works and road closures and so on – noting that these discussions were not about the design of the George Street Upgrade Project, as the concept and detail design of the Project had been approved and the Project was progressing to tender and construction stage.

Based upon these discussions, it was determined that construction of the stormwater drainage works would commence in February 2024 (to avoid the Christmas/New Year period and school holidays) and followed immediately by the streetscape upgrade works associated with the George Street Upgrade Project.

Whilst other property owners were/are satisfied, the Chapley Group sought to again re-visit the design of the Project, notwithstanding that consultation on the Masterplan which included George Street had been undertaken and that the final design reflected the concept design that was approved by the Council at its meeting held on 5 September 2022. This culminated in a request from the Chapley Group to meet with Mayor Bria and the Chief Executive Officer.

At this meeting, general discussion took place regarding George Street and it was stated and acknowledged that the design of the Project was finalised, however, Mr Tsapaliaris sought a commitment from Mayor Bria and the Chief Executive Officer, to review a plan which he commissioned and submitted at the meeting, which sought to ostensibly provide for two (2) vehicular lanes from The Parade to Webbe Street. Without making a commitment to make any changes to the approved design, Mayor Bria and the Chief Executive Officer advised Mr Tsapaliaris that the proposal which he submitted would be reviewed.

A copy of the proposal is contained in **Attachment E**.

Given that this proposal was also based on traffic data that was also commissioned by Mr Tsapaliaris, a subsequent meeting was held with Mayor Bria and the Chief Executive Officer. The meeting was attended by Mr Tsapaliaris and his traffic consultant.

A copy of the report (excluding attachments) prepared by Cirqa and submitted at the meeting is contained in **Attachment F**.

At that meeting, a general discussion ensued, including an acknowledgement that the main cause of Mr Tsapaliaris' concern could be better addressed through changes to the sequencing of the traffic signals at the corner of George Street and The Parade.

In this respect, it should be noted that this issue has always been a concern, even when the pedestrian scramble crossing was being negotiated with the Department of Transport.

To re-address this situation, it was suggested that Mr Tsapaliaris join the Council and meet with the Minister for Transport & Infrastructure to advocate for more "green time" for George Street traffic. This suggestion was not endorsed by Mr Tsapaliaris.

Again, at the conclusion of that meeting, Mr Tsapaliaris was advised and provided with an undertaking, that both the design changes which he was seeking and the traffic data would be reviewed and that a response would be provided to him.

To ensure that the review that would be undertaken was thorough, particularly given the potential prospects of litigation, Council staff engaged consultants to review both the proposed design and the traffic data submitted by Mr Tsapaliaris. This review has been completed and a meeting is in the process of being arranged with Mr Tsapaliaris.

Following a number of attempts, a meeting was confirmed this week and will take place on 7 December 2023.

At the meeting, Mr Tsapaliaris will be presented with the results of the review and all of the relevant documents, including the reports that have been prepared by the Council's consultants.

Based on the review which has been undertaken, some modifications have been made to the Council endorsed design.

A copy of the review of the streetscape design as submitted by Mr Tsapaliaris that has been undertaken by *Landskap* is contained in **Attachment G**.

A copy of the review of the traffic data that has been submitted by Mr Tsapaliaris, has been undertaken by the Council's traffic consultants, Be Engineering Solutions, is contained in **Attachment H**.

A copy of these documents is proposed to be provided to Mr Tsapaliaris at the meeting scheduled for 7 December 2023.

In addition, a draft of a letter that contains a summary of the reviews that have been undertaken is contained in **Attachment I**. This letter will be provided to Mr Tsapaliaris at the meeting to be held on 7 December 2023.

In summary, the endorsed design has been modified to reflect the recommendations that have been made by the Council's consultants following a review of the proposals that have been submitted by Mr Tsapaliaris. A copy of the modified design is contained in **Attachment J**.

Notwithstanding this, whilst Mr Tsapaliaris is not aware of the Council's response (as the meeting has not yet taken place), based upon the discussions to date, it is most unlikely that Mr Tsapaliaris will be satisfied with the amened design – albeit that this is speculation at this stage.

Notwithstanding the undertaking and commitment that has been provided to Mr Tsapaliaris that his submissions would be reviewed and a response provided, by email dated 23 November 2023, Mr Tsapaliaris sought approval to make a Deputation to the Council at its meeting held on 4 December 2023 (this meeting). This request has been approved. A copy of this email and attached letter was also sent to Elected Members.

Following this request, on 24 November 2023, a letter was received from Botten Levinson (Solicitors) acting for Mr Tsapaliaris. A copy of this letter is contained in **Attachment K**.

Following this, by email dated 29 November 2023, Mr Tsapaliaris sought approval for Mr Levinson of Botten Levinson to join him in making his Deputation. Approval for Mr Levinson to attend has also been approved.

RECOMMENDATION 1

That pursuant to Section 90(2) and (3) of *the Local Government Act 1999* the Council orders that the public, with the exception of the Council staff present, be excluded from the meeting on the basis that the Council will receive, discuss and consider:

(i) information relating to litigation that the Council believes on reasonable grounds will take place, involving the Council.

and the Council is satisfied that, the principle that the meeting should be conducted in a place open to the public, has been outweighed by the need to keep the receipt/discussion/consideration of the information confidential.

RECOMMENDATION 2

That the report be received and noted.

RECOMMENDATION 3

Under Section 91(7) and (9) of the *Local Government Act 1999* the Council orders that the report, discussion and minutes be kept confidential for a period not exceeding 12 months, after which time the order will be reviewed.

Cr Holfeld declared a conflict of interest in this matter, as he is closely associated with the owner of a business that has been engaged by Mr Tsapaliaris and the Chapley family to undertake work in respect to the matter and left the meeting at 8.52pm.

Cr Callisto declared a perceived conflict of interest in this matter as one of his family members is married to a member of the Chapley family. Cr Callisto advised that he would remain in the meeting and take part in the discussion regarding this matter.

Cr Robinson moved:

That pursuant to Section 90(2) and (3) of the Local Government Act 1999 the Council orders that the public, with the exception of the Council staff present [Chief Executive Officer; General Manager, Governance & Civic Affairs; General Manager, Urban Planning & Environment; General Manager, Infrastructure & Major Projects; Project Manager, City Projects; Executive Assistant, Chief Executive's Office and Administration Assistant, Governance & Civic Affairs], be excluded from the meeting on the basis that the Council will receive, discuss and consider:

(i) information relating to litigation that the Council believes on reasonable grounds will take place, involving the Council.

and the Council is satisfied that, the principle that the meeting should be conducted in a place open to the public, has been outweighed by the need to keep the receipt/discussion/consideration of the information confidential.

Seconded by Cr Knoblauch and carried unanimously.

Cr Sims left the meeting at 9.21pm.

Cr Piggott moved:

That the report be received and noted.

Seconded by Cr Duke and carried unanimously.

Cr Clutterham moved:

Under Section 91(7) and (9) of the Local Government Act 1999 the Council orders that the report, discussion and minutes be kept confidential for a period not exceeding 12 months, after which time the order will be reviewed.

Seconded by Cr Callisto and carried unanimously.

Cr Sims returned to the meeting at 9.28pm.
Cr Holfeld returned to the meeting at 9.28pm.

Attachment A

Confidential

George Street Upgrade Project
Status Report

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2.1 THE PARADE MASTERPLAN

REPORT AUTHOR: Manager, Economic Development & Strategic Projects
GENERAL MANAGER: Chief Executive Officer
CONTACT NUMBER: 8366 4509
FILE REFERENCE: S/3309 S/05268
ATTACHMENTS: A - F

PURPOSE OF REPORT

The purpose of this report is to advise the Council of the outcome of the review of the various traffic and design issues proposed in the final draft of The Parade Masterplan, and to present the final draft Masterplan to the Council for its consideration and endorsement.

BACKGROUND

At a Special Meeting held on 12 September 2018, the Council considered the final draft Masterplan for The Parade as well as the results of the Phase 3 Community Consultation and Engagement process. Following consideration of the matter the Council resolved the following:

1. *That consideration of this matter be deferred until a report is received from Council's traffic consultant on the traffic matters contained in The Parade Masterplan.*

2. *That the report requested in Part 1 above, provide particular consideration of the following:*

    - *right hand turn lanes into George Street from The Parade;*
    - *the implications of introducing bicycle lanes between Osmond Terrace and Portrush Road; and*
    - *the treatment of the footpath crossovers at the intersections of the side streets and The Parade.*

In response to the Council's resolution, Tonkin Consulting was engaged to undertake a review of the traffic matters contained in the draft Masterplan. In particular, Tonkin Consulting was requested to investigate and provide advice on the following:

- the '*scramble crossing'* at The Parade/ George Street intersection;
- right turn lanes on The Parade at the George St intersection;
- implications of introducing bicycle lanes on The Parade between Osmond Terrace and Portrush Road;
- implications of formalising the traffic movements on George St; and
- use of continuous footpaths on the side streets.

Tonkin Consulting's scope of work also included a review of the Parkade submission received as part of the Phase 3 consultation process, as well as some of the issues raised in the correspondence received from Mr Rino Pancione of LJ Hooker St Peters, in February 2019, namely the right turn lanes into George Street from The Parade, the narrowing of George Street and the removal of carparking between George Street and Edward Street. A copy of the Parkade Phase 3 submission is contained in **Attachment A.**

A copy of the Traffic Review undertaken by Tonkin Consulting is contained in **Attachment B**.

The development of The Parade Masterplan has been undertaken in three (3) Phases, Phase 1 - Initial Comments, Phase 2 - Concept Development and Phase 3 - Draft Masterplan. Outlined below is an overview of the various stages in the development of The Parade Masterplan.

Results of Phase 1 Consultation – Initial Comments
As the first step in the process of developing The Parade Masterplan, the Council undertook consultation with the community and key stakeholders, including students from six (6) schools within the City, to capture ideas for The Parade, specifically:

- What do you love most about The Parade?
- What would you change about The Parade to make it better?
- What would you add to The Parade to improve it?

The Council commenced the first stage of community engagement on The Parade Masterplan on 21 January 2016, at the *Tour Down Under Street Party* event. The formal consultation period concluded on 19 February 2016.

During this phase of consultation, there were over 800 visits to the Council's project website and 275 written submissions were received. A summary of the information which was collected and the results of the Phase 1 Community Consultation and Engagement were presented to the Council for its consideration at its Special Meeting held on 22 May 2018. The results of this phase of consultation formed the basis for the draft Concepts which were released for consultation as part of the Phase 2 Community Consultation and Engagement process.

Phase 2 – Draft Concept Development
The key objective of the Phase 2 Community Consultation and Engagement was to identify at a 'conceptual level', the proposed key changes that could be incorporated into The Parade Masterplan to enhance and deliver a mainstreet which meets the contemporary needs of the community and continues to stand the test of time. In short, to ensure that The Parade remains contemporary.

The draft concepts which were developed were based on the information which was collected and the comments which were received from the community, businesses and key stakeholders, through the initial consultation undertaken as part of Phase 1 of the masterplanning process.

The intent of the second round of consultation (Phase 2) was to test some of the ideas and concepts that were being considered and enable these ideas and concepts to be developed further. The main concepts that were "tested' with the community included the treatment of the intersections along The Parade (i.e. Queen Street, George Street, Edward Street, Elizabeth Street, Charles Street etc.), the proposed modifications to George Street between The Parade and Webbe Street and the proposed changes to part of the median strip (namely the intersections of The Parade and Ravenswood Avenue, Sydenham Road, Church Avenue, Margaret Street and Cairns Street) as well as the broader changes proposed for the full length of The Parade (i.e. widening of footpaths).

In total, 146 submissions were received during the Phase 2 Community Consultation and Engagement process, comprising of 126 survey responses, with the remaining twenty (20) submissions being lodged as individual written submissions. The results of this phase of consultation were presented to the Council at its Special Council Meeting held on 17 July 2018.

At the Special Meeting held on 17 July 2018, the Council endorsed the release of the draft Masterplan for community consultation and engagement, subject to the following amendments:

- the removal of the possible future signalised crossing at the intersection of The Parade and Edward Street;
- reinforcing within the draft Masterplan, the Council's commitment to investigate additional parking opportunities within The Parade precinct;
- reinforcing within the draft Masterplan, the intent to undertake traffic modelling of the preferred options; and
- retention of the existing left turn slip lane at the intersection of The Parade and Portrush Road (heading east along The Parade and then turning north onto Portrush Road).

Phase 3 – Draft Masterplan

The key objective of the third and final phase (Phase 3) of the community consultation and engagement process, was to present the community and stakeholders with the draft Masterplan (specifically the Plan and report) which has been developed based on the comments received from the community, businesses and key stakeholders, through the previous consultation undertaken as part of Phase 1 and Phase 2 of the masterplanning process.

More specifically, the Phase 3 Community Consultation and Engagement process provided the community and stakeholders with the opportunity to comment on the proposed strategic directions for The Parade, as well as all of the individual concepts, including the proposed treatment of the various intersections, changes to The Parade central median, widening of the footpaths along The Parade, modification to The Parade 'Heart', including the removal of on-street carparking spaces between George Street and Edward Street and the proposed option for George Street.

As part of Phase 3 of the Project, The Parade Draft Masterplan document was placed on consultation for a period of twenty-four (24) days, commencing on Wednesday 25 July 2018 and concluding on Friday 17 August 2018. The Phase 3 consultation was the third and final phase of community consultation and engagement on The Parade Masterplan Project.

In accordance with the Council's resolution made at its Special Meeting held on 17 July 2018, a letter advising of the proposal to alter the intersections along The Parade at the five (5) nominated side streets and specifically to prevent right-hand turns into these streets and right hand turns from these streets onto The Parade by extending the central median strip, was distributed to all residents, business owners and property owners located in the five (5) affected streets adjoining The Parade (namely Ravenswood Avenue, Sydenham Road, Church Avenue, Margaret Street and Cairns Street). Letters were also distributed to residents of adjoining streets that were likely to be affected by the proposed changes.

As part of the Phase 3 Community Consultation and Engagement process, Council staff also met with the Department of Planning, Transport and Infrastructure (DPTI) staff to discuss the proposed changes to The Parade. In this respect, it must be noted that The Parade is an arterial road which is under the care and control of DPTI.

In total, 159 submissions were received, comprising of sixty-eight (68) submissions being lodged as formal written submissions and the remaining ninety-one (91) being submitted as responses to a survey that was distributed by a group referred to as 'Norwood Parade Traders'. The origin and composition of the 'Norwood Parade Traders' is unknown, as the material did not contain their details. Of the sixty-eight (68) written submissions which were received, thirteen (13) were submitted by business owners or business managers, several of whom are also residents of the City.

The comments which were received through Phase 3 of Community Consultation and Engagement process were reviewed and were used to inform the draft Masterplan that was presented to the Council at its Special Meeting held on 12 September 2018. The results of the Traffic Review which has been undertaken by Tonkin Consulting have been reviewed and have informed the final draft Masterplan contained in **Attachment C**, which is being presented as part of this report for the Council's consideration and endorsement.

The objective of preparing The Parade Masterplan is to put in place a long term strategic framework for the planning, redevelopment and activation of The Parade, which will inform the progressive enhancement of the infrastructure, encourage new investment and maximise community enjoyment and appeal of The Parade.

It should be noted that the results of the three (3) Phases of Community Consultation and Engagement were used, amongst other things, to identify the identity and appeal of The Parade and determine how this significant economic, social and cultural asset could continue to contribute to the experience of those people who choose to live, work and play on The Parade and the surrounding residential areas, as well as determine the contribution that The Parade makes to the City of Norwood Payneham & St Peters and the eastern metropolitan region, generally. The Phase 3 component of the community consultation and engagement process sought to bring together all of the comments which were received through the first two (2) phases of consultation, and present a draft Masterplan for comment and review.

The final draft Masterplan (a copy of which is contained in **Attachment C**) retains the three (3) distinct zones along The Parade, namely The Parade West, The Parade 'Heart' and The Parade East. These zones are based on the concentration of existing and future land uses and the density and intensity of these uses. It also takes into consideration the future needs of these land uses and those of the users.

RELEVANT STRATEGIC DIRECTIONS & POLICIES

CityPlan 2030: Update 2017
The Parade Masterplan seeks to implement the Council's strategic vision set out in *CityPlan 2030*: *Shaping Our Future* and its commitment to its primary objective of community well-being. The holistic approach reflects the strategic importance of the Masterplan in achieving meaningful change. The relevant Outcomes, Objectives and Strategies of the Plan are outlined below:

Outcome 1 Social Equity
A connected, accessible and pedestrian-friendly community.

Objective 1.1: Convenient and accessible services, information and facilities.
Strategy 1.3: Design and provide safe, high quality facilities and spaces for people of all backgrounds, ages and abilities.

Objective 1.2: A people-friendly, integrated, sustainable and active transport and pedestrian network.
Strategy 2.2: Provide safe and accessible movement for people of all abilities.

Objective 1.3: An engaged and participating community.
Strategy 3.3: Provide opportunities for community input in decision-making and program development.

Outcome 2 Cultural Vitality
A culturally rich and diverse City, with a strong identity, history and 'sense of place'.

Objective 2.1 An artistic, creative, cultural and visually interesting City

Objective 2.2 A community embracing and celebrating its social and cultural diversity.

Objective 2.3 A City which values and promotes its rich cultural and built heritage.
Strategy 3.1 Protect and enhance places, streetscapes, precincts and landmarks which reflect the built and cultural history of our City.

Objective 2.4 Pleasant, well designed, sustainable urban environments.
Strategy 4.2 Encourage sustainable and quality urban design outcomes.
Strategy 4.3 Maximise the extent of green landscaping provide in new development and in the public realm.

Objective 2.5 Dynamic community life in public spaces and precincts.
Strategy 5.2: Create and provide interesting and colourful public spaces to encourage interaction and gatherings.

Outcome 3 Economic Prosperity
A dynamic and thriving centre for business and services.

Objective 3.2 Cosmopolitan business precincts contributing to the prosperity of the City.

Objective 3.5 A local economy supporting and supported by its community.
Strategy 5.2 Support opportunities for people to collaborate and interact in business precincts.

Outcome 4 Environmental Sustainability
A leader in environmental sustainability

Objective 4.1 Sustainable and efficient management of water, waste, energy and other resources.

Objective 4.3 Sustainable and attractive streetscapes and open spaces.
Strategy 3.1: Improve the amenity and safety of streetscapes for pedestrians and cyclists, including provision for shade in summer.
Strategy 3.2 Protect, enhance and expand public open space

City-Wide Cycling Plan 2013
The Parade Masterplan also aligns with the directions contained in the Council's 2013 *City-Wide Cycling Plan*, which seeks as an objective to increase overall cycling rates within the City, resulting in health, environmental, economic and social benefits for the community by creating more connected and liveable neighbourhoods.

The Cycling Plan identifies the existing bicycle infrastructure within the City and sets out the future cycling network and infrastructure that could be provided to improve cycling connections across the City. In respect to The Parade Masterplan, the following roads have been identified in the *Cycling Plan* for the upgrading of the City's bicycle network:

- The Parade (between Osmond Terrace and Portrush Road) – the inclusion of bicycle lanes;
- Beulah Road – the establishment of a Bicycle Boulevard with specific cycling treatments. The next phase of construction includes an elevated Wombat Crossing adjacent Norwood Primary School, which is scheduled for delivery in July 2019, with final design drawings for the remainder of the project being finalised;
- Osmond Terrace – enhancement of the existing bicycle lanes; and
- new or upgraded road crossings on The Parade, at Fullarton Road, Sydenham Road, Edward Street and Portrush Road.

One of the recommendations contained in the *Cycling Plan* is to upgrade and make improvements in a staged approach, due to the high cost of establishing this infrastructure. Accordingly, the *Cycling Plan* contains an Infrastructure Priority Action Plan, which identifies the upgrades (listed above) to the cycling infrastructure on The Parade as a 'high' priority action that should be undertaken first. Where appropriate these actions have been incorporated into The Parade Masterplan, whilst also balancing all other competing factors.

It should be noted that recently, the Council undertook some line-marking works along George Street (southern side) and Sydenham Road, and utilised this opportunity to introduce bicycle sharrow markings as the existing bicycle lanes in these streets no longer meet the current Australian Standards.

FINANCIAL AND BUDGET IMPLICATIONS

The Council has allocated a total of $100,000 towards the preparation of The Parade Masterplan. To assist with funding of the Project an application for an additional $100,000 was sought and successfully granted to the Council through the Department of Planning, Transport and Infrastructure, Places for People Grant Funding program, resulting in a total budget of $200,000 for the delivery of The Parade Masterplan Project.

The $200,000 Budget allocation comprises of an allocated Consultancy Budget of $140,000 for the preparation of The Parade Masterplan, which includes the engagement of Oxigen Landscape Architects to manage the preparation of the Masterplan. The remaining $60,000 has been allocated to the various stages of community consultation and engagement.

EXTERNAL ECONOMIC IMPLICATIONS

There are direct external economic implications, however a significant investment from the Council in the public realm will over time more than likely attract a significant amount of private investment. It will also ensure that The Parade remains contemporary from an infrastructure perspective.

SOCIAL ISSUES

When endorsed, the Masterplan will provide a framework that recognises The Parade as a pedestrian friendly mainstreet, which prioritises pedestrian and bicycle access and circulation, as well public transport opportunities. In conjunction with the long term delivery of higher density development, the Masterplan will provide the framework for a public realm asset that aims to lessen the long term reliance on the motor vehicle.

CULTURAL ISSUES

The Parade Masterplan builds on the existing identity of The Parade, and ensures that its 'sense of place' is managed and appropriately and sensitively enhanced. The community engagement as part of Phase 1 focussed on identifying the specific cultural elements, which are valued by the community. Some of the comments received during the three (3) community consultation processes again reiterated the value that the community places on the heritage along The Parade, with comments in support of the direction that the Council has taken in the Masterplan, in regard to the retention and contribution of heritage.

The draft Masterplan (contained in **Attachment C**) articulates a unique main street identity for The Parade, distinct from other main streets, which builds on the qualities that people value about The Parade, including its well-recognised cosmopolitan culture, its heritage and social and cultural history.

ENVIRONMENTAL ISSUES

The Parade Masterplan incorporates environmental sustainability as an integral component to the future of The Parade. Climate change adaptation and resilience has been integrated into the streetscape design. It is envisaged that these strategies and actions will provide The Parade with a long term competitive advantage, ensuring a greener identity, improved pedestrian comfort and greater protection of local businesses, buildings and infrastructure.

RESOURCE ISSUES

The preparation of The Parade Masterplan is being undertaken by a multi-disciplinary Consultancy Team lead by Oxigen Landscape Architects. The Manager, Economic Development & Strategic Projects is responsible for the management of The Parade Masterplan Project and is the primary point of contact for all communications.

RISK MANAGEMENT

The Project has taken into consideration the identification, resolution and management of all risk management issues as required by the relevant legislation and Council policies.

CONSULTATION

- **Elected Members**
  A total of six (6) Elected Member Information Briefings and Workshops have been held throughout the preparation of the Masterplan.

  The first Workshop with Elected Members was held on Tuesday 20 October 2015. This Workshop included a brief overview of the Project followed by a site visit. The most recent Information Session was held on Wednesday 8 May 2019, where Elected Members were provided with an overview of the draft Masterplan and were informed of the results of the traffic investigations.

  The Council formally considered the results of the Phase 1 Community Consultation and Engagement at its meeting held on 22 May 2018, the results of the Phase 2 Community Consultation and Engagement at its Special Meeting held on 17 July 2018 and the results of the Phase 3 Community Consultation and Engagement at its Special Meeting held on 12 September 2018.

- **Community**
  The Community has been consulted and engaged through the Phase 1, Phase 2 and Phase 3 Community Consultation and Engagement process. The various comments which have been received have been taken into consideration in the development of the draft Concept Plans, the draft Masterplan, and the final draft Masterplan.

  The results of the Phase 3 Community Consultation and Engagement process were presented to the Council at its Special Meeting held on 12 September 2018.

- **Staff**
  The Manager, Economic Development & Strategic Projects has been responsible for the ongoing management and delivery of the Masterplan Project.

  A Staff Project Management Group has been established to ensure that all of the relevant issues are addressed.

- **Other Agencies**
  The Department of Planning, Transport and Infrastructure (DPTI) has been involved as part of the Project Management Group, in accordance with the Grant Deed and in relation to the traffic related matters.

  As part of the Phase 1 and Phase 3 consultation and engagement stages, the Project Team consulted with DPTI on the current traffic issues associated with The Parade. The comments received from the Department are outlined in this report.

DISCUSSION

Traffic and Design Issues
The Council engaged Tonkin Consulting to review the traffic matters associated with The Parade Masterplan with a focus on the following elements:

- the introduction of a *'scramble crossing*' at the intersection of The Parade and George Street;
- the introduction of right turn lanes on The Parade at the George Street intersection;
- the implications of introducing bicycle lanes between Osmond Terrace and Portrush Road;
- the implications of formalising the traffic movements on George Street;
- the use of continuous footpaths crossing the side streets (identified as footpath crossovers in the Draft Masterplan); and
- a review of the matters which have been outlined in the letter from the Parkade Pty Ltd dated 17 August 2018, which was submitted as part of the Phase 3 consultation and engagement on The Draft Parade Masterplan.

As part of this review, Tonkin developed a traffic model to assess design considerations for the intersection of The Parade and George Street in isolation to the remainder of the local road network using SIDRA, which is software used as an aid for design and evaluation of individual intersections and networks of intersections. A concept design and construction cost estimate was also produced with the aim of installing a '*scramble crossing'* at the intersection of The Parade and George Street in the short term, prior to the implementation of the Masterplan.

Notwithstanding the traffic review that has been undertaken by Tonkin, it is proposed that the Council will undertake network wide traffic investigations and analysis as part of the detail design stage of the Project.

Department of Planning, Transport and Infrastructure (DPTI)
Council Staff have worked closely with DPTI to determine the best outcomes for The Parade, particularly in relation to the *'scramble crossing'* and the proposed changes to George Street. The feedback and recommendations received from DPTI are outlined throughout this report.

Overall, there is general support for the creation of a pedestrian friendly streetscape and in particular the inclusion of a *'scramble crossing'* at the George Street intersection.

The following is an overview of the key issues which have been raised through the Phase 3 Community Consultation and Engagement process as well as in correspondence received since the Council's consideration of the draft Masterplan in September 2018. In considering the issues outlined below, the Council should note that overall there was general support from the community and key stakeholders for the draft Masterplan.

- The Parade and George Street Intersection Including the Introduction of a Scramble Crossing
  The draft Masterplan includes the introduction of a '*scramble crossing*' at the intersection of The Parade and George Street. The installation of the *'scramble crossing'* at the intersection of The Parade and George Street, seeks to improve pedestrian safety and access and introduce a more efficient cycle for vehicular movements, which will address a number of the concerns raised by the community.

  Discussions with DPTI in respect to the '*scramble crossing*', have included the possibility of installing turning arrows as part of the existing signalisation as well as a range of other options. The formal advice received from DPTI regarding the '*scramble crossing*', following a number of discussions, is that whilst the Department supports the changes to the intersection to improve pedestrian safety including the installation of a *'scramble crossing'* and associated DDA requirements, it does not support the *'scramble crossing'* in isolation as a standalone initiative.

  DPTI has formally advised the Council that its preferred compromise to manage queuing and traffic during peak periods is through the introduction of a peak period (7.30am – 9.00am and 4.00pm - 6.00pm) "No Right Turn" on both The Parade approaches to the intersection with George Street together with the introduction of the *'scramble crossing'*.

  To ensure that this is the best outcome for The Parade and in particular the George Street intersection, Tonkin Consulting were requested to undertake modelling of the impact of restricting right hand turns from The Parade into George Street during the peak periods. The results of the traffic modelling indicate that by restricting the right hand turns during peak periods, it will maintain an acceptable level of performance at The Parade / George Street intersection. However, it will result in some traffic diverting to alternative routes. The traffic data indicates that up to 50 vehicles per hour may divert to alternative routes. Notwithstanding this, Tonkin have advised that this proposed change will have a minimal impact on the local road network due to the relatively low number of vehicles impacted at this time. The results of the traffic modelling are contained in **Attachment B**. An overview of the current traffic movements at the George Street intersection is contained in **Attachment E**.

  The conclusion from Tonkin Consulting and Council Staff is that the restrictions to the peak hour turning movements would be adequate to meet DPTI's requirements of optimum traffic flows. Any changes to The Parade need to ensure that they ideally meet the needs of all users or at least the overwhelming majority of users.

  Should the Council support the introduction of a *'scramble crossing'* with restrictions to the right hand turns from The Parade into George Street, during the AM and PM peak periods, Council staff will work closely with DPTI to implement the *'scramble crossing'* and associated changes to The Parade and George Street intersection as outlined in the final draft Masterplan.

- Right Turn Lanes on The Parade at George Street
  One of the issues which has been raised by the Parkade Pty Ltd is the inclusion of dedicated right turn lanes on The Parade, where it intersects with George Street, to allow turning vehicles to queue. Whilst the introduction of a right turn lane (2.9m minimum width) could be accommodated in the width of The Parade, it would be at the expense of the median (2.5m) and either vehicle lane width or footpath width (0.4 metres). It should be noted that an enhanced dividing line or narrow median does not provide the same degree of protection from oncoming vehicle collisions that the 2.5 metre wide median provides, therefore introducing an additional level of risk at the George Street intersection.

The advice received from Tonkin indicates that the inclusion of right turn lanes on The Parade would need to be a minimum length of 30 metres plus an additional 15 metre taper length, resulting in a total length of 45 metres. Therefore, the inclusion of a dedicated right turn lane would require the removal of all four (4) flag poles and a total of four (4) street trees (one (1) existing street tree west of George Street and three (3) existing street trees east of George Street). The impact of the right turn lanes is illustrated on the plan contained in **Attachment D**.

In addition, the inclusion of a right turn lane and right turn arrow will more than likely drive more traffic onto George Street. For these reasons the introduction of a right turn lane with right turn arrow is not recommended and has not been included in the draft Masterplan.

The suggestion of incorporating right hand turns has been investigated and has not been recommended in the final draft Masterplan for a number of reasons including that dedicated right turn queuing lanes with right turn arrows will increase the number of signal phases at the intersection, resulting in increased waiting times. The traffic modelling undertaken by Tonkin Consulting demonstrates that the Level of Service and the Degree of Saturation that will result from the inclusion of a dedicated right turn lane and right turn arrow will both fall short of the minimum Level of Service (Level D) and exceed the maximum Degree of Saturation (0.9) that is accepted by DPTI.

Level of Service (LOS) is a qualitative measure for ranking operating conditions or service quality, based on speed, travel time, delay, density, freedom to manoeuvre, interruptions, comfort and convenience. There are six (6) LOS, designated A to F. LOS A is the best operating condition and service quality from the users' perspective (i.e. free-flow). LOS F is the worst (i.e. breakdown flow).
LOS D is the minimum level of service for intersections in DPTI project scenarios.

The modelling of a dedicated right turn lane and right turn arrow resulted in a LOS of E during the AM peak traffic period of 7.30am - 9.00am and LOS of F and E during the PM peak traffic periods of from 3.30pm - 4.30pm and 5.00pm - 6.00pm respectively.

Degree of Saturation (DOS) is a quantitative measure of how much demand an intersection is experiencing compared to its total capacity. It is expressed as a ratio of demand to capacity on each approach to the intersection, with a value of 100% (or 1) meaning that demand and capacity are equal and no further traffic is able to progress through the junction. DPTI's maximum DOS for signalised intersections is 90% (or 0.90) or below. Values over 90% suffer from traffic congestion, with queues of vehicles beginning to form. The modelling of a dedicated right turn lane and right turn arrow resulted in a DOS of 0.93 during the AM peak traffic period of 7.30am - 9.00am and a DOS of 1.12 and 0.95 during the PM peak traffic periods of from 3.30pm – 4.30pm and 5.00pm – 6.00pm respectively.

The Parade / George Street traffic modelling undertaken by Tonkin Consulting is based upon a Vehicle Turning Movement Survey undertaken by DPTI on 15 June 2017 from 7.00am - 7.00pm. The numbers of vehicles, pedestrians and cyclists using the intersection are also illustrated in **Attachment E**.

The inclusion of a dedicated right turn lane without a dedicated right turn arrow, which has also been suggested, is not an option as DPTI does not permit filter right turning movements in instances where there is a new signal installation, or where the intersection geometry is modified. Basically if the Council resolves to include right turn lanes on The Parade turning into George Street, it will require a right turn signal. On this basis, dedicated right turn lanes are also not recommended and have not been included in the draft Masterplan.

One of the primary objectives of the Masterplan is to make The Parade more pedestrian friendly. Reducing or removing the central median and introducing additional traffic lanes onto The Parade (as suggested) will only reinforce The Parade as an arterial road, which is contrary to what the Masterplan is trying to achieve and is contrary to the intended role of The Parade.

It should be noted that the Council has, previously, considered proposed upgrades to The Parade/George Street intersection. These are summarised below.

At its meeting held on 4 April 2005, the Council considered a report which outlined an "in-principle" proposal by the former *Department for Transport, Energy & Infrastructure* (DTEI now known as DPTI) to upgrade the intersection. The proposal outlined six (6) options all of which were aimed at introducing dedicated right-turn lanes on The Parade to improve driver safety at the intersection and traffic flow. A number of the options which were proposed required the removal of several trees from the median on The Parade due to the reduction in its width that would result from the introduction of the turning lanes.

Following consideration of the DTEI proposals, the Council resolved the following:

1. *That Transport SA be advised that Council supports the proposal to upgrade the intersection of The Parade and George Street, Norwood, through the changing of signal phasing for The Parade traffic flows allowing a green arrow for traffic movements provided the signal phasing allows for increased right-of-way time for morning peak hour westward bound traffic and for afternoon peak hour eastward bound traffic.*

2. *That Transport SA be advised that the Council does not support any proposals to upgrade the intersection of The Parade and George Street, Norwood which would require the removal of any trees along The Parade.*

Pursuant to the Council's resolution, Council staff advised DTEI of the Council's decision in regard to its preferred option and its views on the removal of any trees. In response, DTEI undertook an assessment of both its preferred option of introducing short dedicated turning lanes that would not result in the removal of any trees but would require the removal of other infrastructure and the Council's preferred option (outlined above). The results of this DTEI assessment were considered by the Council at its meeting held on 4 September 2006 and resolved the following:

1. *That the Department for Transport, Energy & Infrastructure be advised that Council supports the proposal to upgrade the intersection of The Parade and George Street, Norwood, through the changing of signal phasing for The Parade traffic flows allowing a green arrow for traffic movements, provided the signal phasing allows for increased right-of-way time for morning peak hour westward bound traffic and for afternoon peak hour eastward bound traffic.*

2. *That further consideration be given to this proposal by the Council's consultant as part of the Norwood East Local Area Traffic Management (LATM) and Parking Study, which is to be completed in the 2006-2007 financial year and that the Department for Transport, Energy & Infrastructure be advised of the Council's position.*

3. *That the Department for Transport, Energy & Infrastructure also be advised that designs for the upgrading of the intersection should respect the pedestrian movements and the local community use surrounding this intersection in its re-design which should result in minimal changes to the intersection.*

In respect to the Council's preferred option of changing the signal phasing, DTEI advised at the time, that this option would result in excessive delays at the George Street intersection, which may result in drivers utilising side streets to bypass the intersection.

The Council considered the proposal and concluded that whilst the DTEI option would achieve the desired outcome of improving traffic flow and safety at the junction, it would result in significant changes to the appearance of the intersection. These changes would significantly alter the "main street" appearance of The Parade. Whilst there is no doubt that improvements to facilitate both the traffic and pedestrian movements at this intersection are required, the Council at the time recognised that there are other alternatives besides the removal of the median, narrowing of the footpaths and the inclusion of mast arms (turning arrows) that could deliver similar outcomes, without compromising the amenity and role of The Parade.

When the Council considered the Norwood East Local Area Traffic Management (LATM) in October 2007, it resolved not to make any changes from the previous positions taken by the Council, when it considered the DTEI's proposed upgrades to this intersection. Subsequently, no changes were made to the intersection.

- George Street
  In respect to George Street, the option which the Council released as part of the Phase 3 Community Consultation and Engagement process, proposed a number of modifications, including the removal of the existing eighteen (18) on-street car parking spaces between The Parade and Webbe Street, nine (9) of which are timed spaces on the eastern side of George Street and nine (9) car parking spaces on the western side of George Street associated with the Council's use.

  The objective of removing these car parking spaces is to enable the footpaths to be widened, in order to provide adequate space for landscaping and the creation of a slow speed environment for vehicles. This option delivers both a high quality public realm and a new public space that focuses on creating an attractive, accessible, sustainable and safe pedestrian friendly environment.

  In respect to the written submissions which have been received through the three (3) Phases of Consultation, the responses regarding George Street vary from suggestions to make George Street more traffic focussed through to suggestions to close George Street completely. Overall, the community's desire to see some change to George Street, where it is made safer and a more pleasant pedestrian environment, outweighs the desire and indeed the need to retain George Street in its current configuration or to increase the vehicle dominance on this street.

  The revised draft Masterplan contained in **Attachment C** proposes the following for George Street:

  - the retention of the two way traffic movements (ie north bound and south bound);
  - the retention of the width of the carriageway at 11 metres, at the intersection of The Parade to accommodate three (3) lanes – two (2) southbound and one (1) northbound. This is an increase of one (1) metre from 10 metres in the previous draft Masterplan considered by the Council in September 2018;
  - a reduction in the carriageway at the northern end of George Street from 9.7 metres to 8 metres comprising of two (2) 4 metre wide lanes, which is an increase of one (1) metre from the previous draft Masterplan considered by the Council in September 2018;
  - the formalisation of a right turn only lane from George Street into The Parade at a width of 3.5 metres. The full capacity of this lane (i.e. in terms of the number of vehicles that can queue) will be determined through the detail design stage of the project;
  - the introduction of a 3.5 metre wide straight/left turn lane to accommodate up to four (4) vehicles;
  - the removal of the car parking spaces on both sides of George Street to accommodate wider footpaths;
  - widened footpaths on both the eastern and western sides of George Street between The Parade and Webbe Street, varying from 3.2 metres to 5.8 metres in width;
  - drop off / loading zones on both the eastern and western sides of George Street; and
  - the inclusion of new street trees, garden beds, lighting and seating.

DPTI has advised that in principle it has no objection to the line marking (formalisation of the traffic movements) on George Street, which will create a dedicated left turn and through lane and a dedicated right turn lane.

A detailed Concept Plan of George Street is contained in **Attachment F**.

- Dedicated Left Turn Lane on George Street
  The Parkade submission requested a left turn slip lane on George Street with the capacity to accommodate five (5) or more vehicles. Implementing this scenario would require the introduction of a straight through/ right turn lane. The traffic modelling undertaken by Tonkin Consulting shows that this option would significantly compromise the efficiency of George Street and would fall short of the minimum Level of Service and exceed the maximum Degree of Saturation supported by DPTI. Therefore a dedicated left turn lane on George Street has not be adopted.

  It should be noted that there is some inconsistency in the submissions received from the Parkade Group, particularly in relation to the inclusion of left and right turn lanes on both The Parade and George Street. Despite the inconsistency all of the options suggested have been investigated and where possible modelled.

The recommendation which has been included in the draft Masterplan is to introduce a dedicated right turn lane and a straight through/left turn lane in George Street as illustrated in **Attachment F**.

- Webbe Street and George Street Pedestrian Crossing
  The Parkade submission raised concerns regarding a pedestrian crossing along George Street. The Parade Masterplan does not propose a dedicated pedestrian crossing on George Street. Improvements to the street will address the issues of pedestrian safety on George Street.

The proposed changes to George Street do not change the function of the street, or indeed the existing traffic capacity of George Street. The proposed changes simply formalise the right and left turn movements from George Street onto The Parade and provides a slower speed traffic environment. By removing the car parking spaces it also removes current conflict on the street with cars entering and exiting the car parking spaces and enables the footpaths to be widened, providing a safer environment for all users.

It is anticipated that through the detail design stage (the next stage of the Project) modelling will be undertaken to implement the concept and determine the line marking and traffic management devices that will be required.

- Edward Street
  Following discussions with DPTI and based on the advice which has been received from the consultants, no changes are proposed for the Edward Street intersection. As Elected Members are aware, the draft Masterplan presented to the Council at the Special Council Meeting held on 17 July 2018, included the option of investigating traffic lights at the Edward Street intersection. The Council resolved to remove this option from the Masterplan. Given that the Edward Street intersection is not identified as a Black Spot. An alternative option has not been identified.

  Notwithstanding this, should the need arise, this intersection can be addressed at any time independent of the implementation of the Masterplan.

- Queen Street
  Sight-lines of drivers entering The Parade from Queen Street, has been an issue of concern to residents, business owners and visitors to The Parade for some time. Through the Norwood East Local Area Traffic Management (LATM), it was identified that sight-distances at this location did not warrant the implementation of any measures other than separating traffic movements at the intersection by providing a dedicated left-turn only lane on Queen Street and a right-turn and/or straight-through lane only lane which will improve dispersion of turning traffic. However, the intersection of The Parade and Queen Street is still recognised as a black spot, and on this basis, it is recommended that other options including the introduction of traffic lights be investigated as an option to improve safety at this intersection. The issue has been discussed with DPTI, however the Council has not received a formal response from DPTI in relation to a preferred option. On this basis, it is recommended that the draft Masterplan include the recommendation that further investigations be undertaken regarding the installation of a signalised crossing at Queen Street to enable the discussions with DPTI to continue.

- Modification to The Parade 'Heart'
  The proposed changes to The Parade 'Heart', between Edward and George Streets, have been well supported, with a large number of respondents endorsing the proposed changes such as widening of the footpaths and removing the on-street car parking.

  It should be noted that the submission received from the Parkade Pty Ltd has raised concerns about the removal of on-street carparking spaces and has suggested that the Council assess the traffic and parking implications of its proposal, prior to making a decision. The Parkade submission also suggests that the Council consider building two (2) or three (3) additional future decks on the Webbe Street car park to address the current carparking short falls and off-set the loss of carparking.

The loss of parking has been a common theme highlighted in the submissions which have been received. However, the area between George Street and Edward Street comprises predominantly of loading bays, two (2) bus stops and a taxi rank. Overall, there are eleven (11) timed car parking spaces in this section of The Parade that are proposed to be removed. Should the Council resolve to proceed with the construction of additional levels to the Webbe Street carpark, this will offset any loss of on-street car parking. It should be noted that in accordance with the Council's resolution, the draft Masterplan was amended prior to the Phase 3 Community Consultation and Engagement process to include the Council's commitment to investigating additional car parking opportunities. This commitment is still clearly articulated in the draft final Masterplan.

- Speed Limits

  As part of the Phase 2 Community Consultation and Engagement process, the community was asked specifically about their views in respect to the reduction of speed limits along The Parade. Overall, there is significant support for the reduction in speed limits in the section between Fullarton Road and Osmond Terrace, with 62.6% of respondents supporting the reduction of the speed limit to 50kph in this section of The Parade. The proposal to reduce the speed limit in the section between Osmond Terrace and Portrush Road was not as high, with 52.8% of respondents supporting this concept. However, as part of the Phase 3 Community Consultation and Engagement process, there is support for lower speed limits along The Parade, with a number of submissions strongly supporting a further reduction in the speed limit between Osmond Terrace and Portrush Road to 40kph. Lowering the speed limit to 40kph will enable The Parade to be designed for a lower speed environment resulting in additional safety benefits. On this basis, the draft Masterplan has been amended to reflect the proposal to provide a lower speed limit of 40kph in this section of The Parade, in addition to the proposed reduced speed limit of 50kph in the section of The Parade, between Fullarton Road and Osmond Terrace. Discussions with DPTI regarding this matter has been positively received, with DPTI advising that any proposal for speed reduction would require further investigation and justification.

  Whilst The Parade Masterplan has been used to consult on the option of reducing the speed limit along The Parade, its implementation can occur independently of the Masterplan.

- The Parade Central Median

  The proposals for the central median includes the retention of the existing trees, improved median landscaping treatments as well as the redesign of some of the median openings to deliver a safer environment for all users including pedestrians, cyclists and motorists. Most respondents are generally supportive of the proposed improvements to tree planting and landscaping, however there was strong opposition to the concept of closing the central median at the five (5) intersections, namely Ravenswood Avenue, Sydenham Road, Church Avenue, Margaret Street and Cairns Street. It should be noted that the degree of opposition did vary depending on the particular intersection.

  The main reasons around the opposition was convenience and the fear that the streets that remain open would be congested with the additional traffic using them as the alternative. It should be noted that DPTI did not support or object to the proposal to close the right hand turns into these side streets, choosing to defer their comments until the more detailed design stage, when traffic impact statements would be undertaken.

  The extension of the central median at some of these locations would have resulted in improvements to the functionality and safety of The Parade and would result in improvements to some of the existing problems currently being faced in some of these side streets. However, given the concerns which have been raised by residents of the respective streets to the proposed changes at each of these intersections, the five (5) proposed closures of the central median namely Ravenswood Avenue, Sydenham Road, Church Avenue, Margaret Street and Cairns Street are not recommended and have not been included in the final draft Masterplan contained in **Attachment C**.

- Bicycle lanes
  It should be noted that the draft Masterplan which was released for Community Consultation and Engagement as part of Phase 3 did not propose a dedicated bicycle lane along The Parade between Osmond Terrace and Portrush Road. However, a number of submissions have raised the issue of bicycle lanes and the need to provide safer cycling lanes on The Parade.

  There is general support from DPTI regarding the provision of cycling lanes on The Parade. DPTI sees The Parade as a strategic cycling route, which provides as alternative route to Beulah Road and William Street, including direct connection to where people want to go. The recommendation from DPTI is that there should be provision for an on-road cycling lane on The Parade East (Osmond Terrace to Portrush Road) similar to the treatment that is proposed for The Parade West Fullarton Road to Osmond Terrace).

  The draft Masterplan presented to the Council at its September 2018 meeting included a 1.2 metre wide bicycle lane. As part of the Traffic Review, the bicycle lanes along The Parade were reviewed. Given that The Parade is defined as a high stress cycling route, under the Austroad Guide bicycle lanes in high stress cycling routes need to include an additional 0.4 metre door zone buffer adjacent to on-street parking. Whilst this can be safely accommodated between Fullarton Road and Osmond Terrace, accommodating a bicycle lane that is 1.6m in width in the section of The Parade between Osmond Terrace and Portrush Road may require a reduction in either the width of the footpaths and/or the width of the vehicle lanes. On this basis the revised draft Masterplan contained in **Attachment C** includes the following note:

  The inclusion of a bicycle lane is subject to the availability of adequate space to accommodate a door zone buffer adjacent to on-street parking, which will be determined during the detail design stage.

Norwood Parade Traders Survey

As outlined in the Background Section of this report, ninety-one (91) responses to the draft Masterplan have been received through a hardcopy survey that was distributed by Norwood Parade Traders. As stated earlier in this report, it is unclear who the "Norwood Parade Traders" are.

Whilst the brochure (prepared by the Norwood Parade Traders), provided a basic introduction to The Parade Masterplan, its main focus was the promotion of an alternative configuration for The Parade and George Street intersection. The brochure contained a tear-off survey which included the following statement, addressed to the Chief Executive Officer:

"I am a resident/shopper in the City of Norwood Payneham & St Peters and have a personal interest in The Parade Masterplan. Please accept the below as my formal submission:

As part of the Masterplan, I would like to see the addition of right turn lanes on The Parade, enabling a designated turning lane into George Street, north and south, in conjunction with the proposed scramble crossing".

The survey also asked the respondents to select the reasons for supporting these statements:

- improved pedestrian safety;
- better traffic flows;
- reduced traffic congestion on The Parade;
- reduced rat-running through residential streets to avoid busy arterial roads; and/or
- I would also like to see included in The Masterplan a commitment to additional public car parking in the precinct.

Set out below are responses to the five (5) issues which have been identified by the respondents in the survey.

- Improved Pedestrian Safety
  The very clear objective of The Parade Masterplan is to make The Parade a more pedestrian friendly environment. Many of the treatments proposed in the Masterplan have been proposed with the primary objective of achieving this outcome. The proposed *'scramble crossing'* at the intersection of The Parade and George Street, the widening of footpaths, the proposed pedestrian crossing adjacent the Norwood Oval, are all examples of the Council's intentions to improve pedestrian safety.

- Better Traffic Flows and Reduced traffic congestion on The Parade
  The proposed *'scramble crossing'* and the re-phasing of the traffic lights will separate pedestrian and vehicular movements, which will result in improved traffic flows at the George Street intersection.

- Reduced rat-running through residential streets to avoid busy arterial roads
  The five (5) central median extensions proposed in the draft Masterplan, were a mechanism that would have helped to reduce any rat-running though the residential streets. Introducing right turning lanes at The Parade/George Street intersection will simply encourage more traffic movement through George Street.

- Included in the Masterplan a commitment to additional public car parking in the precinct
  The Council is aware of the concerns which have been raised regarding car parking. The Council has allocated funds and will shortly commission an assessment/feasibility study into the feasibility of constructing an additional level/s of car parking at the Webbe Street car park, which is owned by the Council. This was clearly articulated in the draft Masterplan which was released as part of the Phase 3 Community Consultation and Engagement process.

Following the Council's consideration of this report and the endorsement of the revised draft Masterplan, the Council will be in a position to progress to the detail design and costing stage. The final Masterplan has been structured so that it can be implemented in short, medium and long term investment packages.

It is anticipated that the George Street *'scramble crossing'* and landscaping within the central median between Fullarton Road and Osmond Terrace will form the first two (2) stages of the implementation of The Parade Masterplan. In this respect, the Council has allocated $300,000 in the 2018-2019 Budget for landscaping works within the central median (from Osmond Terrace to Fullarton Road) as part of DPTI's proposed re-profiling and resealing of this section of The Parade. Discussions with DPTI regarding these works have commenced.

The State Government has committed $28,000 towards the establishment of a '*scramble crossing'* at the intersection of The Parade and George Street. The Council as part of its 2019-2020 Budget is considering a funding allocation to enable the delivery of the '*scramble crossing'*. Tonkin Consulting has been engaged to undertake the concept design for the '*scramble crossing'*, which has been aligned with The Parade Masterplan.

Of particular note is that the functional classification for The Parade, between Fullarton Road and Portrush Road, which identifies The Parade as a Public Transport Priority Corridor, Major Cycling Route and Priority Pedestrian Area under the Department's *Functional Hierarchy for South Australia's Land Transport Network*." The Parade is not identified as a Major Traffic, Freight or Peak Hour route.

Notwithstanding this classification, it should be noted that the comments which have been received from DPTI, clearly highlight that DPTI's primary concern is traffic flow. This means that in some instances, DPTI's priorities are in conflict with the priorities of the Council, simply because DPTI's focus is on moving traffic. However, in relation to The Parade/George Street intersection and the introduction of a '*scramble crossing'*, the recommendation to restrict right turns during the peak periods delivers on both DPTI's and the Council's objectives. It also achieves the outcome that was highlighted by the Parkade in its recent correspondence, where it states:

> *That pedestrian and vehicle safety, improved traffic flows and minimising congestion at the intersection of George St and The Parade must be a priority.*

What has changed since September 2018?
In summary the key changes incorporated in the final draft Masterplan contained in **Attachment C** are as follows:

- introduction of No Right Turns from The Parade into George Street during Peak Periods (7.30am - 9.00am and 4.00pm - 6.00pm) with the implementation of the '*scramble crossing'*;
- retention of the existing width of George St carriageway at The Parade intersection (increase from proposed 10m to 11m);
- dedicated right turn lane on George Street into The Parade;
- increase in the length of the straight/turn left lane on George St (Nth) to 18m to accommodate queuing of 4 cars; and
- the removal of the continuous footpaths from the George St intersection.

OPTIONS

The Council can choose to endorse the final draft of The Parade Masterplan as contained in **Attachment C** or alternatively, the Council can choose to amend the Masterplan. However, on the basis that the final draft Masterplan delivers a well-considered vision for the long term viability of The Parade, which has been thoroughly investigated and also aligns with the majority of the outcomes which the community has put forward in its various submissions, it is recommended that the Council endorses The Parade Masterplan final draft as contained in **Attachment C**.

Alternatively, the Council could resolve not to proceed any further with the Masterplan. This option is not recommended.

CONCLUSION

The Parade Masterplan Project provides a long term strategic framework for the planning, redevelopment and activation of this important main street. It has been developed to complement the numerous strategic initiatives that have been progressed and implemented by the Council over the last few years, including the introduction of a new planning policy framework that supports significant residential, mixed use and employment growth opportunities in and around Kent Town and Norwood, and in particular around The Parade.

The Masterplan focusses on the identity and appeal of 'The Parade', and how this significant economic, social and cultural asset will contribute to the experience of those people who choose to live, work and play on The Parade. Most importantly, The Parade Masterplan establishes a holistic vision to direct the progressive enhancement of the streetscape to support local businesses, encourage new investment and maximise community enjoyment and appeal.

COMMENTS

The Masterplan has been developed through extensive consultation with the residents, businesses and visitors, as well as various State Government Departments, including the Department of Planning, Transport and Infrastructure, to achieve strong community understanding and ownership of the future vision.

In consideration of the final draft of The Parade Masterplan, it is important to note the following:

- The Masterplan is, by its very nature, a concept which sets out how the Council, in this case, will undertake the various works to achieve the vision set out in the Masterplan. The Masterplan is not a detail design, setting out dimensions and/or working drawings. This work will be undertaken as part of the next stage of the Project.

- There will always be competing demands and different points of view. The role of the Masterplan process is to seek to resolve and/or at the very least, address the issues which have been raised, noting that the Masterplan will not please everyone. In this respect, change will inevitably result in someone not being satisfied with the outcome. Notwithstanding this, it is important to recognise that The Parade Masterplan has been developed taking into consideration all of the comments received from the community and key stakeholders.

The Council has been presented with a balanced resolution of the issues which have been raised. The test of the Masterplan is whether it has achieved the Council's objectives.

RECOMMENDATION

1. That the final draft of The Parade Masterplan (as contained in Attachment C) be endorsed by the Council.

2. That the Council supports the proposal to introduce a peak period (7.30am – 9.00am and 4.00pm – 6.00pm) 'No Right Turn' on both The Parade approaches together with the introduction of a scramble crossing at the intersection of The Parade and George Street, in order to manage queuing and traffic during peak periods.

3. That the Chief Executive Officer be authorised to make any minor amendments to The Parade Masterplan, resulting from consideration of this report and as necessary to finalise the document in a form suitable for finalisation and printing.

4. That the Council endorses the use of The Parade Masterplan as the basis for the detail design of any proposed streetscape upgrade to The Parade.

5. That the Chief Executive Officer be authorised to write to the Department of Planning, Transport and Infrastructure and advise the Department that the Council has endorsed The Parade Masterplan and supports the proposal to introduce a peak period (7.30am – 9.00am and 4.00pm – 6.00pm) 'No Right Turn' on both The Parade approaches together with the introduction of a scramble crossing at the intersection of The Parade and George Street.

Cr Mex sought leave of the meeting to make a Personal Explanation in relation to Item 2.1.
The meeting granted leave for Cr Mex to make a Personal Explanation.

<u>Cr Christel Mex's Personal Explanation</u>

Summary of Personal Explanation:

In February 2018 and March 2019, I accepted an invitation from the Chapley Group to listen to their concerns about The Parade Masterplan. At other times I also listened to concerns from the Boscaini Group, Outdoors on Parade, traders in Norwood Mall, the Norwood Residents Association, Kensington Residents Association and the NPSP Bicycle User Group. At no time during these conversations did I make any undertaking to support any particular policy position.

In addition, during the election campaign, I partially completed a survey on invitation from Parade Traders, but I did not make any statements that would indicate support or otherwise for any policy position.

I will remain in the meeting and reiterate that I will listen to the debate with an open mind and make my decision without bias.

Cr Stock sought leave of the meeting to make a Personal Explanation in relation to Item 2.1.
The meeting granted leave for Cr Stock to make a Personal Explanation.

Cr Stock's Personal Explanation

Summary of Personal Explanation:

I would like to declare a perceived conflict of interest as I participated in a survey in 2018 regarding The Parade Masterplan, however I will remain in the meeting and participate in the debate and vote with an open mind and with the benefit of all information that has been made available and is now before the Council for consideration, including the contribution of other Elected Members.

I also declare that I have met with Parade Traders to hear their comments on the Masterplan (just as I frequently meet with residents to listen to their comments and complaints).

Cr Duke declared a perceived conflict of interest in this matter, on the basis that he has met with representatives of The Parade traders. Cr Duke advised that he would remain in the meeting and take part in the decision making process and vote with an open mind and with the benefit of all the information that has been made available and/or which is now before the Council for consideration, including the contribution of other Elected Members.

Cr Moorhouse sought leave of the meeting to make a Personal Explanation in relation to Item 2.1.
The meeting granted leave for Cr Moorhouse to make a Personal Explanation.

Cr Moorhouse's Personal Explanation

Summary of Personal Explanation:

I would like to declare a perceived conflict of interest on the basis that earlier this year I met with the members of the Chapley Group to listen to their concerns about The Parade Masterplan. However, as at no time during this meeting did I provide any comments or indicate a particular position in respect to the Masterplan, I advise that I will remain in the meeting and take part in the decision making process and vote with an open mind and with the benefit of all information that has been made available and/or which is now before the Council for consideration, including the contribution of other Elected Members.

Cr Patterson declared a perceived conflict of interest in this matter, on the basis that she has met with representatives of The Parade traders. Cr Patterson advised that she would remain in the meeting and take part in the decision making process and vote with an open mind and with the benefit of all the information that has been made available and/or which is now before the Council for consideration, including the contribution of other Elected Members.

Cr Minney declared a perceived conflict of interest in this matter, on the basis that he has met with representatives of The Parade traders. Cr Minney advised that he would remain in the meeting and take part in the decision making process and vote with an open mind and with the benefit of all the information that has been made available and/or which is now before the Council for consideration, including the contribution of other Elected Members.

Cr Mex left the meeting at 7.19pm.
Cr Mex returned to the meeting at 7.21pm.

Cr Dottore moved:

1. *That the final draft of The Parade Masterplan (as contained in Attachment C) be endorsed by the Council with the following amendments:*

   a. *That the key elements description and drawing of the Fullarton Road intersection on page 60 be revised to reflect the existing intersection arrangement which is proposed to be maintained;*

   b. *That the key elements description and drawing of the Sydenham Road intersection on page 61 be revised to reflect no right turns from Sydneham Road onto The Parade as per the existing conditions;*

   c. *That the key elements description and drawing of the Osmond Terrace intersection on page 72 be revised to include the existing bicycle lanes and the existing right turn lanes from Osmond Terrace onto The Parade; and*

   d. *That a disclaimer be included in The Parade Masterplan stating that the photo montages are for illustration purposes only.*

2. *That the Council supports consideration of the proposal to introduce a peak period (for example 7.30am – 9.00am and 4.00pm – 6.00pm) 'No Right Turn' on both The Parade approaches together with the introduction of a scramble crossing at the intersection of The Parade and George Street, in order to manage queuing and traffic during peak periods.*

3. *That the Chief Executive Officer be authorised to make any minor amendments to The Parade Masterplan, resulting from consideration of this report and as necessary to finalise the document in a form suitable for finalisation and printing.*

4. *That the Council endorses the use of The Parade Masterplan as the basis for the detail design of any proposed streetscape upgrade to The Parade.*

5. *That the Chief Executive Officer be authorised to write to the Department of Planning, Transport and Infrastructure and advise the Department that the Council has endorsed The Parade Masterplan and supports consideration of the proposal to introduce a peak period (for example 7.30am – 9.00am and 4.00pm – 6.00pm) 'No Right Turn' on both The Parade approaches together with the introduction of a scramble crossing at the intersection of The Parade and George Street.*

6. *That as part of the Detail Design Stage of the Project, staff investigate the possibility of installing a scramble crossing at the intersection of Osmond Terrace and The Parade.*

Seconded by Cr Duke and carried unanimously.

Attachment B

Confidential

George Street Upgrade Project
Status Report

City of Norwood Payneham & St Peters
175 The Parade, Norwood SA 5067

Telephone 8366 4555
Facsimile 8332 6338
Email townhall@npsp.sa.gov.au
Website www.npsp.sa.gov.au

City of Norwood Payneham & St Peters

B

The Parade East

Key Elements

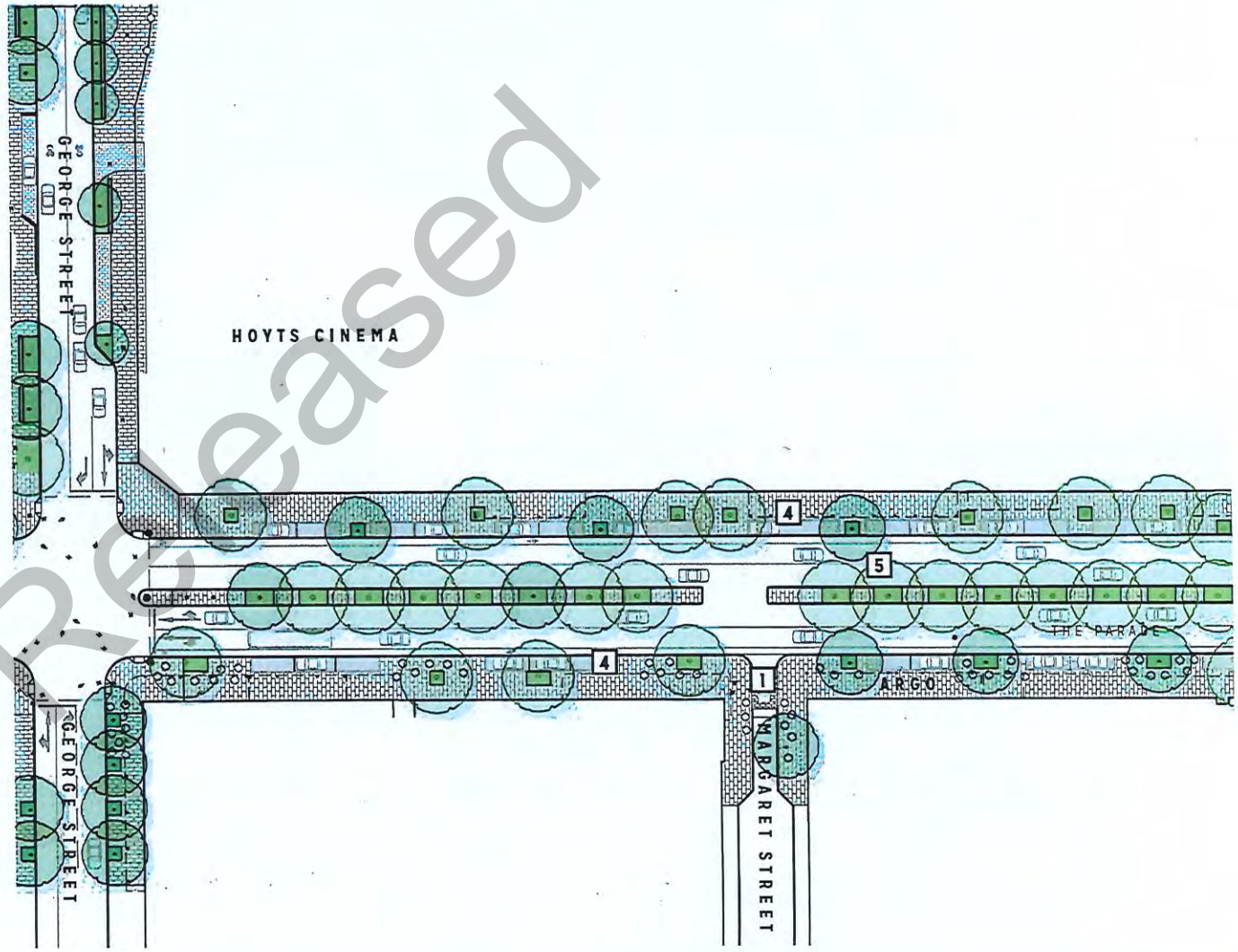
1 Pedestrian friendly intersections
- Raised continuous footpaths at cross streets slow traffic and improve safety and access for pedestrians.

2 Queen Street intersection
- Footpaths are widened at corners, removing on-street car parks adjacent the intersection to improve traffic safety.
- Continuous footpaths - raised and paved. Additional street trees, garden beds and improved street lighting.
- Investigate the installation of traffic lights at the intersection to improve safety (in consultation with DPTI).

3 Portrush Road intersection
- The vista looking east along The Parade toward Clayton Church is maintained.
- Streetscape improvements to the entry of The Parade through additional flagpoles and extended footpaths and median.

4 Verges / On-street car parking
- Widened, paved footpaths with additional street trees and landscaping.
- On-street car parking and vehicle cross overs to access properties are maintained.

5 Tree median
- Additional street trees strengthen the visual enclosure of the street and improve amenity and comfort.



Attachment C

Confidential

George Street Upgrade Project
Status Report

City of Norwood Payneham & St Peters
175 The Parade, Norwood SA 5067

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City of Norwood Payneham & St Peters

11.6 IMPLEMENTATION OF THE PARADE MASTERPLAN AND GEORGE STREET UPGRADE PROJECTS

REPORT AUTHOR: Project Manager, City Projects
GENERAL MANAGER: Chief Executive Officer
CONTACT NUMBER: 8366 4524
FILE REFERENCE: qA15170
ATTACHMENTS: A - D

PURPOSE OF REPORT

The purpose of this report is to update the Council on the progress of the implementation of The Parade Masterplan and the George Street Upgrade Project.

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BACKGROUND

As Elected Members will recall, at a Special Meeting held on 15 May 2019, the Council considered and endorsed The Parade Masterplan as the basis for the detail design for the streetscape upgrade to The Parade.

As part of the 2020-2021 Budget, the Council allocated funds for both the design and construction of the George Street Upgrade Project. Due to the legal proceeding initiated by Parkade Pty Ltd and Australasian Property Developments, regarding The Parade and George Street intersection, the commencement of this work was delayed until the conclusion of the legal proceedings.

In April 2021, the Council commenced a two (2) stage procurement process to appoint consultants to prepare the detail design and construction documentation associated with the implementation of The Parade Masterplan and the George Street Upgrade Project.

At its special meeting held on 22 November 2021, the Council appointed a multi-disciplinary team, led by Landskap (landscape architecture and urban design consultants) to undertake design development for The Parade between Fullarton Road and Portrush Road and detail design and construction documentation for George Street between the intersection of The Parade and Webbe Street.

Since their appointment, the consultants have been undertaking multiple design and pre-construction due diligence activities in order to eliminate as many risks as possible before the commencement of construction. The findings of these due diligence activities and the status of the design development for The Parade and the detail design and construction documentation for the George Street Upgrade Project are the subject of this report.

RELEVANT STRATEGIC DIRECTIONS & POLICIES

CityPlan 2030: Shaping Our Future

The Parade Masterplan seeks to implement the Council's strategic vision set out in *CityPlan 2030*: *Shaping Our Future* and its commitment to its primary objective of community well-being. The holistic approach reflects the strategic importance of the Masterplan in achieving meaningful change. The relevant Outcomes, Objectives and Strategies of the Plan are outlined below:

Outcome 1 Social Equity

A connected, accessible and pedestrian-friendly community

Objective 1.1: Convenient and accessible services, information and facilities.

Strategy 1.1.3 Design and provide safe, high-quality facilities and spaces for all.

Objective 1.2: A people-friendly, integrated and sustainable transport network.

Strategy 1.2.2 Provide safe and accessible movement for all people.

Objective 1.3: An engaged and participating community.

Strategy 1.3.2 Provide opportunities for community input in decision-making and program development.

Outcome 2 Cultural Vitality

A culturally rich and diverse City, with a strong identity, history and 'sense of place'

Objective 2.1	An artistic, creative, cultural and visually interesting City
Objective 2.2	A community embracing and celebrating its social and cultural diversity.
Objective 2.3	A City which values and promotes its rich cultural and built heritage.
Strategy 2.3.1	*Protect and enhance places, streetscapes, precincts and landmarks which reflect the built and cultural history of our City.*
Objective 2.4	Pleasant, well designed and sustainable urban environments.
Strategy 2.4.2	*Encourage sustainable and quality urban design outcomes.*
Strategy 2.4.3	*Maximise the extent of green landscaping provided in new development and in the public realm.*
Objective 2.5	Dynamic community life in public spaces and precincts.
Strategy 2.5.2	*Create and provide interesting and colourful public spaces to encourage interaction and gatherings.*

Outcome 3 Economic Prosperity

A dynamic and thriving centre for business and services.

Objective 3.2	Cosmopolitan business precincts contributing to the prosperity of the City.
Objective 3.5	A local economy supporting and supported by its community.
Strategy 3.5.1	*Support opportunities for people to collaborate and interact in business precincts.*

Outcome 4 Environmental Sustainability

A leader in environmental sustainability

Objective 4.2	Sustainable streets and open spaces.
Strategy 4.2.1	*Improve the amenity and safety of streets for all users including reducing the impact of urban heat island effect.*
Strategy 4.2.2	*Protect, enhance and expand public open space*

Smart City Plan

The *Smart City Plan* sets out the long-term vision, direction and objectives for the Council's future as a smart city. It is based on the foundation that a smart city leverages new technology, data and innovation to improve liveability, productivity and sustainability outcomes. The *Smart City Plan* is guided by the following five (5) core principles of innovation, sustainability, education and training, collaboration and security and transparency, these principles will be used to shape the smart city thinking and the actions that are adopted through the implementation of The Parade Masterplan.

FINANCIAL AND BUDGET IMPLICATIONS

Long-Term Financial Management Plan 2021 - 2031

As part of the Council's 2021-2031 Long-Term Financial Management Plan, the Council has allocated a total of $30,000,000 to implement The Parade Masterplan. Due to the extent and the complexities associated with the implementation of The Parade Masterplan, the works are proposed to be delivered incrementally over a number of financial years commencing in 2024-2025 and concluding in 2027-2028. The four (4) proposed stages comprise Fullarton Road to Sydenham Road, Sydenham Road to Osmond Terrace, Osmond Terrace to George Street and George Street to Portrush Road. The budget allocation for the implementation of The Parade Masterplan is based upon a cost estimate which was prepared by Rider Levett Bucknall (RLB) in July 2020.

Cost Estimate

The cost to upgrade The Parade between Fullarton Road and Portrush Road and including George Street was estimated at $26,450,000. The cost for George Street Upgrade Project was estimated at $1,143,000. It should be noted that the following items were excluded from RLB's July 2020 cost estimate including:

- any works associated with the George Street roadway and Webbe Street intersection;
- any augmentation or replacement of the existing stormwater drainage system;
- any augmentation or relocation of third-party services;
- soil contamination removal or remediation;
- maintaining access and operations to Norwood Place, The Parade Central, The Norwood Concert Hall and Webbe Street Carpark during construction; and
- cost escalation post July 2020.

RLB have since been appointed as the Cost Consultants for the George Street Upgrade Project and are in the process of preparing cost estimates based on the construction documentation. Based on the current market conditions, it is anticipated that the construction costs for the George Street Upgrade will exceed the allocated budget, however the actual cost will not be known until the tenders have been received.

Current Budget

To date, the Council has budgeted $2,037,000 towards developing The Parade Masterplan and undertaking further design and documentation for the implementation of The Parade Masterplan and George Street Upgrade. Additionally, the George Street Upgrade Project has an $800,000 construction budget. The George Street Upgrade Project was initially funded by the Council as part of its 2020-2021 Budget, prior to RLB preparing a cost estimate in the July 2020.

The Council's current budget for The Parade Masterplan and George Street Upgrade Project is shown in Table 1.

TABLE 1: CURRENT APPROVED BUDGET FOR THE PARADE AND GEORGE STREET

	Council Funding	Grant Funding	Expenditure	Remaining
The Parade Masterplan	$100,000	$100,000	$200,000	$0
Design Development, Detail Design and Documentation for The Parade Redevelopment and George Street Upgrade	$1,837,000	$0	$443,432	$1,293,568
George Street Upgrade	$800,000	$0	$0	$800,000
TOTAL	**$2,737,000**	**$100,000**	**$643,432**	**$2,193,568**

Market Conditions, Escalations & Volatility

Unfortunately, the trend of cost escalation, caused by a number of factors including subcontractor capacity and the availability of local and imported materials, is predicted to continue. During 2021, as a result of the Federal and State Government's COVID-19 stimulus funding, together with the significant volume of stimulus works in the market and the rising cost of materials have impacted significantly on construction costs.

Some of the key factors that are likely to impact on the cost of the George Street Upgrade Project include:

- commercial construction tenders in the second half of 2021, showing an escalation close to 15% for the year; and
- tender returns in 2022, maintaining the inflated cost levels with no sign of decreasing at this stage.

In addition, the construction industry is experiencing significant supply chain delays, due to increases in shipping costs. Recent variants of COVID 19, have also resulted in labour shortages, which is predicted to continue to be a significant variance within the trade contractor market. In addition, fuel price increases and the war in the Ukraine, is now also contributing to an over inflated market.

EXTERNAL ECONOMIC IMPLICATIONS

There are a number of external market factors that could potentially impact delivery timeframes and costs such as resource shortages and supplier or contractor availability.

SOCIAL ISSUES

From a community development and equity perspective, it is important that the City has an accessible and well-maintained public realm. The redevelopment of The Parade and George Street will benefit the public by providing a public space which is accessible to people of all abilities and is safe and comfortable to use.

CULTURAL ISSUES

The Parade Masterplan articulates a unique main street identity for The Parade and George Street, distinct from other main streets, which builds on the qualities that people value about The Parade, including its well-recognised cosmopolitan culture, its heritage and social and cultural history.

The upgrade of The Parade and George Street will build on the existing identity of The Parade, and will ensure that its 'sense of place' is managed appropriately and sensitively enhanced through the design process.

ENVIRONMENTAL ISSUES

The Parade Masterplan incorporates environmental sustainability as an integral component to the future of The Parade. Climate change adaptation and resilience has been integrated into the streetscape design. It is envisaged that these strategies and actions will provide The Parade with a long-term competitive advantage, ensuring a greener identity, improved pedestrian comfort and greater protection of local businesses, buildings and infrastructure.

RESOURCE ISSUES

The Council's Project Manager, City Projects is responsible for the management of the design development, detail design and construction documentation for The Parade and George Street Upgrade Projects. It is anticipated that the construction of the George Street Upgrade and subsequent incremental delivery of The Parade, will also be managed by the Project Manager, City Projects.

RISK MANAGEMENT

The key risks associated with the Detail Design Stage and the controls used to mitigate these risks are set out below in Table 2.

TABLE 2: PROJECT RISKS AND CONTROLS

Risk Description	Impacts	Risk Controls
Design does not meet expectations	Community and stakeholders	• Undertake a briefing workshop with the Council on the design development. • Undertake engagement activities during the design process to understand the needs of the Precinct. • Ensure amenity priority is built into detailed Project Specification.
Business interruption	Community and stakeholders	• Undertake engagement activities during the design process to understand the needs of the Precinct. • Develop construction approach / standards of access to minimise disruption as part of the design process.
Impacts on traffic movements	Vehicles and Pedestrians	• Undertake investigative and engagement activities during the design process to understand current usage and needs. • Develop standards of access to minimise disruption. • Ensure that Project staging is organised to allow access.
Business sales reduction	Community and stakeholders	• Develop construction approach / standards of access to minimise disruption as part of the design process. • Maintain ongoing communication with businesses to understand needs.
Design integration (design not aligning with "other Projects")	Design	• Establish Project Working Group. • Include representative from the Department for Infrastructure and Transport on Project Working Group.
Lack of design integration (conflicts onsite causing delays)	Design / Construction	• Undertake due diligence activities during detailed design stage. • Undertake potholing during the detailed design stage.
Damage to heritage buildings	Construction	• Develop appropriate construction methodology and use agreed building practices which will be specifically developed. (Construction and Vibration Noise Management Plan)
Third Party Utility Upgrades	Design / Construction	• Engage with all service authorities during the design stages. • Develop future proofing options through the design detail process.
Is the design safe (safety in design)	Design	• Undertake independent Road Safety Audits. • Include Safety in Design audits of the detail design • Undertake materials testing where required to ensure compliance with standards.
Non – compliant design	Design	• Establish Hold Points through the design process to review the design. • Establish internal review and sign-off process. • Undertake additional investigations to ensure there is sufficient information to design to the relevant standards. • Undertake materials testing where required to ensure compliance with standards.

Sudden design changes	Design / Construction	• Develop design options in the detailed design stage. • Undertake potholing of services
Late design delivery	Design / Construction	• Provided completed package of design options so that contractor will not be delayed.
Project Budget	Financial	• Reporting to the Council. • Engage Cost Estimator to capture costs associated with the design. • Establish Hold Points through the design process to review costs. • Develop sufficient risk contingency. • Qualify risks through due diligence activities e.g. potholing of services, staging requirements through stakeholder engagement.

COVID-19 IMPLICATIONS

Consultants and contractors have their own COVID-Safe Plans which they will need to implement and follow. At this time in South Australia, project disruptions due to COVID restrictions are not foreseen. However, it is possible that there could be minor delays for supply of materials or other disruptions (i.e. ability to undertake onsite inspections) if COVID restrictions tighten in the future.

CONSULTATION

- **Elected Members**
  An Information Session was held on 3 August 2022, where Elected Members were provided with an update on the progress of the implementation of The Parade Masterplan and the George Street Upgrade, including an overview of the stormwater modelling undertaken and the design measures that have been identified to mitigate the risks associated with flooding.

- **Community**
  The Community was consulted and engaged through the Phase 1, Phase 2 and Phase 3 Community Consultation and Engagement process for The Parade Masterplan. Further consultation with key stakeholders has commenced and will continue to be undertaken through the detail design and construction documentation process as required.

- **Staff**
  Manager, Economic Development & Strategic Projects;
  Manager, Integrated Transport & Access;
  Manager, Finance;
  Project Manager, Urban Design & Special Projects; and
  Project Manager, Assets

- **Other Agencies**
  Council staff are liaising with the Department for Infrastructure and Transport (DIT) on the scope and timing of road reseal work for The Parade as well as the operation of the traffic signals. In addition, Council staff and the consultants are liaising with all relevant third-party utility providers (e.g. SA Water) to understand the extent and condition of utility services located along The Parade and George Street and to determine whether or not there are planned upgrades to their utilities. This information is being used to inform the detail design stages.

DISCUSSION

The Parade Redevelopment

In respect to the implementation of The Parade Masterplan, the consultants have so far completed a site inventory and analysis, which will be used to inform the detailed design. This work includes completing a detailed engineering survey, undertaking traffic counts and reviewing other South Australian main street upgrades to identify what has and has not worked. The design development for The Parade Redevelopment is temporarily on hold until the George Street Upgrade Project detailed design and documentation is completed. Design development for The Parade Redevelopment will resume in October 2022 and is scheduled to be completed by June 2023, with detailed design and documentation completed by December 2023 for the first stages of the Project. A summary sheet providing further details regarding The Parade Redevelopment is contained in **Attachment A**.

Once the detail design and construction documentation for The Parade is completed, the construction will be delivered in four (4) stages commencing with the sections between Osmond Terrace and Fullarton Road as Stage 1 and 2, followed by Portrush Road to George Street as Stage 3 and George Street to Osmond Terrace as the final stage. In accordance with the Council's *Long Term Financial Plan*, construction is scheduled to commence in 2024-2025, with one stage delivered every financial year through to 2027-2028. The proposed scheduling of Stage 1 and 2 (the western end of The Parade) aligns with DIT's current schedule for road reseal work between Osmond Terrace and Fullarton Road.

George Street Upgrade Project

As the Council has allocated $800,000 for implementing the George Street Upgrade Project, the detail design and documentation for the George Street Upgrade Project has been prioritised ahead of The Parade. Due to the complexities associated with due diligence investigations and stormwater modelling, the detail design and documentation for the George Street Upgrade Project is running two (2) months behind schedule. It is anticipated that the construction documentation will be completed in mid-October 2022, the tender will be undertaken in November 2022 and the recommendation to award the construction contract will be presented to the Council for consideration and endorsement soon thereafter. In accordance with this timeframe, it is expected that construction will commence in early 2023 and take approximately six (6) months to complete. A project summary sheet providing further details in relation to the George Street Upgrade Project is contained in **Attachment B**.

George Street Upgrade Project Due Diligence Investigations

Throughout the detail design stage of the Project due diligence activities and processes are being undertaken to ensure that potential project risks are investigated and addressed and that any necessary approvals can be obtained from stakeholders and service authorities prior to construction. The due diligence activities have identified some elements, which were not costed at the Masterplan stage. These items are discussed in more detail below.

- **Stormwater Modelling and Flood Management**

  As part of the detail design stage of the George Street Upgrade Project, stormwater and flood modelling was undertaken for the section of George Street between The Parade and Webbe Street. The purpose of the modelling was to set a base line on which to compare impacts of the proposed street modifications. A separate report specifically addressing the drainage and stormwater issues in and around George Street, and the proposed solutions to address the deficiencies, has been prepared and is included as part of this Agenda for the Council's consideration.

  Given that the Council will shortly commence works to upgrade George Street, it would be prudent to undertake any necessary stormwater drainage upgrade works prior to the commencement of the George Street Upgrade Project.

- **Geotechnical Conditions**

  Soil core samples were taken at various road and footpath locations within George Street between The Parade intersection and Webbe Street, to determine the underlying soil conditions on site and to assist with the design of pavements and structures associated with the George Street Upgrade.

  These geotechnical investigations have identified a mixture of underlying soil conditions including old macadam and modern compacted rubble base materials under the asphalt road pavement. The strength of the soils underlying the existing road and footpaths varies over the extent of the proposed works.

  It should be noted that George Street and Webbe Street are subject to frequent and heavy loadings associated with large delivery vehicles connected with Norwood Place. In order to maintain the integrity of the underlying pavement structure and hence avoid the requirement to undertake a full rebuild of the road pavement, a 'deep lift' asphalt pavement design is being proposed.

  The costs associated with works to the existing George Street roadway were excluded from the July 2020 cost estimate.

- **Soil Contamination**

  As part of the detail design process, soil contamination testing has been undertaken at various locations within the road and footpath areas, where it is known that there will be the requirement for soil to be excavated and removed, to enable tree planting, garden beds and trenching for service infrastructure, such as lighting and drainage.

  The locations for the soil contamination investigations were also informed by the geotechnical investigations that were undertaken for the Project. These investigations identified areas where tar-bound macadam pavements had been discovered and identified as being likely to have a high level of contamination.

  The costs associated with the disposal and treatment of contaminated material on the site were not included in the July 2020 cost estimate. However, these will now be included in any future cost estimates.

- **Service Authority Clearance Requirements for Tree Planting**

  Upon commencement of the detailed design for George Street, contact was established with all of the third-party service authorities who had assets within George Street. A thorough process was undertaken to obtain as much 'as-built' information and construction drawings from the third parties, in order to understand where services exist, how they may be impacted and where design solutions could be developed to avoid the requirement for costly adjustments or relocations of third-party services.

  As part of these investigations, the Council has undertaken physical service investigations (potholing) to accurately determine the locations and depths of existing underground services in George Street, which would be impacted by the proposed design and associated construction works, to enable all of the relevant approvals to be obtained prior to the installation of new infrastructure and the proposed tree planting.

  Through the investigations it has been identified that there are two (2) critical services which require detailed consideration and planning to ensure that they are not impacted by any infrastructure or tree planting. These include:

  - a steel high pressure gas main, which runs down the full length of the western side of George Street; and
  - a water main, which runs down the full length of the eastern side of George Street.

  Meetings have been held with representatives from each of the third-party authorities to identify and develop solutions to facilitate the planting of trees adjacent to these services. The focus of these discussions has been around the age and condition of the asset and any plans for renewal, the types of protection that could be used in relation to the tree planting (e.g. root barriers), tree species and the options for the full relocation of the impacted service. An acceptable solution for the high-pressure gas main has been identified, with a number of options currently being considered for the water main.

- **Other Service Authority Costs**

  The are several SA Power Networks (SAPN) assets located on George Street, which will require removal to facilitate the realisation of the endorsed Masterplan. These include:

  - the disconnection and removal of four (4) existing SAPN owned light poles; and
  - the decommissioning of the existing stobie pole on the corner of George Street and Webbe Street. This will also involve the relocation of the existing road light on the stobie pole that is being removed to ensure that there is still adequate road lighting at the intersection.

  These works are deemed as being 'non-contestable' works, which means that they can only be performed by SAPN and hence the costs are non-negotiable. The Council has requested a 'fee offer' from SAPN to undertake the works.

Maintaining Access During Construction

During the construction of George Street there will be a requirement to ensure that vehicle and pedestrian access for the Norwood Concert Hall, Parade Central, Norwood Place and the Webbe Street Carpark, are maintained. In addition, the Council will need to ensure that the emergency access to SAPN transformers and switching cabinets located on both the eastern and western sides of George Street and the emergency access to the Metropolitan Fire Service fire hydrants and booster pumps on the western side of George Street, are accessible at all times.

The requirement to maintain access during construction will require a high level of traffic management and some night works.

Traffic

The Parade Masterplan as endorsed by the Council, included a "scramble crossing" at the intersection of The Parade and George Street. The Council's reason for proposing a scramble crossing at The Parade and George intersection, was to improve pedestrian safety and introduce a more efficient signal cycle for vehicular movements, which ultimately would address a number of the safety and access concerns that were raised during the consultation phases of The Parade Masterplan Project. In The Parade Masterplan, the "scramble crossing" is complemented with a number of other modifications to the intersection, including the separation and formalisation, through line marking, of the right turn, left turn and straight through traffic movements on both sides of George Street.

As Elected Members are aware, the State Government part funded the "scramble crossing", which was subsequently implemented by Parkade Pty Ltd and Australasian Property Developments. As a result, the Council's recommended traffic management changes proposed for George Street, which would result in improved traffic flow and safety for George Street, have not been implemented.

The George Street line marking improvements, which are shown in The Parade Masterplan, were included in the Council's original scope of work for the "scramble crossing". However, due to the legal proceedings, DIT removed the George Street line marking improvements from the scope of the "scramble crossing" project.

The proposed George Street line marking improvements proposed in The Parade Masterplan include making the existing single unmarked lane into two (2) separate lanes on both approaches to The Parade as follows:

- 18-metre-long right turn lane; and
- 18-metre-long left turn and through lane.

The Council's intent following the conclusion of the legal proceedings was to incorporate these changes as part of the George Street Upgrade Project. However, given the change in circumstances and the pressure currently being experienced on George Street as a result of a number of factors (e.g. the closure of the Coles carpark, which has diverted more traffic to the Norwood Place and the Webbe Street carparks), the proposed George Street line marking improvements as illustrated in **Attachment C** will be implemented in the next couple of months. These line marking improvements, which include 27-metre-long dual lanes on both approaches to the Parade, are expected to help improve traffic flow and driver safety on George Street, and will alleviate some traffic stress during the upcoming busy holiday shopping period.

In order to implement the line marking improvements, three (3) on-street car parking spaces will be removed from the east side of George Street adjacent The Parade Central and replaced with footpath paving. One (1) on-street car park space will be converted to a loading zone.

It should also be noted that the interim line marking improvements are the same as what is proposed for the George Street Upgrade Project. The current design for the George Street Upgrade Project, as illustrated in **Attachment D**, includes:

- a 27-metre right turn lane;
- a 27-metre-long left turn and through lane; and
- removal of on-street car parking spaces between The Parade and Webbe Street.

George Street is not proposed to be closed to vehicle traffic or transformed into a pedestrian only space. Once upgraded, the George Street carriageway width will essentially remain the same as currently exists (i.e. no narrowing to the effective roadway for vehicle traffic).

OPTIONS

The Council can choose to adopt the recommendation as set out in this report or alternatively, the Council can resolve to amend the recommendation. Given that the Council has invested significant costs to undertake the required design and due diligence activities to enable project risks associated with the implementation of The Parade Masterplan and George Street Upgrade Project to be identified and addressed and to be able to obtain an accurate estimate of the cost to deliver the projects, any amendments to the Projects at this stage are not recommended.

CONCLUSION

The primary objective for the Council is to continue to implement The Parade Masterplan and George Street Upgrade, in a timely manner and ensure that all risks are identified and resolved as much as possible during the detail design phase of the Projects in order to avoid delays and additional works during the construction of the Projects.

COMMENTS

Nil.

RECOMMENDATION

1. That the Council notes the status of the Implementation of The Parade Masterplan and the George Street Upgrade Projects as set out in this report and in the attachments to this report contained in Attachments A and B.

2. That the Council notes that the proposed George Street line marking improvements as illustrated in Attachment C will be implemented over the next couple of months.

3. That the Council notes that a report on the tenders for the George Street Upgrade Project will be presented to the Council for its consideration in early 2023.

Cr Sims moved:

1. *That the Council notes the status of the Implementation of The Parade Masterplan and the George Street Upgrade Projects as set out in this report and in the attachments to this report contained in Attachments A and B.*

2. *That the Council notes that the proposed George Street line marking improvements as illustrated in Attachment C will be implemented over the next couple of months.*

3. *That the Council notes that a report on the tenders for the George Street Upgrade Project will be presented to the Council for its consideration in early 2023.*

Seconded by Cr Granozio.

Cr Duke moved:

That the Project be deferred until the Coles re-development is completed.

Seconded by Cr Knoblauch and lost.

The original motion was put and carried.

Division

Cr Duke called for a division and the decision was set aside.

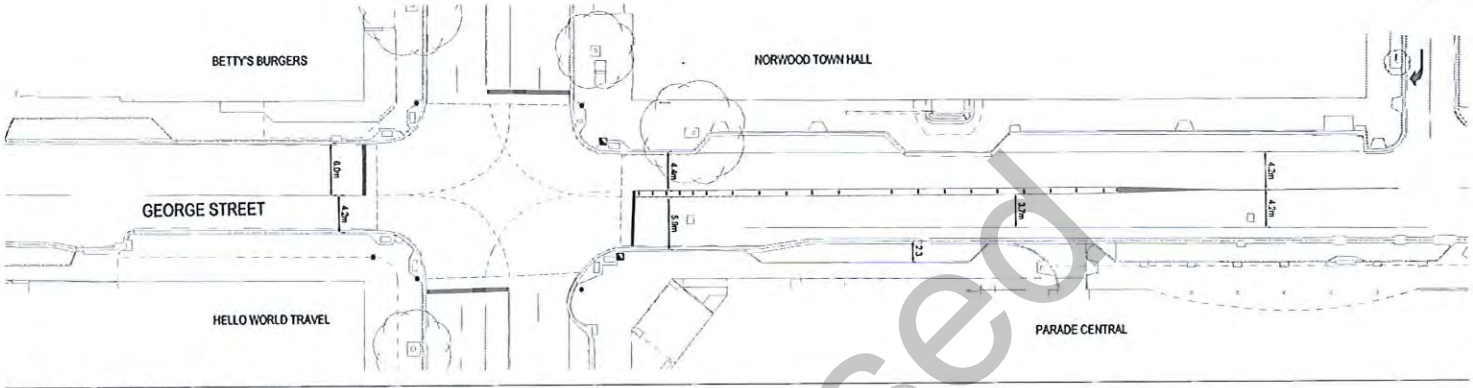
Those in favour: Cr Whitington, Cr Knoblauch, Cr Dottore, Cr Sims, Cr Granozio, Cr Callisto, Cr Mex, Cr Moorhouse and Cr Moore.

Those against: Cr Minney, Cr Duke and Cr Stock.

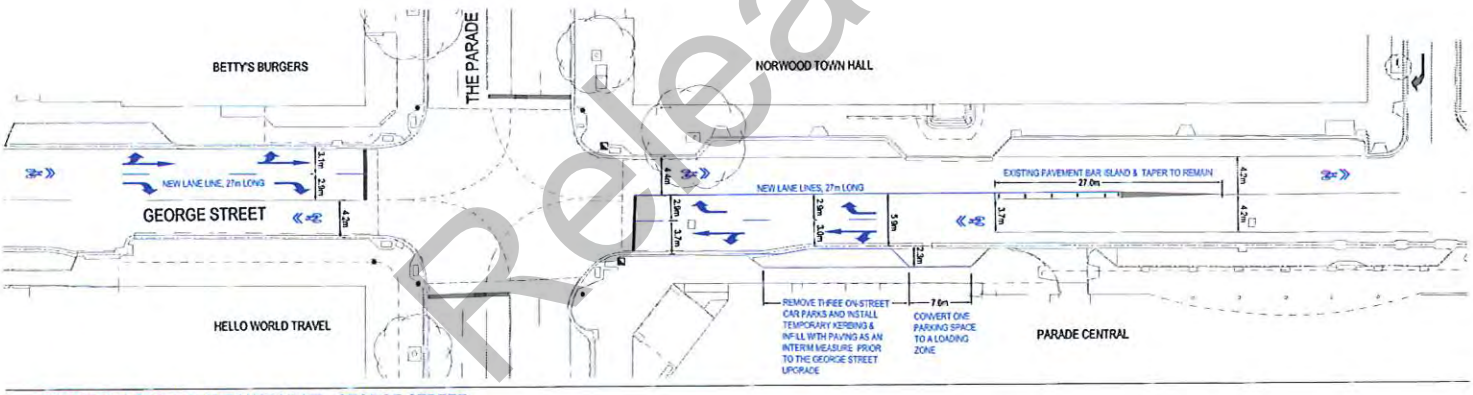
The Mayor declared the motion carried.

Cr Sims left the meeting at 8.15pm.

C



EXISTING TRAFFIC ARRANGEMENT - GEORGE STREET

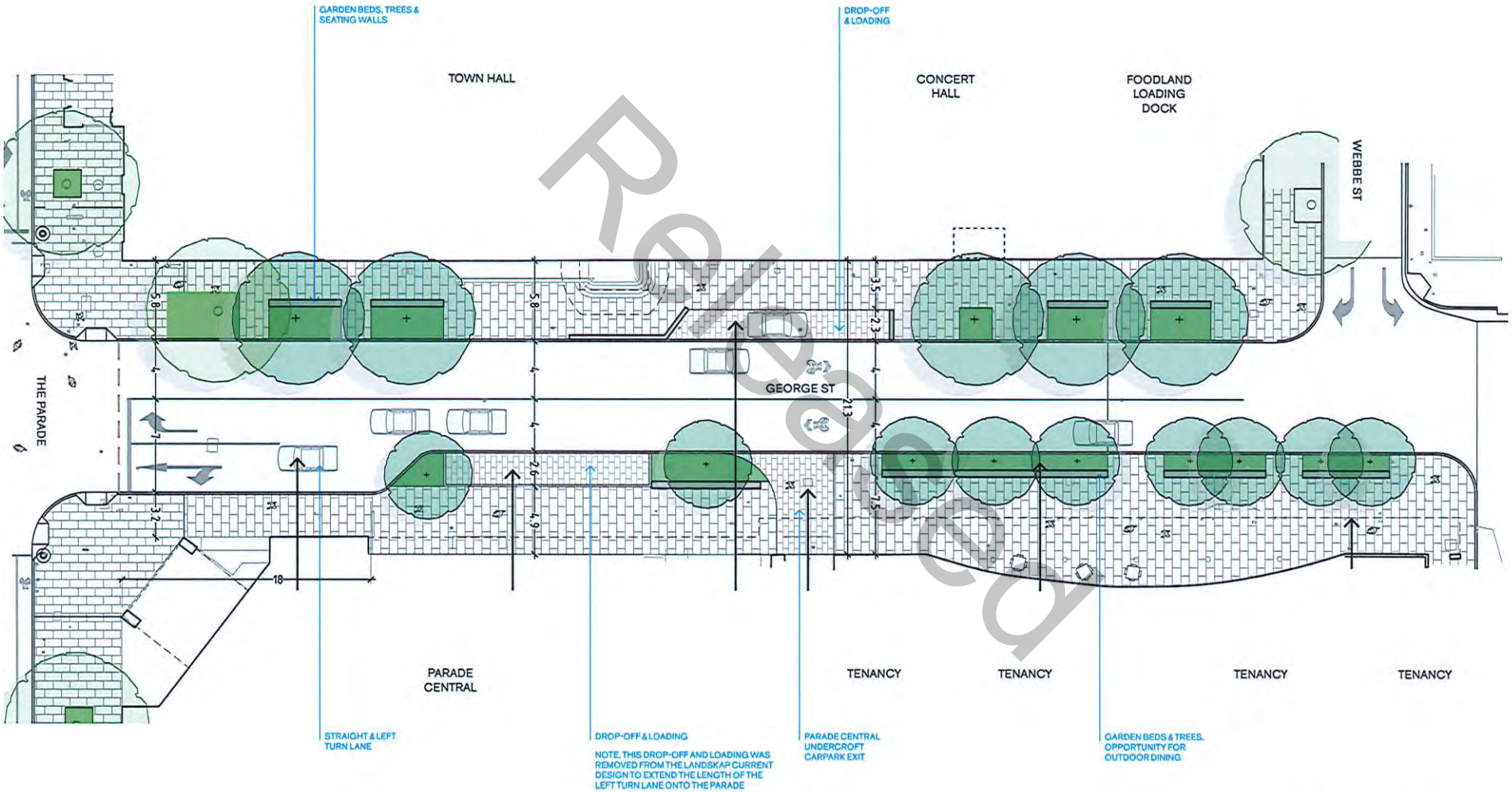


PROPOSED TRAFFIC ARRANGEMENT - GEORGE STREET

ATTACHMENT C - EXISTING AND PROPOSED TRAFFIC ARRANGEMENTS - GEORGE STREET

MASTERPLAN DESIGN

NPSP & OXIGEN LANDSCAPE ARCHITECTS, 2019



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Attachment D

Confidential

George Street Upgrade Project
Status Report

City of Norwood Payneham & St Peters
175 The Parade, Norwood SA 5067

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City of Norwood Payneham & St Peters

11.7 GEORGE STREET AND HARRIS STREET STORMWATER DRAINAGE IMPROVEMENTS

REPORT AUTHOR: Project Manager, City Projects
GENERAL MANAGER: Chief Executive Officer
CONTACT NUMBER: 8366 4524
FILE REFERENCE: qA15170
ATTACHMENTS: A

PURPOSE OF REPORT

The purpose of this report is to present to the Council the findings of stormwater modelling and detail design undertaken for local streets surrounding The Parade and George Street, Norwood.

BACKGROUND

As Elected Members may recall, in late 2016, parts of the City were inundated with flash flooding on four (4) occasions, as a result of major storm events. The number of flooding reports associated with each of the storm event are outlined below:

- **8 September 2016** - thunderstorm induced flash flooding in the Second Creek catchment (with 23 reports of flooding including 5 within dwellings);
- **14 September 2016** - winter rain long duration flooding in the First Creek catchment (with 16 reports of flooding including 4 within dwellings);
- **3 October 2016** - thunderstorm induced flash flooding in the Second Creek catchment (with 7 reports of flooding including 2 within dwellings); and
- **28 December 2016** - thunderstorm induced flash flooding in the Third Creek catchment (with 4 reports of flooding including 3 within dwellings and the "sink hole", which appeared at the intersection of Ashbrook Avenue and Lewis Road).

At its meeting held on 5 December 2016, the Council considered a report which provided details of the properties and areas which experienced flooding, based upon the information which was gathered and provided to Council staff. Included also as part of that report, were the results of the investigation undertaken by Tonkin Consulting on the rainfall and flood events, which occurred on 8 September, 14 September and 3 October 2016 and background information in relation to the following:

- stormwater drainage works constructed by the Council following flood events which occurred in 2005 and 2009;
- the Council's immediate response to the flooding issues;
- emergency resources in the future; and
- the preparation of updated Floodplain Maps.

Following consideration of the matter, the Council resolved to appoint Tonkin Consulting to undertake Flood Mapping for the entire City and submit a report detailing the findings, including a recommended strategy for addressing flooding in the Joslin Valley and Trinity / Stepney Valley. The Council also requested that a strategy be developed to improve the standard of lateral drainage and flow paths in the Joslin Valley and Trinity / Stepney Valley.

As a result of this work, the Council developed a Stormwater Drainage Program which includes the Harris Street and Wall Street drainage upgrade, which was initially identified in 2003.

Subsequently, at its meeting held on 3 October 2017, the Council considered a report which provided the results of the investigations which were initiated as part of the 5 December 2016 report. A stormwater drainage program was proposed for the 2017-2018 financial year, based on the results of the investigations. The projects were selected on a priority basis, based on the following criteria:

1. projects that would require no further investigation or be altered by the results of the Floodplain Mapping Project and subsequent strategy;
2. projects that were considered a priority where flooding of dwellings occurred (that is water entering the house and not just the building surrounds), inclusive of design and construction works;
3. projects that were considered high priority to maintain structural capacity and condition;
4. projects which were able to commence construction by December 2017, as required by the State Local Government Infrastructure Partnership (SLGIP); and
5. projects where designs were in place or design and construction can occur in one year.

George Street Drainage Upgrade 2018

In 2018, additional drainage inlets were installed by the Council on the eastern side of George Street opposite Webbe Street and connected into the Second Creek culvert to address the localised ponding of water in this location. These works were part of the endorsed 2017-2018 Stormwater Drainage Program, with grant funding being received from the State Local Government Infrastructure Partnership Program.

It should be noted that these works were only designed to address a 1 in 20 (5% AEP) event at this location. **Figure 1** illustrates the localised ponding at the George Street depression taken during a thunderstorm on 11 November 2016, which was approximately a 5% AEP event.

FIGURE 1: GEORGE STREET LOCALISED PONDING – NOVEMBER 2016

Subsequently, at its meeting held on 4 March 2019, the Council considered a report which presented the City-Wide Floodplain Maps and sought the Council's endorsement to release the information and the proposed Long Term Stormwater Drainage Program.

Following consideration of the report, the Council resolved that the level of service for stormwater drainage and design parameters, be based, where feasible and practical, on the service levels set out in **Table 1**.

TABLE 1: CITY-WIDE STORMWATER DRAINAGE SERVICE LEVELS

Stormwater Drainage Catchment / Location	Service Level
First Creek	100 year standard
Second Creek (Linde Reserve/Dunstone Grove to outlet)	100 year standard
Second Creek (upstream of Linde Reserve/Dunstone Grove)	20-50 year standard (existing)
Third Creek	100 year standard
Stonyfell Creek (upstream of Magill Road / Nelson Street)	20-50 year standard (existing)
Trinity / Stepney Valley	100 year standard
Joslin Valley	100 year standard

In addition, the Council resolved that the implementation of the Stormwater Drainage Program be undertaken as follows:

- *implementation be staged over a minimum time frame of fifteen (15) years, with the high priority projects, as identified in the report, being undertaken first; and*

- *the Program be reviewed each year as part of the annual budget process, with major reviews being conducted every five (5) years and as part of the review of the Council's Stormwater Drainage and Asset Management Plan and scheduled reviews of the Council's Long Term Financial Plan.*

The Citywide Floodplain Mapping, which was endorsed by the Council in March 2019, identified that should the current stormwater drainage network be maintained at the current standard and the impacts of increased development and climate change occur as modelled, the current stormwater drainage network will provide half the level of protection in 2050 as it does today, essentially meaning a doubling in the frequency of flooding.

As outlined in the Risk Management Section of this report, best practice is for sites to have the stormwater trunk drainage designed for a 1 in 100 year standard, however, the City of Norwood Payneham & St Peters is constrained by topography, the existing stormwater drainage network and existing development.

Therefore, drainage standards for stormwater catchments and options to offer a higher level of protection, including service standard and extent of expenditure, will be required to be assessed on a case-by-case basis and should be co-ordinated with other works, when possible.

The Parade Masterplan

As Elected Members will recall, at a Special Meeting held on 15 May 2019, the Council considered and endorsed The Parade Masterplan.

At its special meeting held on 22 November 2021, the Council resolved to award the contract for the Design Consultancy (detail design and construction documentation) associated with the Implementation of The Parade Masterplan and the George Street Upgrade Project to a multi -disciplinary consultant team led by Landskap (Architecture and Urban Design).

As part of the Project Brief for the implementation of The Parade Masterplan, the consultants are required to undertake the necessary due diligence associated with the detail design stages to ensure that the design elements which are identified in The Parade Masterplan, are resolved to a level of detail suitable to obtain an accurate indication of the cost required to deliver these elements and to address and resolve any other risks to the Council.

These due diligence works have included undertaking updated stormwater modelling of the Project scope and surrounding areas to incorporate the endorsed design elements with the objective being:

- to understand the impacts and measures required to address flood management;
- to obtain a more accurate indication of the amount of stormwater infrastructure required and the associated costs; and
- to identify and address the associated risks with implementing the infrastructure.

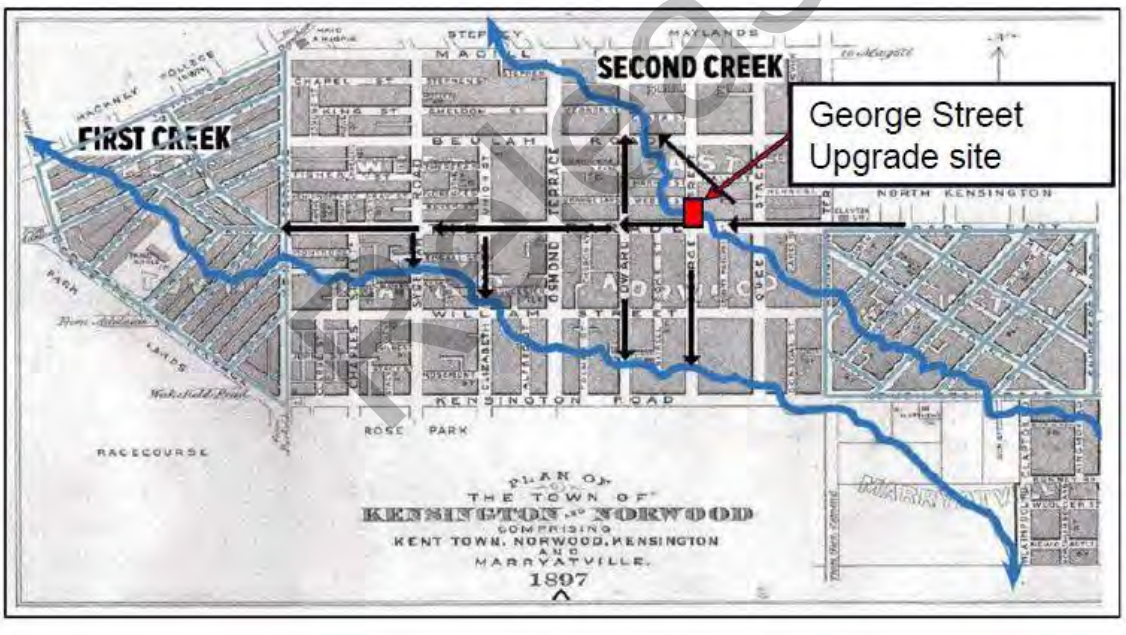
In short, when undertaking projects such as this, it is important to ensure that issues such as stormwater are identified and resolved before commencing the project. To do otherwise would mean that works would need to be removed at a later date to install the required stormwater drainage.

George Street Site Context

As endorsed by the Council, the George Street Upgrade Project is the first stage in the implementation of The Parade Masterplan. The segment of George Street which will be subject to redevelopment is located in line with the historical Second Creek alignment. Second Creek generally flows in a north westerly direction bisecting The Parade between Queen Street and George Street where it then flows across George Street to the rear of the Town Hall until turning north at Webbe Street.

This highlights that the section of George Street subject to redevelopment is located within a valley which is subject to riverine flow fluctuations and prone to flooding. **Figure 1** shows the location of the George Street Upgrade Project and the historical Second Creek alignment.

FIGURE 1: GEORGE STREET UPGRADE PROJECT SITE AND HISTORICAL SECOND CREEK ALIGNMENT



In order to address flooding associated with the low point in George Street adjacent to Webbe Street, drainage works to Harris Street and Wall Street were proposed. The works remained an unconstructed drainage project from the previous Stormwater Drainage Program, of which the costs were reviewed and adjusted for inflation for inclusion into the updated *Long Term Drainage Program* (2019). These works are currently identified for implementation in the 2032-2033 financial year at an estimated cost of $500,000.

RELEVANT STRATEGIC DIRECTIONS & POLICIES

CityPlan 2030: Mid Term Review 2020
All stormwater drainage works which are undertaken by the Council seek to implement the Council's strategic vision set out in *CityPlan 2030*: *Shaping Our Future* and its commitment to its primary objective of community well-being. The relevant Outcomes, Objectives and Strategies of the Plan are outlined below:

Outcome 1 Social Equity
A connected, accessible and pedestrian-friendly community.
Objective 1.1 Convenient and accessible services, information and facilities.
Strategy 1.1.3 Design and provide safe, high-quality facilities and spaces for all.
Objective 1.2 A people-friendly, integrated and sustainable transport network.
Strategy 1.2.2 Provide safe and accessible movement for all people.

Outcome 2 Cultural Vitality
A culturally rich and diverse City, with a strong identity, history and 'sense of place'.
Objective 2.4 Pleasant, well designed and sustainable urban environments.
Strategy 2.4.2 Encourage sustainable and quality urban design outcomes.
Strategy 2.4.3 Maximise the extent of green landscaping provided in new development and in the public realm.
Objective 2.5 Dynamic community life in public spaces and precincts.
Strategy 2.5.2 Create and provide interesting and colourful public spaces to encourage interaction and gatherings.

Outcome 3 Economic Prosperity
A dynamic and thriving centre for business and services.
Objective 3.2 Cosmopolitan business precincts contributing to the prosperity of the City.

Outcome 4 Environmental Sustainability
A leader in environmental sustainability
Objective 4.1 Sustainable and efficient management of resources.
Objective 4.2 Sustainable streets and open spaces.
Strategy 4.2.1 Improve the amenity and safety of streets for all users including reducing the impact of urban heat island effect.
Strategy 4.2.2 Protect, enhance and expand public open space
Objective 4.5 Mitigating and adapting to the impacts of a changing climate.

FINANCIAL AND BUDGET IMPLICATIONS

Long-Term Financial Management Plan 2021 – 2031

The Council endorsed its current *Stormwater Management Infrastructure Asset Management Plan (2020),* at its meeting held on 18 January 2021. The *Stormwater Management Infrastructure Asset Management Plan*, allows for long term planning of the renewal and upgrade of the Council's stormwater drainage infrastructure and assets on an ongoing basis, which in turn provides for the integration of projects across the drainage asset class, and hence, more effective and prudent use of the Council's financial resources, resulting in better outcomes for the community.

As part of the Council endorsed *2021-2031 Long-Term Financial Management Plan*, the Council has allocated a total of $30,000,000 to implement The Parade Masterplan. The works are proposed to be delivered incrementally over several financial years commencing in 2024-2025 and concluding in 2027-2028. The four (4) proposed stages comprise Sydenham Road to Osmond Terrace, Fullarton Road to Sydenham Road, Portrush Road to George Street and George Street to Osmond Terrace.

Long-Term Stormwater Drainage Program (2019)

The Long-Term Stormwater Drainage Program, which was endorsed by the Council in March 2019, included a number of stormwater drainage projects which were in the previous Stormwater Drainage Program, however had not yet been implemented. Stormwater drainage works in Harris Street and Wall Street in Norwood, is one of those projects, where the original cost estimates were reviewed and adjusted to account for inflation.

The scope of works for Harris Street and Wall Street identified in the Long-Term Stormwater Drainage Program included the installation of pipework to run from Queen Street to Second Creek via Wall Street and Harris Street to reduce gutter flows on Beulah Road between Edward Street and Queen Street, as well as reducing flows arriving at the low point on George Street adjacent to Parade Central.

Currently, these works are identified in the Long-Term Stormwater Drainage Program to be undertaken in the 2032-2033 financial year at an estimated cost of $500,000.

It should be noted that the works proposed in the 2003 study undertaken by Tonkin Consulting were based on stormwater modelling undertaken almost 20 years ago utilising a different stormwater modelling program. Therefore, regardless of whether or not the Council was undertaking the George Street Upgrade Project or not, verification of the proposed project utilising the updated software would be a necessary part of the due diligence process to verify the proposed works.

It is recognised that there will be financial and budgetary impacts associated with the implementation of works associated with the Long-Term Stormwater Drainage Program. The scale of the impacts will be dependent on the level of protection provided by the stormwater drainage network and the timeframe over which it is implemented.

Cost Estimate for George Street, Harris Street Drainage Works

The proposed stormwater drainage works in Harris Street and Wall Street in Norwood were originally identified in the Kensington and Norwood, Stormwater Drainage Study undertaken by Tonkin Consulting in 2003 and were subsequently included in the Long-Term Stormwater Drainage Program (2019).

As part of the George Street Upgrade Project, the consultants have identified an ‘alternate’ drainage design to address flooding issues in and around George Street. Subsequently, the preliminary detail design of the stormwater drainage for George Street and Harris Street was utilised to obtain a preliminary cost estimate from Rider Levett Bucknall (cost planning consultant). The preliminary cost estimate indicated a cost of approximately $600,000 to implement the alternate drainage design to George Street and Harris Street, which is 15% more than the estimated cost of $500,000 to undertake the Harris Street and Wall Street stormwater drainage works. However, the difference is that it delivers an overall better outcome, with a great level of protection.

EXTERNAL ECONOMIC IMPLICATIONS

Market Conditions, Escalations & Volatility

Unfortunately, the trend of escalation, caused by a number of factors including the degree of saturation of subcontractor capacity and the availability of local and imported materials, is predicted to continue. During 2021 and 2022, as a result of the Federal and State Government’s COVID-19 stimulus funding, together with the significant volume of stimulus works in the market and the rising cost of materials, the market has seen a significant increase in construction costs.

Some of the key factors that are likely to impact on the cost of the stormwater drainage works include:

- commercial construction tenders in the second half of 2021, showing an escalation close to 15% for the year; and
- tender returns in 2022, maintaining the inflated cost levels with no sign of decreasing at this stage.

In addition, the construction industry is experiencing significant supply chain delays, due to increases in shipping costs. Recent variants of COVID 19, have also resulted in labour shortages, which is predicted to continue to be a significant variance within the trade contractor market. In addition, rising fuel costs and the war in the Ukraine, are now also contributing to an over inflated market.

SOCIAL ISSUES

There is no question that flooding of properties is of concern and inconvenience to the respective property owners and the community in general. In addition, there is the financial burden of undertaking repairs and replacing damaged belongings, even if flood insurance is in place. The burden and impact are exacerbated if appropriate measures are not put in place by the Council to address known issues.

It is important that the implications of each project identified by the flood plain maps are assessed and a program is structured around the priority of each project, to ensure the highest priority and deferred projects are completed in an acceptable timeframe. It is also important that the level of protection across the Council is considered to ensure equity for all residents.

From a community development and equity perspective, it is important that the City has an accessible and well-maintained public realm. The redevelopment of The Parade and George Street will benefit the public by providing a streetscape which is accessible to people of all abilities and is safe and comfortable to use.

CULTURAL ISSUES

Nil.

ENVIRONMENTAL ISSUES

Flooding is an expected occurrence which can result from storm events. Flooding will naturally deposit silt and topsoil from upstream parts up the catchment onto the floodplains, which surround the creeks. However, it should be noted that the Adelaide flood plains are now heavily developed and the silt, etc. is now deposited on roads, footpaths and residential properties. The imperative to be more environmentally responsible and for example lay back banks of creeks, etc. will at times clash with the flood mitigation / drainage imperatives which often rely on the construction of pipes and culverts of high capacity to carry away high flows.

The Parade Masterplan incorporates environmental sustainability as an integral component to the future of The Parade. Climate change adaptation and resilience has been integrated into the streetscape design. It is envisaged that these strategies and actions will provide The Parade with a long-term competitive advantage, ensuring a greener identity, improved pedestrian comfort and greater protection of local businesses, buildings and infrastructure.

RESOURCE ISSUES

It is anticipated that the George Street and Harris Street Stormwater Drainage Improvements will be managed by the Project Manager, City Projects and the Project Manager, Assets.

RISK MANAGEMENT

The Council will need to determine what level of protection it wishes to provide to its community in respect to flooding. These service levels must be based on a practical and pragmatic assessment, which takes into account the flooding occurrence intervals (i.e. 1 in 20, 1 in 50, 1 in 100 etc.) including costs and achieving best practice outcomes, wherever possible.

Best practice is to ensure that stormwater trunk drainage is designed for the probability or likelihood of a 1 in 100 year event occurring or being exceeded within any given year. However, the City of Norwood Payneham & St Peters is constrained by topography, the existing stormwater drainage network and existing development.

The key performance criteria to assess the flood risk is to maintain a freeboard of 300mm to private properties, where freeboard is defined as the height difference between the flood level (1% AEP) and the floor level of a private property.

When development occurs within overland flow paths subject to high flows or in depressions subject to ponding there is an inherent risk in augmenting the existing conditions. This is particularly relevant when freeboard levels between 1% AEP flood profiles and finished floor levels are less than 300mm. The risks identified include:

- altering flow paths and exacerbating flooding either locally or by pushing flows (increasing flood depths) to other areas;
- higher levels of maintenance required by the Council over the life of the new assets;
- exposing the Council to legal proceedings when flooding has occurred in areas recently upgraded; and
- exposing the Council to reputational damage when flooding has occurred in areas recently upgraded.

Details regarding the Council's current trunk drainage standards for its catchments and options to offer a higher level of protection, including standard achievable and extent of expenditure, is assessed on a case-by-case basis and where possible staff attempt to identify opportunities to co-ordinate drainage works with other works to reduce costs and rework.

CONSULTATION

- **Elected Members**
  An Information Session was held on 3 August 2022, where Elected Members were provided with an overview of the updated stormwater modelling for The Parade and George Street Projects which has been undertaken by Dryside Engineering (consultant). The presentation outlined the design measures that have been undertaken to mitigate the risks associated with flooding for the Implementation of the George Street Upgrade Project.

- **Community**
  The Community was consulted and engaged through the Phase 1, Phase 2 and Phase 3 Community Consultation and Engagement process for The Parade Masterplan. Consultation with relevant stakeholders has commenced and will continue throughout the design and construction stages of the project.

- **Staff**
  General Manager, Corporate Services;
  Manager, Economic Development & Strategic Projects;
  Manager, Integrated Transport & Access;
  Project Manager, Urban Design & Special Projects; and
  Project Manager, Assets

- **Other Agencies**
  Not Applicable.

DISCUSSION

As part of the detailed design for implementation of The Parade Masterplan and George Street Upgrade Projects, the Project consultants have undertaken stormwater modelling for The Parade and George Street, for the purposes of informing the development of the detail design for The Parade and George Street with the objective of identifying and addressing any risks associated with stormwater management.

The modelling was undertaken using the flood modelling software TUFLOW. The flood modelling was based on the existing flood maps developed for the Council by Tonkin Consulting in 2017.

The stormwater modelling was used to produce maps for the existing conditions for the following annual exceedance probability rainfall (% AEP) in a given year:

- 20% AEP – 20% chance (~1 in 5 year)
- 5% AEP – 5% chance (~1 in 20 year)
- 2% AEP – 2% chance (~1 in 50 year)
- 1% AEP – 1% chance (~1 in 100 year)

Once the existing conditions are understood, site specific design solutions can be iteratively developed, based on further flood modelling of the proposed design to ensure that flood management is addressed through detail design and due consideration is given to maintaining the desired outcomes which the Council has endorsed in The Parade Masterplan.

The Parade and George Street are located within the First Creek and Second Creek stormwater catchments, where the current stormwater drainage standard and the potential to increase the standard in these catchments is outlined below:

- First Creek has large sections of the creek at a 1% AEP standard, due to works that the Council undertook following flooding which occurred in 2005. There are several locations that remain with a standard less than a 5% AEP protection. It is possible to increase the general standard of the creek to a 1% AEP standard by undertaking additional works in key locations.

- Second Creek has a consistent capacity along the length of the Creek, which is approximately a 2-5% AEP standard with the alignment of the creek primarily within easements on private property and is therefore much more restricted in regards to the ability to upgrade capacity.

Second Creek

Historical records indicate that Second Creek was intercepted and converted to an underground box culvert in 1950. The majority of Second Creek within The Parade's zone of influence, is an enclosed box culvert which is 3.0 metres wide x 1.5 metres high. The one segment where the creek is open is within the St Ignatius School on Queen Street. The box culvert travels north down Queen Street, runs west along The Parade and turns north onto George Street. The culvert then bends west again into Webbe Street ultimately heading in a north west direction through the Webbe Street carpark.

Once the capacity of the culvert is exceeded, overland flow is triggered and is subject to site gradings and overland flow paths, which are generally serviced by minor drainage kerb-side stormwater drainage pits. Controlling or limiting breakout flows can greatly assist in flood mitigation during 1% AEP events, as once these flows become overland flow paths, it becomes difficult to drain them during the 1% AEP event. **Figure 2** shows the alignment of the Second Creek culvert in relation to The Parade and George Street.

FIGURE 2: GEORGE STREET LOCATION AND SECOND CREEK CULVERT ALIGNMENT

The Parade and George Street Overland Flow Mechanisms

There are three (3) potential causes of flooding along The Parade and George Street namely:

1. Second Creek culvert capacity being breached;
2. Second Creek culvert surcharging; and
3. localised stormwater catchments – (i.e. local street and property run-off.)

The overland flow derived from Second Creek culvert breach and surcharge are identified as the critical storm events. These larger critical events, which occur over a 90 minute event duration, is flooding that is driven by creek flows from a much larger catchment and associated volume of water moving through the stormwater system

The overland flow derived from localised stormwater catchments is identified as shorter-term events equated to shorter, more intense storm events which occur over a 15-20 minute event duration and are: typically contained to roads where buildings drain to from an elevated height, (i.e. roof to kerb.)

George Street Flood Mechanisms and Existing Conditions Flood Maps

To understand the flood mechanisms of George Street it is important to understand the upstream flood mechanisms of Second Creek, which is the source of major flooding in the area.

Flooding which occurs along The Parade, down George Street and beyond along the Second Creek alignment, are all governed by the 90-minute critical event.

This flooding is associated with the breaching of the open or 'daylighted' section of the Second Creek culvert located within St Ignatius School on Queen Street. Surcharges from the open culvert occur at approximately one cubic metre per second ($1m^3/s$) during the 1% AEP event. The resulting overland flow is characterised by:

- breaching of the road reserve in Queen Street with overland flow heading north-west inundating the rear of properties on the southern side of The Parade;
- overland flows re-enter the southern side of The Parade, where ponding occurs at the George Street / The Parade intersection;
- flood extents increase with water flow breaching the crown of the Parade and heading north down George Street.
- stormwater flows breach the northern kerb outstand, located at The Parade and George Street intersection;
- stormwater flows combine and flow north to the depression located on the east side of George Street opposite the Webbe Street intersection;
- surcharging occurs in this location through the drainage pits which were installed in 2018 as part of the 2017-2018 Drainage Program;
- flooding is contained within the eastern side of George Street and gets to a maximum depth of approximately 350mm during a 1% AEP event at the depression in George Street opposite Webbe Street. The freeboard at this location between the Parade Central's lowest shop front doorway and the flood profile is approximately 80-85mm; and
- overland flows head down Webbe Street and at the Harris Street intersection.

Figures 3 and **4** illustrate the existing condition flood maps for portions of The Parade, Queen Street, George Street, Edward Street, Webbe Street, Harris Street and Austral Place for the 1% AEP event. The entire set of five (5) Existing Conditions Flood Maps for these streets is provided in **Attachment A**.

FIGURE 3: EXISTING CONDITIONS – 1% AEP FLOOD EVENT – THE PARADE TO QUEEN AND GEORGE STREET, NORWOOD

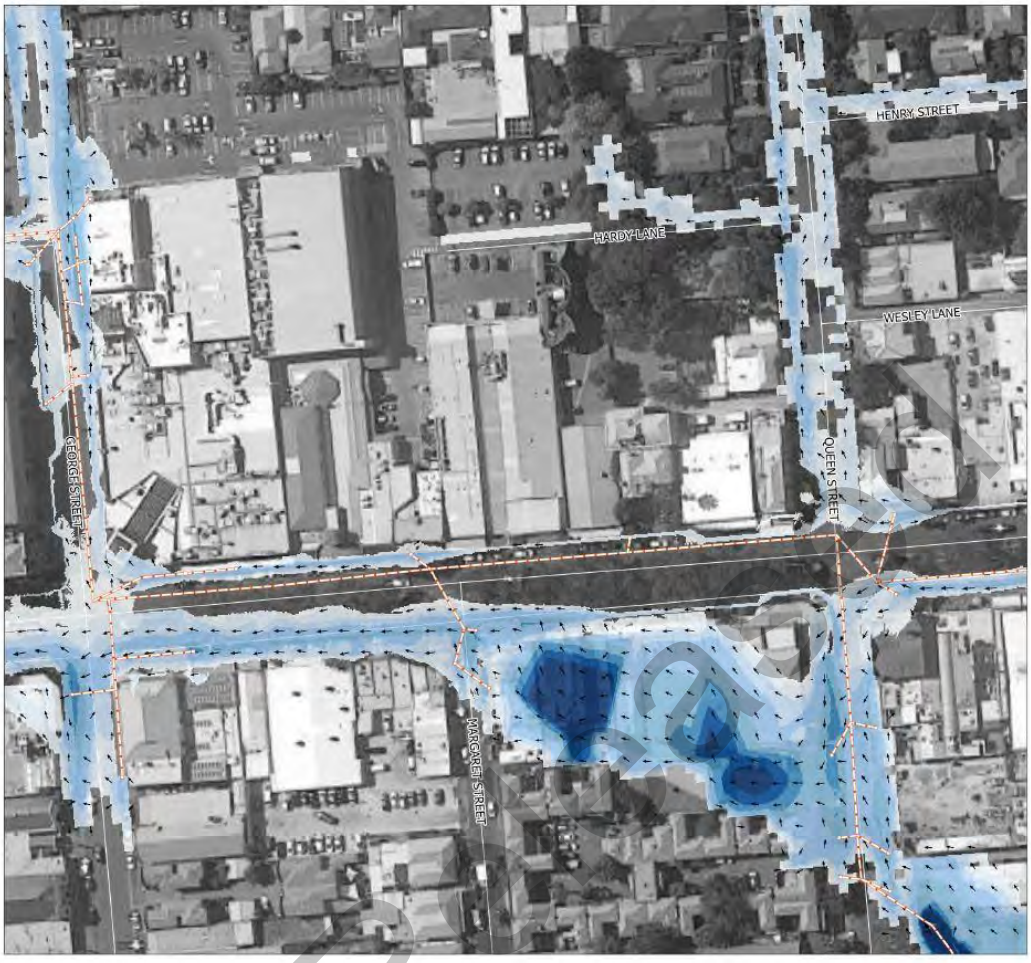
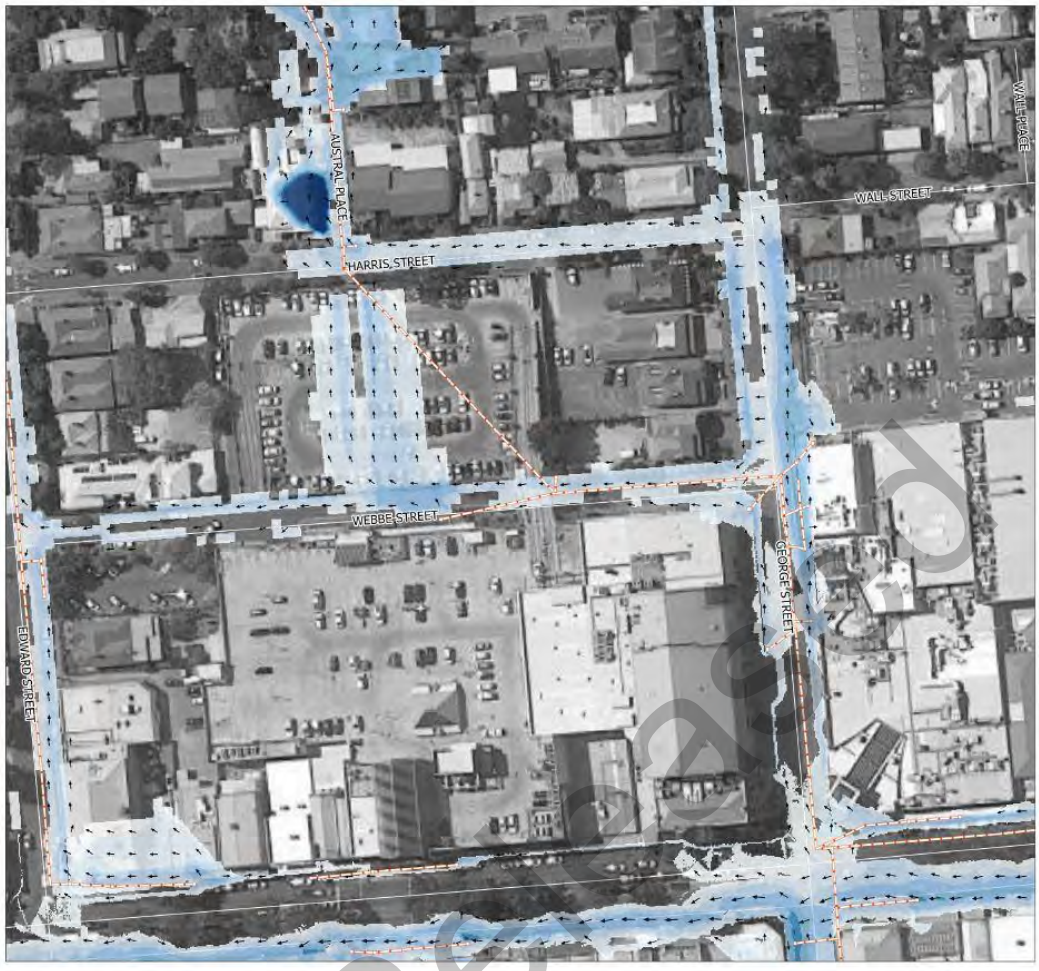


FIGURE 4: EXISTING CONDITIONS – 1% AEP FLOOD EVENT – THE PARADE TO GEORGE, EDWARD AND HARRIS STREET, NORWOOD



Design Constraints and Risks

The following constraints have been identified as part of the existing conditions flood mapping of The Parade and George Street and in particular, will need to be addressed through the detail design for George Street, which include:

- loss of flood conveyance capacity within kerbing and overland flow paths, where footpaths are widened;
- preventing loss of flood storage in topographic depressions; and
- preventing additional flow through upstream diversion or additional surcharge via new connections into pressurised segments of the Second Creek culvert.

Development of George Street Design

Following detailed analysis of the existing conditions flood mapping and the design constraints and risks associated with the George Street Upgrade Project, the consultants progressed with developing the detail design for George Street based on the Concept Design which has been endorsed by the Council. A key requirement as part of the Project brief for the detail design for The Parade and including George Street, was for the consultants to develop cost effective design solutions wherever possible.

An iterative design process has been undertaken, with additional flood modelling being undertaken to test the design options associated with flood management within George Street. The Concept Design was further developed by the consultants and tested to identify the requirements to manage stormwater, which included the following design options:

- the removal of carparking spaces and converting footpaths and garden beds with new tree planting adjusted to the footpath levels;
- strategically installing new drainage inlets to capture overland flow which 'tops over' The Parade into George Street and connect into the Second Creek Culvert in George Street to address overland flows;
- converting the existing junction pits in the George Street roadway which are connected to the Second Creek culvert into additional drainage inlet pits where possible, to minimise the need for additional new infrastructure;
- creating a depressed channel through the garden bed on the eastern side of George Street;
- widening the garden beds on the eastern side of George Street; and
- introducing one-way valves on the drainage connections into the Second Creek culvert

The key findings of the flood modelling undertaken for the Concept Design for George Street for a 1% AEP event included:

- the Second Creek culvert is pressurised on George Street closer to the Webbe Street intersection and additional connection points into the culvert at this location will need to manage surcharge;
- there is a significant loss of flood storage and flood conveyance at the location of the eastern George Street depression, which has forced water elsewhere increasing flood depths;
- flood water has been directed into the Parade Central underground carpark due to loss of flood conveyance;
- additional pits are ineffective in capturing inflows upstream on George Street near The Parade section as the culvert is at capacity and therefore cannot accept the flows;
- no additional stormwater flow is entering the area as the difference between the Concept Design and Existing Conditions Flood Maps equalise downstream at Harris Street; and
- there was no change to the freeboard of 80-85mm which was identified in the existing conditions Flood Maps at the lowest shopfront to the Parade Central development.

As was previously outlined in the Risk Management Section of this report, there are inherent risks in augmenting the existing conditions within overland flow paths subject to high flows or in depressions subject to ponding. This is particularly relevant when freeboard levels between 1% AEP flood profiles and finished floor levels are less than 300mm.

Following the findings of the detail design iterations and the flood modelling, the consultants and Council staff met to identify and assess further amendments to the design to provide an improvement to the existing conditions with respect to stormwater management in George Street. This included lowering the road level in George Street to increase storage capacity.

Lowering of the George Street roadway was not pursued further due to the following reasons:

- SA Power Networks, SA Water, APA Gas and Telstra assets are located within the George Street roadway which would require relocation at a significant cost to the Council;
- lowering the road would require a full rebuild of the road pavement at a significant cost to the council;
- soil contamination testing undertaken on George Street has identified contaminated soil; and
- lowering the road levels in George Street could impact the structural performance of the Second Creek culvert.

Based on the results of the flood modelling and further assessment and review of the design, it was determined that there were a number of risks associated with the current design and that an alternate option should be developed to address flood management in George Street. It was determined that due to the level of investment that the Council has committed to the George Street Upgrade Project, the alternate option should look to provide an improvement on the existing conditions with respect to flood performance.

Alternate Option Development

It was subsequently determined that a more holistic approach, focussing on flood sources and flood management should be investigated to address the flood risk associated with the upgrade of George Street. A number of alternate options were subsequently considered to address stormwater management. These options included:

- the installation of a detention structure to capture and hold overland flows which enter into George Street;
- capping the open section of the Second Creek culvert at St Ignatius School in Queen Street which is a significant cause of the overland flow on The Parade and George Street; and
- de-coupling the Second Creek culvert from George Street and installing a separate stormwater system in George Street to service the stormwater associated with properties in George Street and overland flow.

Preliminary investigations were undertaken for each of these options which determined the following:

- there would be insufficient space within the immediate area of George Street to install a detention structure to capture the volume of stormwater required to address flooding and there would be significant costs associated with the construction of this type of structure in an urbanised location and therefore this option should not be further investigated;
- flood modelling of the capping of the Second Creek culvert at St Ignatius School Norwood, has identified an increase in surcharge at key locations further downstream in the system that are already occurring. Capping the Second Creek culvert could not be undertaken as a standalone project and would require additional works to be undertaken to the stormwater system downstream to address surcharge. This would require a significant amount of work to occur on private properties and there would be significant costs to construct the works required and, on this basis, it was determined that this option should not be further investigated; and
- to review the proposed Harris Street and Wall Street stormwater drainage works identified in the *Long-Term Stormwater Drainage Program* (2019) and to investigate the suitability of the drainage works to act as a separate system on George Street. The endorsed Parade Masterplan was used as the basis for further stormwater modelling.

A desktop review of the Harris Street and Wall Street stormwater drainage works was undertaken by the consultants and it was determined that an alternate configuration incorporating a trunk stormwater drain along George Street and Harris Street, which would connect into the Second Creek culvert in Harris Street at Austral Lane, would be able to address the flooding associated with the depression in George Street, opposite Webbe Street, whilst also addressing stormwater management within the greater area. The original Harris Street and Wall Street stormwater drainage alignment and alternate alignment of George Street and Harris Street, are illustrated in **Figure 5** and **Figure 6**.

The objective of the George Street and Harris Street parallel stormwater drain option is to intercept previously surcharging drains and discharge stormwater north down George Street, into Harris Street then connecting into the Second Creek culvert where the culvert is approximately two (2) metres deeper than the previous connection points. This provides in-pipe storage and additional driving head to discharge flows into the culvert.

The George Street and Harris Street stormwater drainage option comprises of the following:

- a parallel stormwater drain running parallel along the eastern side of the culvert on George Street intercepting and replacing existing inlet pits along the eastern side of the street. and
- inlet pits between Webbe Street and Harris Street, where previously there were none.

FIGURE 5: LONG TERM DRAINAGE PROGRAM – PROPOSED HARRIS STREET AND WALL STREET STORMWATER DRAINAGE WORKS 2003

FIGURE 6: ALTERNATE DESIGN – GEORGE STREET AND HARRIS STREET STORMWATER DRAINAGE WORKS 2022

Flood modelling was subsequently undertaken on the George Street and Harris Street stormwater option to determine the effectiveness of the proposed stormwater configuration.

The results of the flood modelling have identified the following:

- a large reduction of flooding at the George Street depression;
- removal all flooding associated with the 1% AEP event along George Street between Webbe Street and Harris Street; and
- within the wider catchment, a reduced flooding through private property between Harris Street and Beulah Road and a large reduction of flooding at the Edward Street and Clara Street depression.

Figure 7 shows the 1% AEP existing conditions flood map for George Street and Harris Street and **Figure 8** shows the 1% AEP Afflux flood map for George Street and Harris Street.

The 1% AEP Afflux flood map shows the change in flood levels between the existing conditions and the proposed drainage scenario.

The 1% AEP Afflux flood map illustrates areas in black where there was previously surface water in the 1% AEP event are now dry, which include the localised depression in George Street opposite Webbe Street.

Upon reviewing the results of the flood mapping for the alternate stormwater drainage option for George Street, it was determined that the risks associated with the flooding of private properties associated with the George Street Upgrade Project has been adequately addressed, as well as providing an overall improvement to the Norwood area in terms of stormwater management. On this basis of these results, it was recommended that this stormwater configuration be adopted to facilitate the implementation of the endorsed George Street Upgrade.

FIGURE 7: FLOOD MAP 1% AEP – GEORGE STREET AND HARRIS STREET EXISTING CONDITIONS

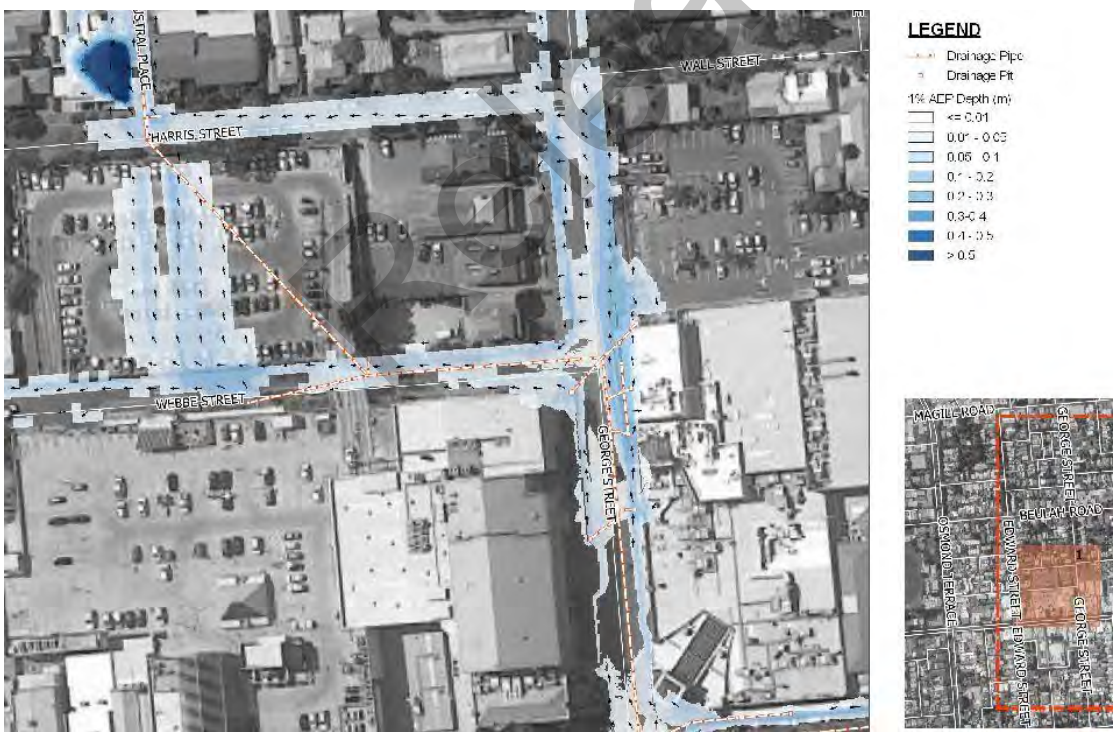
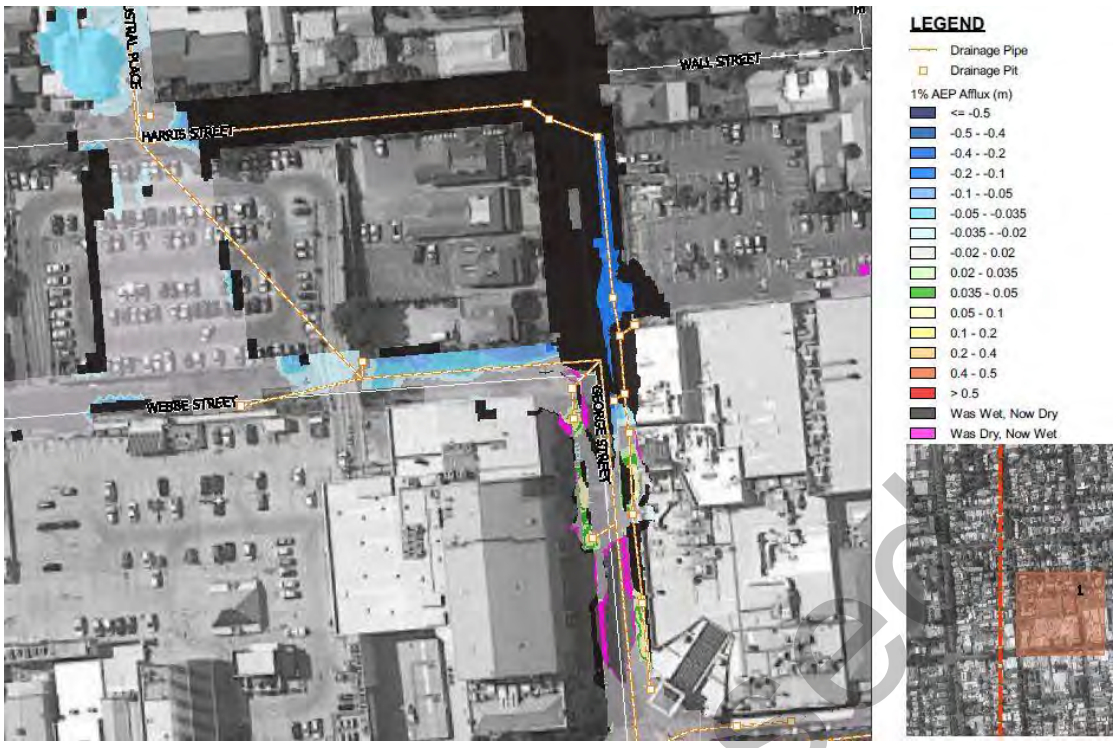


FIGURE 8: FLOOD MAP 1% AEP AFFLUX – GEORGE STREET AND HARRIS STREET ALTERNATE DESIGN



Implementation of the George Street and Harris Street Stormwater Drainage Improvement Works

Prior to undertaking any construction works associated with the George Street Upgrade Project it will be critical to ensure that the stormwater drainage improvement works in George Street and Harris Street, are installed prior to any construction works being undertaken on the eastern side of George Street to ensure that the private properties stormwater and any potential overland flow from a flood event, can be managed through the de-coupled stormwater system and hence, prevent any flooding. Coordinating this drainage works with the George Street Upgrade works will eliminate the need to undertake the work at a later date as was previous scheduled

OPTIONS

The Council has several options available in respect to the drainage improvement works in George Street and Harris Street which are required.

Option 1

The Council can resolve to proceed with the works as proposed in this report. To facilitate these works, it is proposed that approximately $600,000 from the existing Stormwater Drainage Program, which has been allocated to the Trinity Valley Project be redirected to the George Street and Harris Street Stormwater Drainage Improvement Project. The amended schedule for the Trinity Valley Drainage Project will result in a portion of allocated budget not being spent this financial year.

This will allow the Council to bring forward the funding for the stormwater works identified in the Long-Term Stormwater Drainage Plan which were originally allocated for Harris Street and Wall Street stormwater drainage works in 2032-2033 and undertake the George Street and Harris Street 'alternate' stormwater drainage works in 2022-2023 prior to undertaking the George Street Upgrade Project.

This option is **recommended** as it will ensure that the drainage works in the Long-Term Stormwater Drainage Plan and George Street Upgrade Project are integrated and co-ordinated. This will ensure that the risks associated with flooding in and around George Street are addressed now. This will also ensure that the Council delivers its assets to the community in efficient and cost-effective manner. This will also ensure that the stormwater drainage improvement works can commence in early 2023 and prior to the George Street Upgrade commencing.

Option 2

Alternatively, the Council can seek to obtain the funding to undertake the stormwater drainage improvement works from the Federal Government's *Local Roads and Community Infrastructure Program (LRCI)* Phase *3 Extension*. Under the Phase 3 Extension, if successful, the Council would receive a funding allocation of $444,393, equal to the previous Phase 1 funding allocation which it has received.

It should be noted that the *LRCI Stage 3 Extension* funding will only be available from 1 July 2023, with construction required to be completed by 30 June 2024. This would mean that the construction of the George Street Upgrade Project could not commence until this work is completed, as it will be essential to install the stormwater drainage prior to undertaking the construction of the street upgrade works.

This option is **not recommended** as it will delay the commencement of the drainage improvement works until July 2023 at the earliest. The delay will mean that there will be construction activity in and around George Street through the busy 2023 Christmas trading period causing disruption.

Option 3

The Council can resolve to undertake the implementation of the George Street Upgrade Project in several stages. This would entail undertaking the construction of the western side of George Street in 2022-2023 only as the works proposed will not impact the stormwater management on the eastern side of George Street which is subject to flooding. Under this option it is proposed to undertake the drainage improvement works and remainder of the George Street Upgrade to the eastern side of George Street in 2023-2024.

This Option is **not recommended** on the basis that there would be significant additional costs to the Project associated with the requirement to undertake multiple mobilisations of contractor plant and resources to undertake the works. There would also be impacts to traffic management in the local area as a result of the works being undertaken over a long duration (i.e. several financial years).

CONCLUSION

Based on the Citywide Floodplain Mapping which was undertaken in 2019, it has been identified that there are currently flood risks present in George Street, which are associated with the localised depression in the eastern side of the George Street roadway opposite Webbe Street. This known flood risk has been identified and incorporated in the *Long-Term Drainage Plan (2019)* scheduled for 2032-2033.

Whilst minor drainage works were installed at this location in 2018, to address smaller flood events (5% AEP or 1 in 20), these modifications have not sufficiently mitigated the risk of flooding. Given that the Council is investing in the George Street Upgrade Project, it is only sensible and prudent to implement stormwater drainage improvements at the same time.

A thorough and iterative due diligence and design process (as set out in this report) has investigated a wide range of localised measures to address flood management in this location to minimise the cost of installing additional infrastructure wherever possible. These measures have not been able to sufficiently address a range of risks associated with flooding in this location. Following a significant number of investigations and reviews, it has been determined that a more holistic approach, focussing on flood sources and a more robust means of flood management should be adopted.

The recommended stormwater drainage solution has been able to address the flood risks associated with the George Street Upgrade Project and also at the same time address the flood risks in the greater Norwood area, which were identified as part of the Harris Street and Wall Street drainage works in the Long-Term Stormwater Drainage Program. The alternate design has also been checked and verified by undertaking updated stormwater modelling.

By integrating the designs and co-ordinating the delivery of these projects, the Council will be able to realise cost efficiencies in the delivery of its assets to the community and avoid the need for any abortive works and reputational risk if these projects were to occur separately.

COMMENTS

As Elected Members are aware, the George Street Upgrade Project has been endorsed and funded by the Council as part of the 2020-2021 Budget. Therefore the Detail Design and Construction Documentation is being completed as a matter of priority to deliver the Project as approved by the Council. Due to potential flood risks which have been identified, the stormwater drainage improvements for George Street and Harris Street should be undertaken prior to constructing the George Street Upgrade Project rather than completing the George Street Upgrade Project now and undertaking the stormwater drainage works in 2032-2033.

At its meeting held on 1 August 2022, the Council adopted the *Local Government Elections Caretaker Policy* (the Policy), which applies to the Local Government Election, which will be held in November 2022. The Policy stipulates that the Caretaker Period will commence at the close of nominations on Tuesday, 6 September 2022 and will expire at the conclusion of the election, when the results have been officially declared by the Electoral Commissioner.

The Policy aims to ensure that the Council conducts its business throughout the Election Period in a responsible and transparent manner and in accordance with the relevant statutory requirements and that the Council avoids actions and decisions which could be perceived as intended to affect the results of an election or have a significant impact on the incoming Council.

During the Caretaker Period the Council is prohibited from making a Designated Decision, which includes entering into a contract, the total value of which exceeds $100,000 or 1% of the Council's revenue from rates in the preceding financial year, except where it is:

- in response to an emergency or disaster;
- for the purposes of road construction, road maintenance or drainage works (i.e. Prescribed Contracts); or
- an expenditure or other decision required to be taken in association with grant funding, which the Council has received from either the State or Commonwealth Governments.

Prescribed Contracts are expressly excluded from the types of contracts which are able to be the subject of a Designed Decision. A 'Prescribed Contract' is defined in Section 91A of the *Local Government (Elections) Act 1999* to mean a Contract entered into by a Council for the purpose of undertaking road construction, road maintenance or drainage works. Prescribed Contracts are designed to allow the Council to continue with its core road and drainage infrastructure work unaffected by the Caretaker Period.

RECOMMENDATION

1. That the George Street and Harris Street Stormwater Drainage Improvement Project, as outlined in this report, be endorsed.

2. That $600,000 be redirected from the Trinity Valley Stormwater Upgrade Project to the delivery of the George Street and Harris Street Stormwater Drainage Improvement Project, to enable the Project to be constructed in 2022-2023.

3. That the Council notes that the George Street and Harris Street Stormwater Drainage Improvement Project will be delivered prior to the commencement of the George Street Upgrade Project.

4. That the Council delegates to the Chief Executive Officer the authority to award the tender for the George Street Harris Street Drainage Improvement Project during the Council's Caretaker Period, on the condition that the tender which is received does not exceed $600,000.

5. That the Mayor and Chief Executive Officer be authorised to sign and seal the documents associated with the awarding of the contract for the construction of the George Street and Harris Street Stormwater Drainage Improvement Project.

6. That the Council notes that should the tender for the George Street and Harris Street Stormwater Drainage Improvement Project exceed $600,000, the matter will be deferred for consideration by the Council, following the conclusion of the 2022 Local Government Election.

Cr Sims returned to the meeting at 8.16pm.

Cr Sims moved:

1. *That the George Street and Harris Street Stormwater Drainage Improvement Project, as outlined in this report, be endorsed.*

2. *That $600,000 be redirected from the Trinity Valley Stormwater Upgrade Project to the delivery of the George Street and Harris Street Stormwater Drainage Improvement Project, to enable the Project to be constructed in 2022-2023.*

3. *That the Council notes that the George Street and Harris Street Stormwater Drainage Improvement Project will be delivered prior to the commencement of the George Street Upgrade Project.*

4. *That the Council delegates to the Chief Executive Officer the authority to award the tender for the George Street Harris Street Drainage Improvement Project during the Council's Caretaker Period, on the condition that the tender which is received does not exceed $600,000.*

5. *That the Mayor and Chief Executive Officer be authorised to sign and seal the documents associated with the awarding of the contract for the construction of the George Street and Harris Street Stormwater Drainage Improvement Project.*

6. *That the Council notes that should the tender for the George Street and Harris Street Stormwater Drainage Improvement Project exceed $600,000, the matter will be deferred for consideration by the Council, following the conclusion of the 2022 Local Government Election.*

Seconded by Cr Dottore and carried unanimously.

Attachment E

Confidential

George Street Upgrade Project
Status Report

City of Norwood Payneham & St Peters
175 The Parade, Norwood SA 5067

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City of Norwood Payneham & St Peters

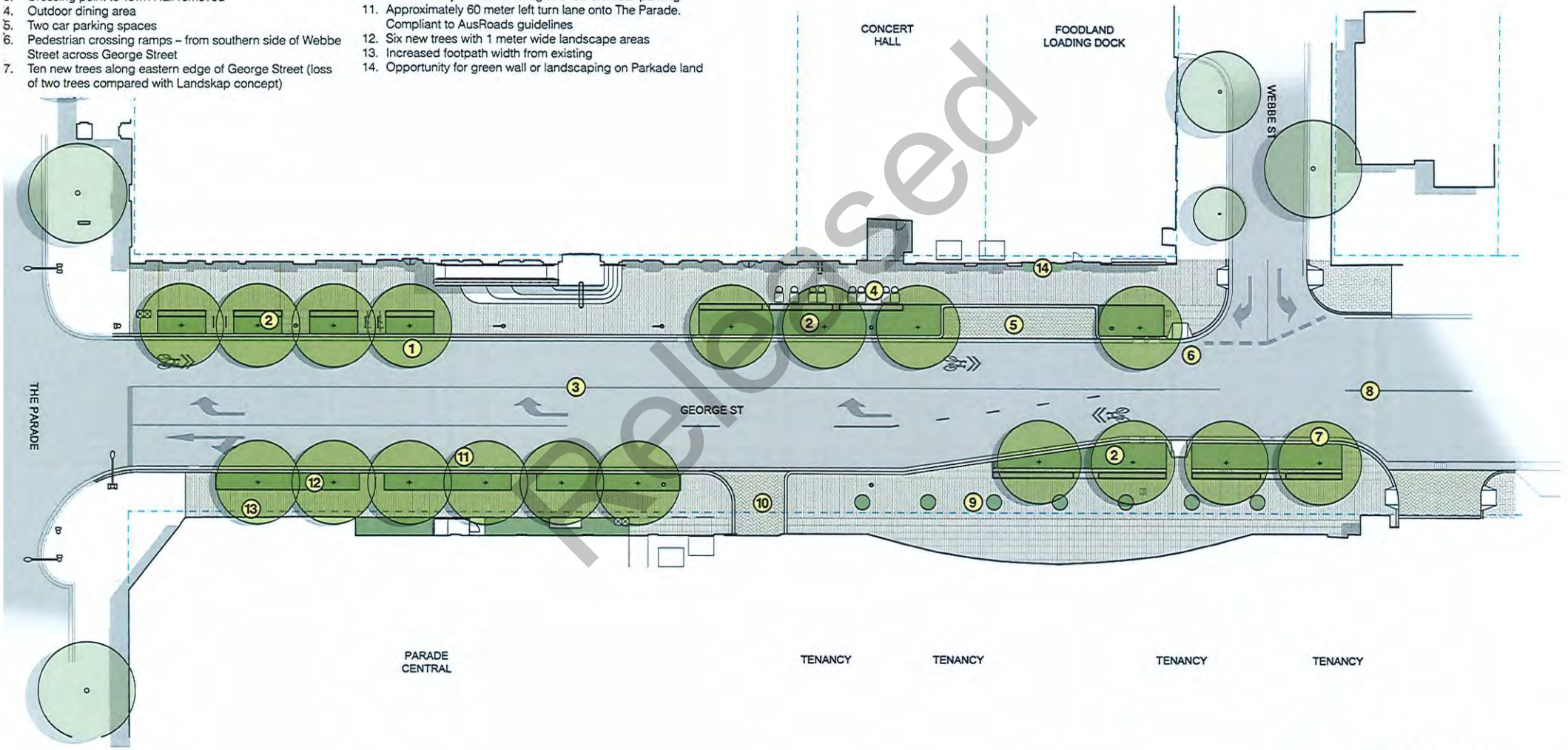
George Street

URBAN DESIGN REVIEW | ISSUED 02.05.2023

WAX DESIGN - REVISED URBAN DESIGN APPROACH

Urban Design Outcomes

1. Eight new trees along western edge of George Street
2. Removal of existing on-street car parking and establishment of garden beds
3. Crossing point to Town Hall removed
4. Outdoor dining area
5. Two car parking spaces
6. Pedestrian crossing ramps – from southern side of Webbe Street across George Street
7. Ten new trees along eastern edge of George Street (loss of two trees compared with Landskap concept)
8. Shared use of roadway by cyclists
9. Additional garden beds around existing vines to Hoyts building facade
10. Left turn only vehicle existing to undercroft car parking
11. Approximately 60 meter left turn lane onto The Parade. Compliant to AusRoads guidelines
12. Six new trees with 1 meter wide landscape areas
13. Increased footpath width from existing
14. Opportunity for green wall or landscaping on Parkade land



Attachment F

Confidential

George Street Upgrade Project
Status Report

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City of Norwood Payneham & St Peters

GEORGE STREET CAPACITY ANALYSIS
THE PARAGE/GEORGE STREET, NORWOOD

SIDRA MODELLING REPORT

CIRQA™

DISCLAIMER

DOCUMENT CONTROL

Report title:	George Street Capacity Analysis – The Parade/George Street, Norwood SIDRA Modelling Report
Project number:	21468
Client:	Parkade Pty Ltd & Australasian Property Group Pty Ltd
Client contact:	Spero Tsapaliaris & Pep Rocca

Version	Date	Details/status	Prepared by	Approved by
Draft 1	11 May 23	For review	JJB/TAW	TAW/BNW
Draft 2	23 May 23	For review	TAW	BNW
V1	05 Jun 23	For discussion	TAW	TAW/BNW

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1. EXECUTIVE SUMMARY

CIRQA has been engaged by Parkade Pty Ltd and Australasian Property Group Pty Ltd to undertake traffic analyses of the signalised intersection of The Parade and George Street, Norwood. The analyses seek to determine potential traffic impacts arising from the implementation of a conceptual upgrade design proposed by the City of Norwood Payneham and St Peters (Council) for George Street (between The Parade and George Street).

The concept design was originally derived during development of The Parade Master Plan, which was subsequently endorsed by The Council at a special meeting held on 15 May 2019.

However, since the endorsement of the concept design, The Parade and George Street intersection was upgraded to include separated right turn lanes and a scramble crossing, the former of which was not specifically identified within the Master Plan (albeit the Master Plan did envisage the retention of right turn movements from The Parade at all times).

Furthermore, various developments have since been approved and/or constructed, none of which were considered during the derivation of the Master Plan. Of particular note, COMO is currently under construction on the southern side of The Parade, with vehicle access provided directly via George Street.

Since the endorsement of the Master Plan concept, Council has also engaged an external consultant Project Team to further progress development of the George Street concept design. A 'revised concept design' has subsequently been developed, an iteration of which was subsequently presented to The Council (at a meeting held on 5 September 2022).

At the same meeting, The Council was also presented with plan illustrating alterations to the George Street linemarking and was asked to 'note' that changes be implemented "*... over the next couple of months*". The linemarking changes (resulting in the delineation of two approach lanes on both the northern and southern George Street approaches to The Parade) have since been implemented.

However, in comparison to the linemarking changes implemented, the 'revised concept design' seeks to improve the public realm of George Street, albeit on the northern side of The Parade only (south of Webbe Street). Relative to traffic, the changes sought include (but are not limited to) removal of the indented parking lane on the eastern side of George Street (between The Parade and Webbe Street), removal of the on-street bicycle lane on the eastern side of George

Street, and narrowing of the southbound George Street approach lane (via relocation of the eastern George Street kerb, further west into the George Street carriageway).

Of particular importance, it is understood that no detailed traffic investigation analyses (i.e. detailed SIDRA Intersection modelling) have been undertaken by Council (or it's consultant Project Team) to inform the 'revised concept design'.

The aforementioned changes are inevitably anticipated (by Parkade and Australasian Property Group) to impact upon traffic movement on George Street as well as the operation of The Parade/George Street intersection. In order to interrogate this claim, SIDRA Intersection modelling analyses of The Parade and George Street have been undertaken by CIRQA. Specifically, analyses were undertaken for the following scenarios:

- existing (at the time of writing) intersection configuration (inclusive of recent linemarking changes implemented by Council);
- existing configuration (as above), inclusive of traffic volumes forecast to be generated by COMO; and
- Council's revised concept design, inclusive of traffic volumes forecast to be generated by COMO.

The SIDRA modelling was based upon traffic data collected at The Parade and George Street intersection in September 2022, and was calibrated based upon recorded queue lengths and observed driver behaviour. The traffic data was collected over three days, which included a Friday, Saturday and Monday. Peak hour periods (am, business and pm) were then analysed in order to determine the traffic impacts during each peak periods, noting the changes in traffic patterns during each peak (i.e. during the am peak, predominant traffic flows are westbound towards the city, and vice versa during the pm peak, whereas during the business peak, predominant traffic flows are less prevalent and more balanced).

The aforementioned SIDRA analyses identified that the intersection's spare traffic capacity would be reduced as a result of the realisation of COMO-related traffic volumes, as well as the reinstatement of traffic volumes previously associated with the site. However, the SIDRA analyses also identified further degradation of the intersection's operational performance as a result of the implementation of Council's 'revised concept design' for the northern George Street approach, thereby validating initial intersection operational concerns.

Further investigations into the traffic modelling analyses identified that the primary cause of the operational degradation was a result of queue lengths

associated with traffic stored within the designated right turn lane on George Street north, exceeding the available storage capacity. Vehicle queues would then (during peak periods) extend in to the shared southbound left-turn/through traffic lane, preventing traffic from being able to enter the intersection.

This impact was primarily identified to arise as a result of increased opposing traffic flows (i.e. increased left turn and northbound movements originating from George Street south), as well as increased southbound traffic demands (i.e. southbound movements associated with COMO and, previously, the former Norwood Mall Shopping Centre). The issue was identified to be further compounded by the installation of the scramble crossing at The Parade and George Street intersection, with available 'green time' for traffic movements reduced within a signal cycle.

Due to the priority and function of The Parade (i.e. a sub-arterial road) in comparison to that of George Street (i.e. a collector road), predominant traffic impacts associated with the scramble crossing's installation have been realised on George Street (given operational improvements to The Parade approaches were realised as a result of the installation of the separated right turn lanes).

Whilst phase times at The Parade and George Street intersection could be altered (and traffic impacts on George Street lessened), significant traffic impacts on The Parade have the ability to create significant broader traffic impacts, particularly noting the proximity of The Parade and Portrush Road intersection (approximately 380 m east of The Parade and George Street intersection). Portrush Road is an arterial road and is a critical route for the movement of freight between the South Eastern Freeway and northern Adelade suburbs (as well as provide connectivity beyond to regions within South Australia, Northern Territory and Western Australia). Accordingly, it is considered unlikely that notable improvements to the operation of The Parade and George Street could be realised (via phase time alterations), without impacting upon broader (higher-order) road networks).

Noting the above, alternate options were explored in order to minimise the degradation of The Parade and George Street intersection's performance. Again using SIDRA Intersection modelling software, an 'optimum concept' design was identified. The design optimised the intersections operation by reducing the risk of blockage associated with vehicle queues extending beyond available storage lengths. Whilst most critical to the northern George Street approach (given the narrowing of the carriageway), separated right turn lane lengths were identified for both the northern and southern approaches. The modelling identified that a northern approach right turn lane length of 60 m and a southern approach right turn lane length of 65 m would provide a balanced outcome between providing storage for right turning vehicles (from George Street) and facilitating access (in

the shared left turn and through lanes) to The Parade and George Street intersection. Importantly, the modelling identified that the aforementioned right turn lane lengths would actually improve the operation of the intersection, beyond that of the current intersection's configuration (i.e. would result in an improvement to the intersection's operation above that of the recent linemarking changes).

In order to visually illustrate the changes identified by the modelling, WAX Design was engaged to develop a concept design, illustrating a comparable standard of public realm to that of Council's 'revised concept design'. The WAX concept plan summarises the investigative works undertaken to date, and provides the City of Norwood Payneham and St Peters with an alternate George Street concept design.

2. BACKGROUND

2.1 STUDY AREA

The study area includes The Parade/George Street intersection, the George Street/Webbe Street intersection, and the section of George Street between the two intersections. The study area considers the road configuration throughout, as well as the road verge (including footpaths etc.) along George Street (between The Parade and Webbe Street).

Figure 1 illustrates the key roads and intersections within the study area.

Figure 1 – Key roads and intersections within the study area.

2.2 ADJACENT ROAD NETWORK

The Parade is an arterial road under the care and control of the Department for Infrastructure and Transport (DIT). Within the realm of the study area, The Parade comprises two traffic lanes in each direction. On-street parking (albeit restricted to a maximum of 30 minutes) and loading zones are facilitated within the immediate vicinity of the study area on The Parade. Paved footpaths are provided on both sides of The Parade, accommodating both pedestrian and bicycle movements. Bicycle movements are also accommodated on-street under a standard shared arrangement. A 50 km/h speed limit applies on The Parade within the vicinity of George Street.

George Street is identified as a collector road by the South Australian Government's Location SA Map Viewer, and is under the care and control of Council. George Street comprises a 10.1 m wide carriageway (approximate) with a single traffic lane in each direction. A southbound bicycle lane is provided on the northern side of George Street only (south of Webbe Street) for southbound movements. On-street parking is permitted on both sides of George Street (south of The Parade), albeit is restricted to two hours from 9:00 am to 5:00 pm, Monday to Saturday, and from 5:00 pm to 9:00 pm on Thursday. North of The Parade, on-street parking is restricted to 15 minutes and two (2) hours (eastern side), with permit parking on the western side (Council authorised vehicles only). A 40 km/h speed limit applies on George Street.

The Parade and George Street intersect at a four-way signalised intersection. All turning movements are permitted at the intersection, with right-turn movements from The Parade facilitated via separated right-turn lanes. The George Street approaches (both north and south) comprise a shared left-turn and through lane, with an adjacent short right-turn lane. It should however be noted that such changes were recently installed (by Council) at the end of 2022, prior to which George Street comprised a single wide approach lane (within which vehicles often stored side-by-side). Pedestrian crossing movements are facilitated at the intersection via a recently installed Scramble Crossing (facilitating diagonal crossing movements).

Webbe Street is identified as a local road by the South Australian Government's Location SA Map Viewer, and under the care and control of Council. Webbe Street comprises a one-way carriageway (varying in width between approximately 4.0 m and 8.8 m) with on-street parking permitted intermittently (predominantly on the southern side, albeit with a small portion on the northern side at the western end). On-street parking is restricted to 30 minutes from 9:00 am to 5:00 pm, Monday to Saturday, and from 5:00 pm to 9:00 pm on Thursday adjacent Edward Street, and 30 minutes (at all times) adjacent George Street. A 40 km/h speed limit applies on Webbe Street, albeit due to its geometry and the presence of a Wombat Crossing midblock along its length, such speeds would likely not be realised.

George Street and Webbe Street intersect at a priority controlled (Give Way) T-intersection. All turning movements are permitted at the intersection, with separate left-turn and right-turn lanes provided on the Webbe Street approach. Pedestrian ramps are currently provided on both sides of the Webbe Street approach (albeit are non-compliant with current Australian Standards), as well as on the western side of George Street.

3. GEORGE STREET UPGRADE

As part of The Parade Master Plan, a concept design was prepared for the upgrade of George Street, north of The Parade. The concept illustrated a number of changes to George Street, affecting various components such as (but not limited to) lane configurations, lane widths, on-street parking provisions and public realm alterations (including landscaping and footpaths). This concept was developed by Oxigen and was later endorsed (in-principally) by The Council at its special meeting held on 15 May 2019.

A plan illustrating the original concept included within The Parade Master Plan is attached in Appendix A.

Since the endorsement of The Parade Master Plan, the intersection of The Parade and George Street was upgraded to include separated right-turn lanes on both the eastern and western The Parade approaches, as well as the incorporation of a Scramble Crossing at the intersection. To incorporate the later, adjustments to signal phasing were also made and implemented by DIT.

A plan illustrating the upgraded intersection of The Parade and George Street is attached in Appendix B.

At a meeting held on 5 September 2022, The Council endorsed further works to the intersection, in the form of temporary interim treatments (comprising predominantly linemarking) to George Street (both northern and southern approaches). The interim treatment has since been installed and is operational at the time of writing of this report.

A plan illustrating the interim treatment (as installed) is attached in Appendix C.

However, at the same meeting, Council was also presented with a revised concept design (prepared by Landskap) for the George Street upgrade project (a copy of which is attached in Appendix D). It is understood that implementation of the design is pending resolution of stormwater upgrade works earmarked for George Street, required to resolve issues associated localised flooding during heavy rain events.

CIRQA has subsequently been engaged to review the revised concept design in relation to potential traffic impacts arising from design changes. These specifically include a reduction in carriageway width on the northern George Street approach, thereby limiting the associated queuing storage ability.

Of relevance to CIRQA's engagement, it is unclear as to whether determination of the revised concept design included consideration of potential traffic impacts, noting significant changes to the intersection since the development of The

Parade Master Plan (i.e. the Master Plan did not consider separated right turn lanes on The Parade, in conjunction with the scramble crossing during its development). Specifically, it appears that traffic analyses have not been undertaken to assess the potential traffic implications associated with the impending implementation of the revised concept design.

Furthermore, it is unclear as to whether consideration has been given to additional traffic volumes generated by the (under construction) COMO development (for which CIRQA previously undertook traffic impact analyses) during the development of the revised concept design.

Of particular note, COMO is located on the southern side of The Parade, also accessed via George Street, and was approved subsequent to the endorsement of The Parade Master Plan.

Subsequently, CIRQA was engaged to investigate the potential traffic impacts which may arise subsequent to the installation of the George Street upgrade project (as envisaged by the revised concept design).

4. TRAFFIC IMPACT ASSESSMENT

4.1 ASSESSMENT SCENARIOS

In order to determine the various traffic impacts, SIDRA Intersection modelling software has been utilised. Specifically, the following key scenarios have been assessed:

- existing configuration *(base case)* – existing traffic volumes (recorded 2022 as detailed below);
- scenario 1 – existing configuration with existing traffic volumes, plus forecast COMO development volumes (as outlined in CIRQA's previous Traffic and Parking Report prepared for the development application); and
- scenario 2 – Council's revised concept layout with existing traffic volumes, plus forecast COMO development volumes.

Given the recent upgrade to The Parade approaches, no changes have been made to the existing (current) geometry within any of the above scenarios (i.e. the same geometry is retained for each).

Subsequent to the modelling findings and outcomes of scenario 2, a further scenario was also developed (scenario 3). This scenario revised the length of the separated right-turn lanes on both George Street approaches, to an 'optimum' length that facilitated traffic flow without detrimental risk of blockage arising from extensive overflow queue lengths (further discussion is outlined in Section 5).

A concept plan illustrating the 'optimum' approach lane lengths on George Street is attached in Appendix E.

4.2 ANALYSIS PERIODS

For each of the above scenarios, the following peak hour periods have been assessed:

- Friday
  - am peak hour – 8:00 am to 9:00 am;
  - business peak hour – 2:30 pm to 3:30 pm;
  - pm peak hour – 4:45 pm to 5:45 pm;
- Saturday
  - business peak hour – 12:00 pm to 1:00 pm;
- Monday

- am peak hour – 8:00 am to 9:00 am;
- business peak hour – 12:15 pm to 1:15 pm; and
- pm peak hour – 5:00 pm to 6:00 pm.

4.3 TRAFFIC VOLUMES

4.3.1 EXISTING TRAFFIC VOLUMES

Traffic data was collected at the intersection of The Parade and George Street, as well as the intersection of George Street and Webbe Street, by Austraffic (an independent specialist data collection company). The data provided by Austraffic included turning movement surveys at both intersections, as well as queuing data for the northern George Street approach to The Parade/George Street intersection. Traffic data was collected on the following days:

- Friday, 16 September 2022 – 7:00 am to 7:00 pm;
- Saturday, 17 September 2022 – 7:00 am to 7:00 pm; and
- Monday, 19 September 2022 – 7:00 am to 7:00 pm.

Figure 2, Figure 3 and Figure 4 illustrate the surveyed am, pm and business peak hours traffic volumes at the intersection of The Parade/George Street.

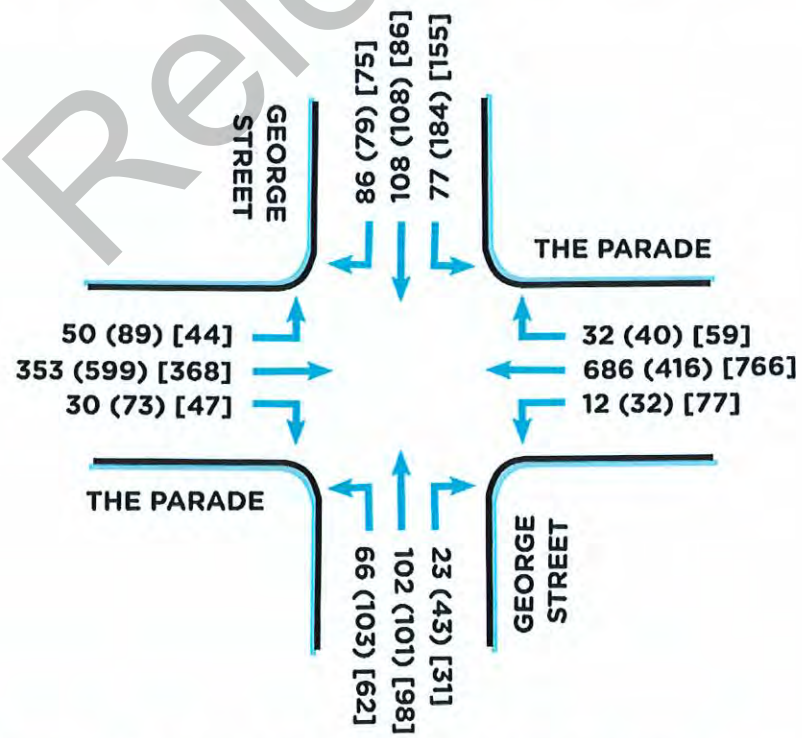

Figure 2 – Surveyed Friday am (pm) [business] peak hour movements

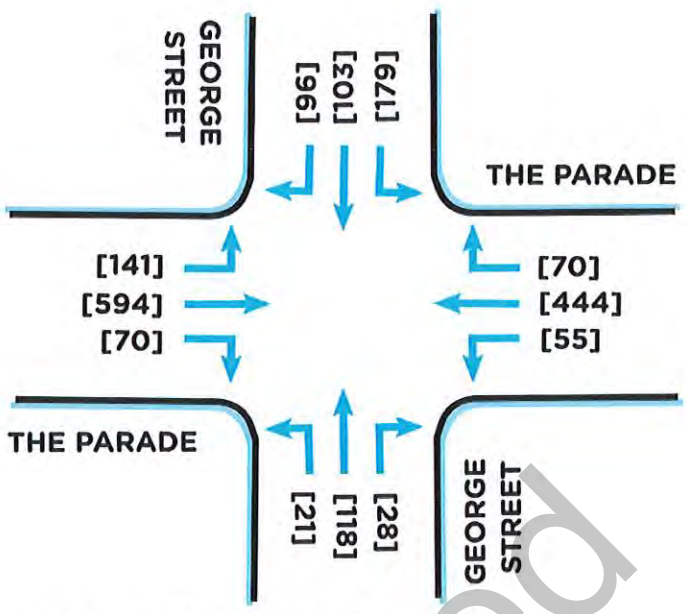

Figure 3 – Surveyed Saturday [business] peak hour movements

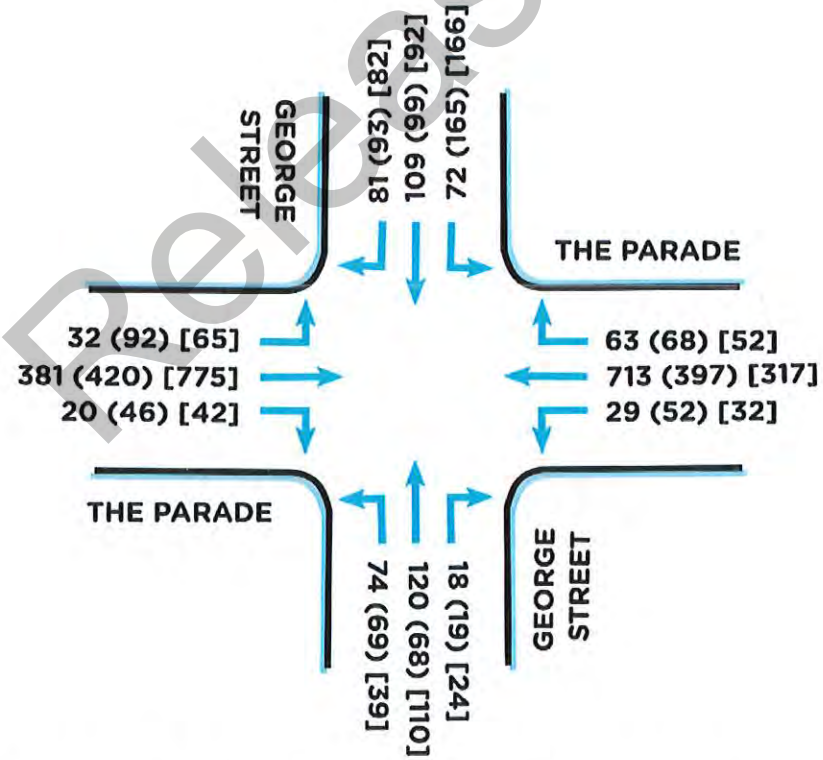

Figure 4 – Surveyed Monday am (pm) [business] peak hour movements

Figure 5, Figure 6 and Figure 7 illustrate the surveyed am, pm and business peak hours traffic volumes at the intersection of George Street/Webbe Street.

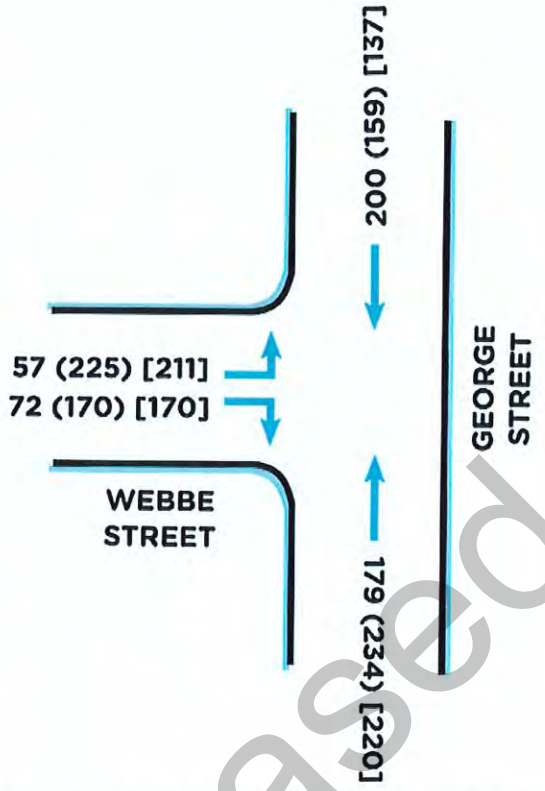

Figure 5 – Surveyed Friday am (pm) [business] peak hour movements

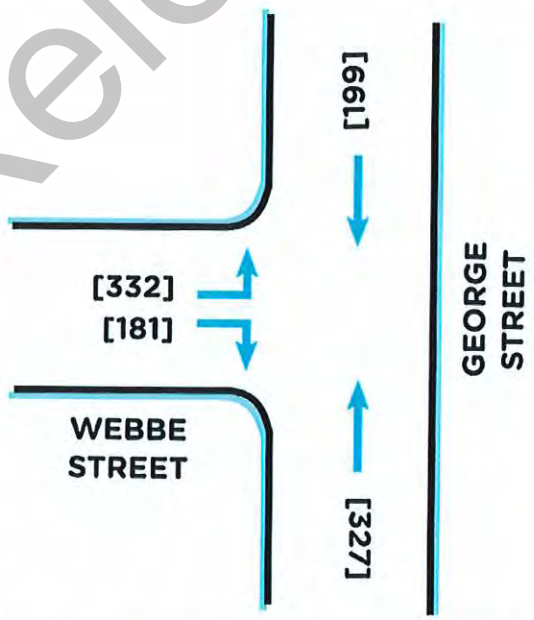

Figure 6 – Surveyed Saturday [business] peak hour movements

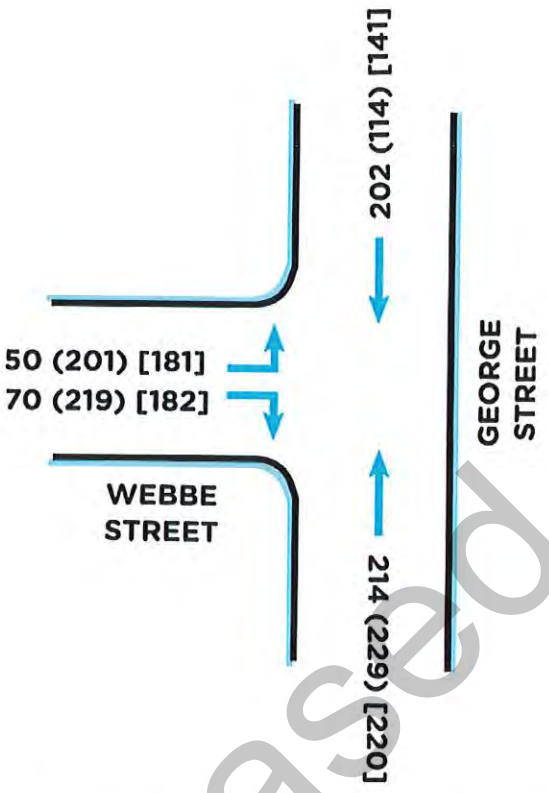

Figure 7 – Surveyed Monday am (pm) [business] peak hour movements

4.3.2 ADDITIONAL TRAFFIC VOLUMES

As noted above, additional traffic volumes at the intersection of The Parade and George Street have been considered in the following analyses (associated with the COMO development). These volumes have been adopted from a previous report prepared by CIRQA as part of the project's development application. However, as part of the development application, only forecast weekday pm peak hour and weekend business peak hour volumes were determined (given that these periods were identified to result in the biggest impact to the operation of The Parade/George Street intersection).

As such, for the purposes of determining an am peak hour forecast, the following traffic generation rates have been adopted:

- **Shopping Centres**
  - 6.15 am peak hour trips per 100 m² of gross floor area (50% of the Thursday pm peak hour traffic generation rate).
- **Office**
  - 1.6 am peak hour trips per 100 m² of gross floor area.
- **Medical Centre**
  - 10.4 am peak hour trips per 100 m² of gross floor area.
- **High density residential flat dwellings**
  - 0.53 am peak hour trips per dwelling.

It is noted that all other assumptions made in the previous development application assessment (including traffic distribution) have been adopted for the purposes of determining an am peak hour generation associated with COMO.

Based upon these factors, Figure 8, Figure 9 and Figure 10 illustrate the forecast am, pm and business peak hours traffic volumes for the COMO development at the intersection of The Parade/George Street.

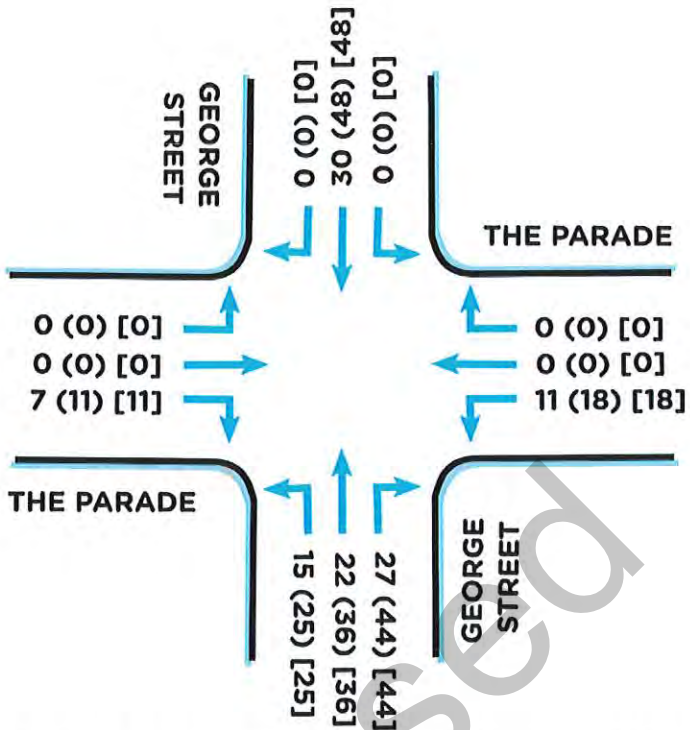

Figure 8 – COMO development forecast Friday am (pm) [business] peak hour movements

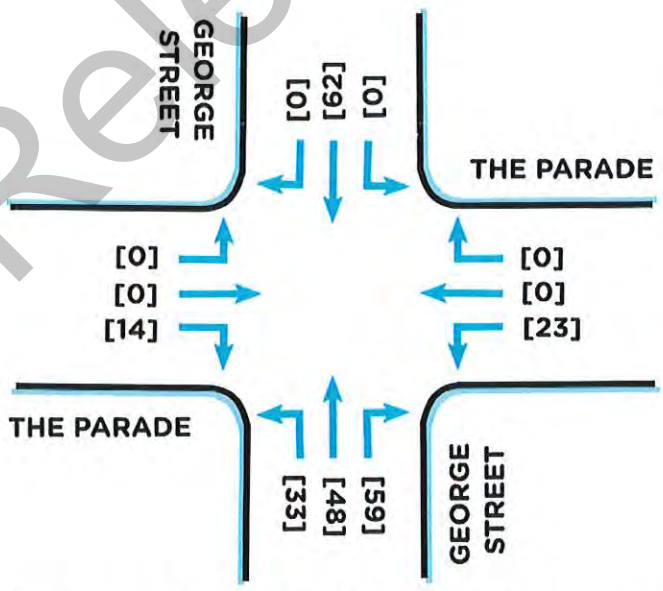

Figure 9 – COMO development Saturday [business] peak hour movements

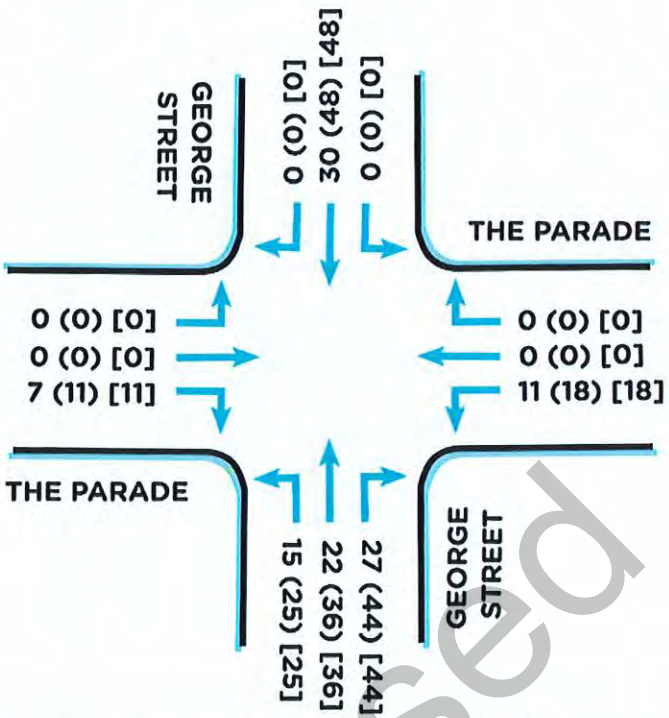

Figure 10 – COMO development Monday am (pm) [business] peak hour movements

Figure 11, Figure 12 and Figure 13 illustrate the forecast am, pm and business peak hours traffic volumes for the COMO development at the intersection of The Parade/George Street and George Street/Webbe Street.

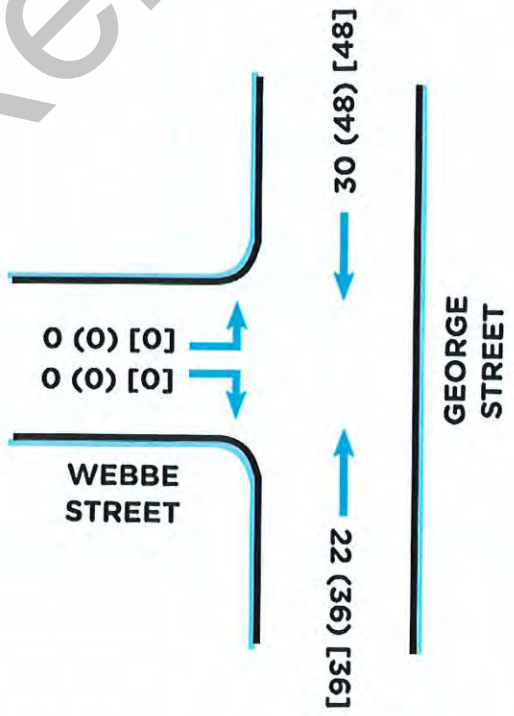

Figure 11 – COMO development forecast Friday am (pm) [business] peak hour movements

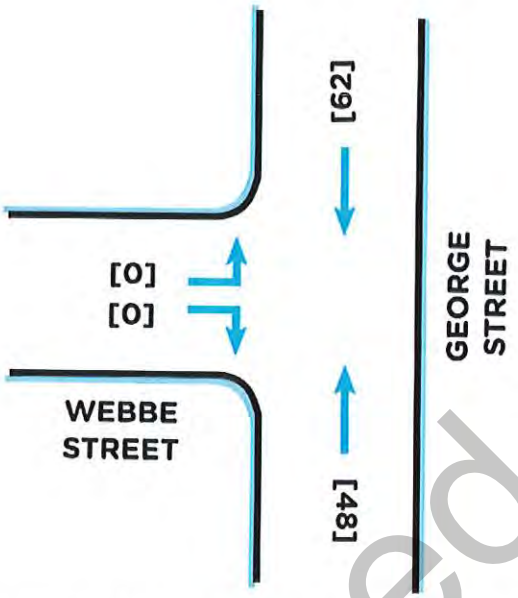

Figure 12 – COMO development Saturday [business] peak hour movements

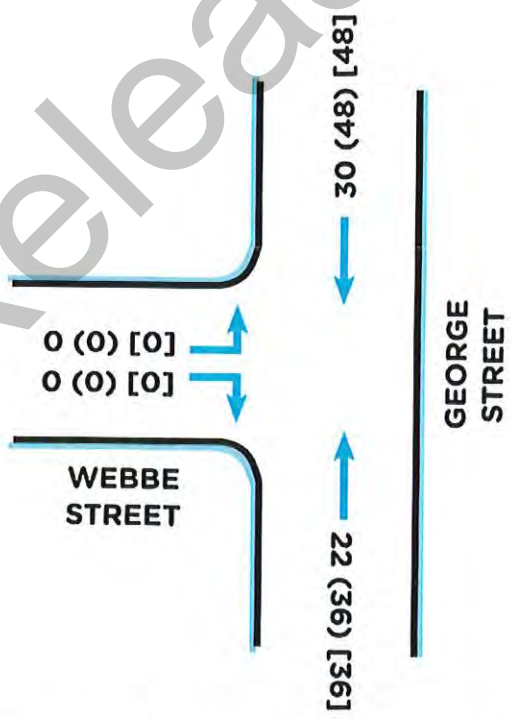

Figure 13 – COMO developments Monday am (pm) [business] peak hour movements

4.4 SCENARIO ANALYSIS

As noted above, SIDRA Intersection modelling has been undertaken for each scenario identified in Section 4.1. The 'base case' scenario has been developed based upon observed operational characteristics of The Parade/George Street and George Street/Webbe Street intersections, inclusive of (but not limited to) signal phasing, queue formation and driver behaviour. Modelling for alternate scenarios (to the existing intersection layout) has then been built upon the 'base case' scenario, with all calibration factors remaining the same.

4.4.1 EXISTING CONFIGURATION (BASE CASE)

Modelling of the existing intersection configuration with existing traffic volumes (i.e. the 'base case' scenario) has been undertaken for each analysis period (identified in Section 4.2). Key SIDRA results have been summarised in Tables 1 to 3, whilst detailed SIDRA output is attached in Appendix F1.

4.4.1.1 FRIDAY

Table 1 – Summary of the Friday am [business] (pm) SIDRA results for the intersection of The Parade and George Street

Movement	Degree of Saturation	Level of Service	Average Queue Distance (m)
George St (S) – Left	0.742 [0.763] (0.741)	E [D] (D)	49.3 [46.5] (35.4)
George St (S) – Through	0.742 [0.763] (0.741)	E [D] (D)	49.3 [46.5] (35.4)
George St (S) – Right	0.211 [0.377] (0.264)	E [E] (E)	6.6 [9.8] (6.8)
The Parade (E) – Left	0.730 [0.647] (1.149)	D [D] (F)	76.9 [39.1] (209.7)
The Parade (E) – Through	0.730 [0.647] (1.149)	C [C] (F)	87.2 [48.3] (250.1)
The Parade (E) – Right	0.101 [0.611] (0.251)	D [E] (D)	6.6 [10.1] (10.7)
George St (N) – Left	0.871 [1.137] (1.136)	E [F] (F)	61.5 [151.1] (120.0)
George St (N) – Through	0.871 [1.137] (1.136)	E [F] (F)	61.5 [151.1] (120.0)
George St (N) – Right	0.862 [0.709] (0.732)	F [E] (E)	28.0 [18.6] (17.4)
The Parade (W) – Left	0.404 [0.972] (0.518)	C [F] (C)	41.4 [124.5] (37.1)
The Parade (W) – Through	0.404 [0.972] (0.518)	C [E] (C)	41.4 [124.5] (37.1)
The Parade (W) – Right	0.197 [0.422] (0.600)	D [D] (E)	7.7 [15.2] (10.8)

4.4.1.2 SATURDAY

Table 2 – Summary of the Saturday [business] SIDRA results for the intersection of The Parade and George Street

Movement	Degree of Saturation	Level of Service	Average Queue Distance (m)
George St (S) – Left	[0.531]	[D]	[17.9]
George St (S) – Through	[0.531]	[D]	[17.9]
George St (S) – Right	[0.246]	[E]	[6.3]
The Parade (E) – Left	[0.713]	[D]	[46.6]
The Parade (E) – Through	[0.713]	[C]	[54.1]
The Parade (E) – Right	[0.921]	[E]	[18.0]
George St (N) – Left	[1.142]	[F]	[145.7]
George St (N) – Through	[1.142]	[F]	[145.7]
George St (N) – Right	[0.566]	[D]	[20.9]
The Parade (W) – Left	[0.994]	[F]	[139.2]
The Parade (W) – Through	[0.994]	[F]	[139.2]
The Parade (W) – Right	[0.459]	[D]	[15.0]

4.4.1.3 MONDAY

Table 3 – Summary of the Monday am [business] (pm) SIDRA results for the intersection of The Parade and George Street

Movement	Degree of Saturation	Level of Service	Average Queue Distance (m)
George St (S) – Left	0.849 [0.598] (0.685)	E [D] (D)	62.0 [26.2] (31.9)
George St (S) – Through	0.849 [0.598] (0.685)	E [D] (D)	62.0 [26.2] (31.9)
George St (S) – Right	0.165 [0.152] (0.206)	E [D] (E)	5.7 [3.8] (5.4)
The Parade (E) – Left	0.808 [0.730] (0.485)	D [D] (C)	97.7 [42.9] (27.0)
The Parade (E) – Through	0.808 [0.730] (0.485)	D [C] (C)	100.2 [44.8] (31.9)
The Parade (E) – Right	0.194 [0.484] (0.657)	D [D] (E)	12.8 [13.6] (11.9)
George St (N) – Left	0.833 [1.166] (1.207)	E [F] (F)	56.6 [137.3] (150.2)
George St (N) – Through	0.833 [1.166] (1.207)	E [F] (F)	56.6 [137.3] (150.2)
George St (N) – Right	1.109 [0.655] (0.705)	F [D] (E)	43.5 [19.9] (18.5)
The Parade (W) – Left	0.412 [0.741] (1.068)	C [D] (F)	42.8 [53.3] (191.6)
The Parade (W) – Through	0.412 [0.741] (1.068)	C [C] (F)	42.8 [53.3] (191.6)
The Parade (W) – Right	0.167 [0.310] (0.165)	E [D] (D)	5.5 [8.9] (7.2)

4.4.2 SCENARIO 1 (INCLUDING COMO)

Modelling of the existing intersection configuration with future traffic volumes (i.e. the 'base case' scenario plus additional COMO traffic volumes) has been undertaken for each analysis period (identified in Section 4.2). Key SIDRA results have been summarised in Tables 4 to 6, whilst detailed SIDRA output is attached in Appendix F2.

4.4.2.1 FRIDAY

Table 4 – Summary of the key am [business] (pm) SIDRA results for the intersection of The Parade and George Street

Movement	Degree of Saturation	Level of Service	Average Queue Distance (m)
George St (S) – Left	0.901 [1.014] (1.030)	E [F] (F)	70.7 [97.3] (81.2)
George St (S) – Through	0.901 [1.014] (1.030)	E [F] (F)	70.7 [97.3] (81.2)
George St (S) – Right	0.637 [0.763] (0.638)	E [E] (E)	15.2 [20.4] (16.8)
The Parade (E) – Left	0.742 [0.678] (1.173)	D [D] (F)	79.4 [42.0] (224.8)
The Parade (E) – Through	0.742 [0.678] (1.173)	C [C] (F)	90.2 [51.2] (269.6)
The Parade (E) – Right	0.101 [0.536] (0.252)	D [E] (D)	6.6 [9.9] (10.7)
George St (N) – Left	0.989 [1.302] (1.355)	F [F] (F)	89.9 [239.2] (213.7)
George St (N) – Through	0.989 [1.302] (1.355)	F [F] (F)	89.9 [239.2] (213.7)
George St (N) – Right	1.391 [1.039] (0.957)	F [F] (E)	73.3 [27.0] (19.5)
The Parade (W) – Left	0.408 [0.980] (0.522)	C [F] (C)	42.0 [128.7] (37.5)
The Parade (W) – Through	0.408 [0.980] (0.522)	C [F] (C)	42.0 [128.7] (37.5)
The Parade (W) – Right	0.250 [0.520] (0.740)	D [D] (E)	9.6 [18.0] (13.6)

4.4.2.2 SATURDAY

Table 5 – Summary of the key [business] SIDRA results for the intersection of The Parade and George Street

Movement	Degree of Saturation	Level of Service	Average Queue Distance (m)
George St (S) – Left	[0.869]	[E]	[55.9]
George St (S) – Through	[0.869]	[D]	[55.9]
George St (S) – Right	[0.763]	[E]	[20.4]
The Parade (E) – Left	[0.746]	[D]	[50.3]
The Parade (E) – Through	[0.746]	[C]	[59.0]
The Parade (E) – Right	[0.921]	[E]	[18.0]
George St (N) – Left	[1.370]	[F]	[262.7]
George St (N) – Through	[1.370]	[F]	[262.7]
George St (N) – Right	[1.112]	[F]	[42.9]
The Parade (W) – Left	[1.004]	[F]	[145.1]
The Parade (W) – Through	[1.004]	[F]	[145.1]
The Parade (W) – Right	[0.597]	[D]	[18.7]

4.4.2.3 MONDAY

Table 6 – Summary of the key am [business] (pm) SIDRA results for the intersection of The Parade and George Street

Movement	Degree of Saturation	Level of Service	Average Queue Distance (m)
George St (S) – Left	1.013 [0.863] (0.970)	F [D] (F)	101.8 [46.2] (64.2)
George St (S) – Through	1.013 [0.863] (0.970)	F [D] (E)	101.8 [46.2] (64.2)
George St (S) – Right	0.540 [0.502] (0.576)	E [D] (E)	14.2 [13.1] (15.2)
The Parade (E) – Left	0.820 [0.758] (0.509)	D [D] (C)	101.5 [45.8] (28.5)
The Parade (E) – Through	0.820 [0.758] (0.509)	D [C] (C)	104.2 [48.3] (34.1)
The Parade (E) – Right	0.195 [0.490] (0.657)	D [D] (E)	12.8 [48.0] (58.9)
George St (N) – Left	0.950 [1.371] (1.424)	F [F] (F)	79.4 [231.2] (245.6)
George St (N) – Through	0.950 [1.371] (1.424)	F [F] (F)	79.4 [231.2] (245.6)
George St (N) – Right	1.418 [1.158] (1.035)	F [F] (F)	72.7 [46.0] (26.8)
The Parade (W) – Left	0.418 [0.748] (1.076)	C [D] (F)	43.6 [54.2] (197.8)
The Parade (W) – Through	0.418 [0.748] (1.076)	C [C] (F)	43.6 [54.2] (197.8)
The Parade (W) – Right	0.233 [0.411] (0.218)	E [D] (D)	7.5 [11.3] (9.4)

4.4.3 SCENARIO 2 (REVISED COUNCIL CONCEPT, INCLUDING COMO)

Modelling of the Council's proposed George Street configuration with future traffic volumes (i.e. revised George Street geometry with additional COMO traffic volumes) has been undertaken for each analysis period (identified in Section 4.2). Key SIDRA results have been summarised in Tables 7 to 9, whilst detailed SIDRA output is attached in Appendix F3.

4.4.3.1 FRIDAY

Table 7 – Summary of the key am [business] (pm) SIDRA results for the intersection of The Parade and George Street

Movement	Degree of Saturation	Level of Service	Average Queue Distance (m)
George St (S) – Left	0.907 [1.014] (1.030)	F [F] (F)	71.4 [97.3] (81.2)
George St (S) – Through	0.907 [1.014] (1.030)	E [F] (F)	71.4 [97.3] (81.2)
George St (S) – Right	0.576 [0.763] (0.638)	E [E] (E)	15.4 [20.4] (16.8)
The Parade (E) – Left	0.742 [0.678] (1.173)	D [D] (F)	79.4 [42.0] (224.8)
The Parade (E) – Through	0.742 [0.678] (1.173)	C [C] (F)	90.2 [51.2] (269.6)
The Parade (E) – Right	0.101 [0.536] (0.252)	D [E] (D)	6.6 [9.9] (10.7)
George St (N) – Left	1.084 [1.371] (1.447)	F [F] (F)	114.9 [262.5] (237.7)
George St (N) – Through	1.084 [1.371] (1.447)	F [F] (F)	114.9 [262.5] (237.7)
George St (N) – Right	1.391 [1.039] (0.957)	F [F] (E)	73.3 [27.0] (19.5)
The Parade (W) – Left	0.408 [0.980] (0.522)	C [F] (C)	42.0 [128.7] (37.5)
The Parade (W) – Through	0.408 [0.980] (0.522)	C [F] (C)	42.0 [128.7] (37.5)
The Parade (W) – Right	0.250 [0.520] (0.740)	D [D] (E)	9.6 [18.0] (13.6)

4.4.3.2 SATURDAY

Table 8– Summary of the key [business] SIDRA results for the intersection of The Parade and George Street

Movement	Degree of Saturation	Level of Service	Average Queue Distance (m)
George St (S) – Left	[0.869]	[E]	[55.9]
George St (S) – Through	[0.869]	[D]	[55.9]
George St (S) – Right	[0.763]	[E]	[20.4]
The Parade (E) – Left	[0.746]	[D]	[50.3]
The Parade (E) – Through	[0.746]	[C]	[59.0]
The Parade (E) – Right	[0.921]	[E]	[18.0]
George St (N) – Left	[1.477]	[F]	[294.9]
George St (N) – Through	[1.477]	[F]	[294.9]
George St (N) – Right	[1.112]	[F]	[42.9]
The Parade (W) – Left	[1.004]	[F]	[145.1]
The Parade (W) – Through	[1.004]	[F]	[145.1]
The Parade (W) – Right	[0.597]	[D]	[18.7]

4.4.3.3 MONDAY

Table 9 – Summary of the key am [business] (pm) SIDRA results for the intersection of The Parade and George Street

Movement	Degree of Saturation	Level of Service	Average Queue Distance (m)
George St (S) – Left	1.013 [0.863] (0.970)	F [D] (F)	101.7 [46.2] (64.6)
George St (S) – Through	1.013 [0.863] (0.970)	F [D] (E)	101.7 [46.2] (64.6)
George St (S) – Right	0.529 [0.502] (0.576)	E [D] (E)	14.1 [13.1] (15.2)
The Parade (E) – Left	0.820 [0.758] (0.509)	D [D] (C)	101.5 [45.8] (28.5)
The Parade (E) – Through	0.820 [0.758] (0.509)	D [C] (C)	104.2 [48.3] (34.1)
The Parade (E) – Right	0.195 [0.490] (0.657)	D [D] (E)	12.8 [13.6] (11.3)
George St (N) – Left	1.023 [1.481] (1.522)	F [F] (F)	95.9 [261.2] (270.6)
George St (N) – Through	1.023 [1.481] (1.522)	F [F] (F)	95.9 [261.2] (270.6)
George St (N) – Right	1.418 [1.158] (1.035)	F [F] (F)	72.7 [46.0] (26.8)
The Parade (W) – Left	0.418 [0.748] (1.076)	C [D] (F)	43.6 [54.2] (197.8)
The Parade (W) – Through	0.418 [0.748] (1.076)	C [C] (F)	43.6 [54.2] (197.8)
The Parade (W) – Right	0.233 [0.411] (0.218)	E [D] (D)	7.5 [11.3] (9.4)

4.4.4 SCENARIO 3 (OPTIMUM CONCEPT, INCLUDING COMO)

As noted in Section 4.1, additional modelling has been undertaken to determine an optimum George Street configuration, to readily facilitate future traffic volumes without significant impacts to its operation.

The modelling includes an iterative approach with future traffic volumes (i.e. revised George Street geometry with additional COMO traffic volumes) has been undertaken for each analysis period (identified in Section 4.2). Key SIDRA results have been summarised in Tables 10 to 12, whilst detailed SIDRA output is attached in Appendix F4.

The SIDRA modelling undertaken for Future Scenario 2 indicated that vehicle queues within the right turn lanes (on both George Street approaches for the intersection of The Parade and George Street) would extend into the adjacent shared left turn/through lane, impacting the flow of the adjacent lane. The short right turn lanes on both George Street approaches were subsequently extended until adequate storage was provided to accommodate the free flow of the adjacent lane (i.e. typical short lane queues would not extend into the adjacent lane). The adjusted model is illustrated in Appendix F4. The SIDRA results for Future Scenario 3 have been summarised in Tables 10 to 12 below.

4.4.4.1 FRIDAY

Table 10 – Summary of the key am [business] (pm) SIDRA results for the intersection of The Parade and George Street

Movement	Degree of Saturation	Level of Service	Average Queue Distance (m)
George St (S) – Left	0.883 [0.988] (1.024)	E [F] (F)	69.0 [89.9] (79.7)
George St (S) – Through	0.883 [0.988] (1.024)	E [F] (F)	69.0 [89.9] (79.7)
George St (S) – Right	0.637 [0.763] (0.638)	E [E] (E)	15.2 [20.4] (16.8)
The Parade (E) – Left	0.742 [0.678] (1.173)	D [D] (F)	79.4 [42.0] (224.8)
The Parade (E) – Through	0.742 [0.678] (1.173)	C [C] (F)	90.2 [51.2] (269.6)
The Parade (E) – Right	0.101 [0.536] (0.252)	D [E] (D)	6.6 [9.9] (10.7)
George St (N) – Left	0.935 [1.279] (1.355)	F [F] (F)	80.0 [231.2] (213.7)
George St (N) – Through	0.935 [1.279] (1.355)	F [F] (F)	80.0 [231.2] (213.7)
George St (N) – Right	1.391 [1.039] (0.957)	F [F] (E)	73.3 [27.0] (19.5)
The Parade (W) – Left	0.408 [0.980] (0.522)	C [F] (C)	42.0 [128.7] (37.5)
The Parade (W) – Through	0.408 [0.980] (0.522)	C [F] (C)	42.0 [128.7] (37.5)
The Parade (W) – Right	0.250 [0.520] (0.740)	D [D] (E)	9.6 [18.0] (13.6)

4.4.4.2 SATURDAY

Table 11 – Summary of the key [business] SIDRA results for the intersection of The Parade and George Street

Movement	Degree of Saturation	Level of Service	Average Queue Distance (m)
George St (S) – Left	[0.845]	[E]	[54.2]
George St (S) – Through	[0.845]	[D]	[54.2]
George St (S) – Right	[0.763]	[E]	[20.4]
The Parade (E) – Left	[0.746]	[D]	[50.3]
The Parade (E) – Through	[0.746]	[C]	[59.0]
The Parade (E) – Right	[0.921]	[E]	[18.0]
George St (N) – Left	[1.346]	[F]	[254.7]
George St (N) – Through	[1.346]	[F]	[254.7]
George St (N) – Right	[1.112]	[F]	[42.9]
The Parade (W) – Left	[1.004]	[F]	[145.1]
The Parade (W) – Through	[1.004]	[F]	[145.1]
The Parade (W) – Right	[0.597]	[D]	[18.7]

4.4.4.3 MONDAY

Table 12 – Summary of the key am [business] (pm) SIDRA results for the intersection of The Parade and George Street

Movement	Degree of Saturation	Level of Service	Average Queue Distance (m)
George St (S) – Left	0.991 [0.863] (0.964)	F [D] (F)	96.2 [46.2] (63.5)
George St (S) – Through	0.991 [0.863] (0.964)	F [D] (E)	96.2 [46.2] (63.5)
George St (S) – Right	0.540 [0.502] (0.576)	E [D] (E)	14.2 [13.1] (15.2)
The Parade (E) – Left	0.820 [0.758] (0.509)	D [D] (C)	101.5 [45.8] (28.5)
The Parade (E) – Through	0.820 [0.758] (0.509)	D [C] (C)	104.2 [48.3] (34.1)
The Parade (E) – Right	0.195 [0.490] (0.657)	D [D] (E)	12.8 [13.6] (11.9)
George St (N) – Left	0.909 [1.371] (1.424)	F [F] (F)	73.5 [231.2] (245.6)
George St (N) – Through	0.909 [1.371] (1.424)	E [F] (F)	73.5 [231.2] (245.6)
George St (N) – Right	1.418 [1.158] (1.035)	F [F] (F)	72.5 [46.0] (26.8)
The Parade (W) – Left	0.418 [0.748] (1.076)	C [D] (F)	43.6 [54.2] (197.8)
The Parade (W) – Through	0.418 [0.748] (1.076)	C [C] (F)	43.6 [54.2] (197.8)
The Parade (W) – Right	0.233 [0.411] (0.218)	E [D] (D)	7.5 [11.3] (9.4)

5. DISCUSSION

The above SIDRA modelling indicates the geometric changes to George Street proposed by Council (i.e. Scenario 2) will generally result in a higher Degree of Saturation (DoS) across both George Street approaches, in comparison to that of the existing configuration inclusive of COMO-related traffic volumes (i.e. Scenario 1).

Of particular note, the largest impacts will be realised on the northern George Street approach, whereby the available storage and throughput capacity is reduced due to the narrowing of the available carriageway. This is further impacted by queues extending from the separated right-turn lane north along George Street, thereby restricting access to the shared southbound left-turn/through lane (i.e. the queue associated with right-turn movements from George Street north cannot generally be accommodated within the available area proposed).

It should also be noted that signal cycle times are finite and, as such, alterations to green time for one signal phase (i.e. increasing green time for George Street), will require removal of time from another signal phase (i.e. decreasing green time for The Parade). Whilst adjustments to signal phasing can assist in reducing forecast queues and delays, The Parade approaches remain the priority at the intersection (i.e. eastbound and westbound) due to the function of the roadway. Alterations to available green time on The Parade (i.e. reduction in times) will also impact upon the broader road network and, notably, broader high-order roads such as Portrush Road. Changes to signal phasing which would substantially impact upon the operation of George Street are therefore significantly restricted.

Alternate options to improve the operation of the intersection include adjustment of the geometry (i.e. such as George Street). As demonstrated in Scenario 3, increasing the available storage length within the separated right-turn lane will improve the operation of the intersection, notably by generally accommodating forecast right-turn queue lengths in a separate lane.

The Scenario 3 modelling has been based upon a 60 m separated right-turn lane for the northern George Street approach, and a 65 m separated right-turn lane for the southern George Street approach. These lane lengths have been determined by an iterative approach, balancing general intersection performance increases with infrastructure extent (i.e. as to not over-provide for infrastructure which is used only during peak periods).

It is important to note that further extension to lane lengths would not necessarily result in further improvements to intersection performance, despite accommodating higher-percentile queue lengths. This is due to increased

storage lengths of short lane approaches (i.e. right-turn lanes) already being accommodated within their respective lane lengths.

The determined right turn lane lengths of 60 m (northern approach) and 65 m (southern approach) were determined to result in an arrangement which generally accommodates peak hour average queues, without detrimentally compromising upon potential urban design upgrades.

The improved performance of The Parade/George Street intersection (by realisation of Scenario 3 in comparison to Scenario 2), would also generally assist in improving the operation of the adjacent George Street/Webbe Street intersection, by providing additional opportunity for vehicles to access The Parade (i.e. by not being inhibited by the extension of right-turn lane queue, and resultant restriction of the shared left-turn/southbound traffic lane).

The results indicated that queues would generally reduce for the George Street (southbound) and Webbe Street (right-turn) movements by in the order of 10 m to 30 m. In addition, the modelling indicates that the DoS for the George Street (north) and Webbe Street (right-turn) would generally reduce.

Attachment G

Confidential

George Street Upgrade Project
Status Report

City of Norwood Payneham & St Peters
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City of Norwood Payneham & St Peters

URBAN DESIGN, LANDSCAPE
ARCHITECTURE & GARDENS

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LANDSKAP

REVIEW & DISCUSSION

No.	WAX Concept Annotation	Landskap Review	Landskap Summary & Considerations
12 13	Six new trees with 1 metre wide landscape areas Increased footpath width from existing	Different to the Landskap current design. The current design proposes: — 3.0 metre wide footpath (typical). — 1.8 metre wide footpath (minimum around tree grates). — Three trees in tree grates along the The Parade Central facade. Tree grates are proposed as the area is high pedestrian use.	**The WAX concept is not consistent with the current design. It comprises:** — 2.2 metre wide footpath (less than Landskap current design). — 1.0 metre wide garden bed. — To achieve the increased footpath and garden bed width, the kerb has been moved approximately 0.47 metres further west. Considerations: — The increased verge width proposed by the WAX concept requires the new kerb to be located approximately 0.47 metres further into the existing carriageway. This may have cost implications resulting from road re-profiling and drainage works. — The additional garden beds at The Parade intersection are located in a high-use pedestrian environment. Planting may be subject to damage. — The footpath cross-fall in this location is significant and is at the maximum compliant grade in the current design. — The reduced footpath width proposed by the WAX concept may result in an non-compliant footpath cross-fall.
14	Opportunity for green wall or landscaping on Parkade land	Different to the Landskap current design. — The current design does not incorporate vertical greening to the Parkade facade.	**The WAX concept is not consistent with the current design.** — Maintenance would need to be undertaken from the public footpath. This may require ongoing local area traffic management. — Green walls are difficult to maintain in good, healthy condition in Adelaide and often fail. — In our opinion, trees are better suited to providing meaningful greening to the street.

REVIEW & DISCUSSION

No.	WAX Concept Annotation	Landskap Review	Landskap Summary & Considerations
9	Additional garden beds around existing vines to Hoyts building facade	As per Landskap current design, noting minor variation below. — Circular garden beds were proposed in the Functional Design. The Landskap current design proposes: — Rectangular garden beds at the base of the existing columns to accommodate existing vines only. — No new planting. — Circular garden beds were adjusted to rectangles to increase footpath widths.	The WAX concept is generally consistent with the current design.
10	Left turn only vehicle existing to undercroft car parking	As per Landskap current design.	The WAX concept is generally consistent with the current design.
11	Approximately 60 metre left turn lane onto The Parade	Different to the Landskap current design. The current design proposes: — 28.5 metre left turn lane onto the Parade. — A continuous garden bed along the eastern verge comprising nine new trees and low planting.	**The WAX concept is not consistent with the current design. It comprises:** — 60 metre left turn lane onto The Parade. — 79 square metres of additional road area (ie. not footpath or garden). — Six new trees along the eastern verge, south of The Parade Central undercroft carpark exit. — Four new trees along the eastern verge, north of The Parade Central undercroft carpark exit. — Wider road carriageway (typically 2.5 metres wider than the Landskap current design). Considerations: — The increased left turn lane onto The Parade proposed by the WAX concept will result in less space adjacent The Parade Central tenancies for the following: — Trees and planting between the road and footpath. — Outdoor dining and streetscape activation. — These tenancies have glazed frontages and present an opportunity for an active streetscape interface and outdoor dining. — The road carriageway proposed by the WAX concept is typically 2.5 metres wider than the Landskap current design. This will increase the width of carriageway for pedestrians to cross. — The changes proposed by the WAX concept negatively impact on the public realm amenity with reduced greening, prioritisation of vehicle circulation and fewer opportunities for outdoor dining. — These changes are not consistent with the principles of the endorsed Masterplan that aim to prioritise pedestrians, increase amenity, and maximise opportunities for outdoor dining adjacent active frontages.

REVIEW & DISCUSSION

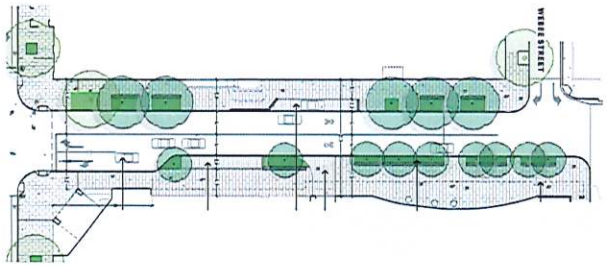
The following table summarises our review and differences between the WAX concept and the current design prepared by Landskap. Note, the numbers on the left of the tables relate to the annotations on the WAX concept.

No.	WAX Concept Annotation	Landskap Review	Landskap Summary & Considerations
1	Eight new trees along western side of George Street	Landskap current design proposes seven trees along the western side of George Street. — Trees have been reduced in this section to assist with achieving lighting compliance and Town Hall visibility.	The WAX concept is generally consistent with the current design.
2	Removal of existing on-street car parking and establishment of garden beds	As per Landskap current design, with the exception of one tree - refer above.	The WAX concept is generally consistent with the current design.
3	Crossing point to Town Hall removed	As per Landskap current design. — A pedestrian crossing was originally proposed adjacent the Town Hall entry (refer Functional Design). This was removed at the request of Council following road safety audit feedback (Stantec). — Pedestrian crossing ramps are proposed at the intersection with The Parade (scramble crossing).	The WAX concept is consistent with the current design.
4	Outdoor dining area (eastern side infont of House of Health)	As per Landskap current design.	The WAX concept is consistent with the current design.
5	Two car parking spaces (eastern side)	As per Landskap current design, noting minor variation below. — One permit loading space in lieu of parking spaces.	The WAX concept is generally consistent with the current design.
6	Pedestrian crossing ramps – from southern side of Webbe Street across George Street	Different to the Landskap current design. — Pedestrian crossing ramps across George Street, at the intersection of Webbe Street, are not proposed in the current design. — The existing arrangement comprises of two pedestrian crossing ramps located along George Street, at the intersection with Webbe Street. The existing arrangement was reviewed during the design process with NPSP, BEES and the road safety auditor (Stantec), the following were noted: — Both pedestrian crossing ramps are located on the western side of George Street. — Pedestrian crossing ramps are not located on the opposite side of George Street (eastern footpath). This is not consistent with AS1428.1. — Only one ramp incorporates tactile indicators to AS1428.1. — Pedestrian refuge is not provided.	**The WAX concept is not consistent with the current design.** — Based on the review undertaken by Landskap, NPSP, BEES and Stantec, pedestrian crossing ramps at this location are not recommended. They are considered unsafe for pedestrians, cyclists and vehicle users due to high peak traffic volumes turning right from Webbe Street onto George Street. — Pedestrian crossing ramps are proposed at the intersection with The Parade (scramble crossing).
7	Ten new trees along eastern edge of George Street (loss of two trees compared with Landskap concept)	Refer to item 11.	Refer to item 11.
8	Shared use of roadway by cyclists	As per Landskap current design. — Sharrow linemarking is proposed between The Parade and Webbe Street.	The WAX concept is consistent with the current design.

COMPARISON SUMMARY

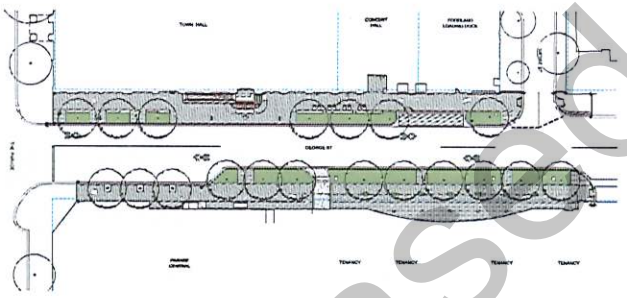
The following page summarises the key variations between the masterplan, Landskap current design and WAX concept.

MASTERPLAN



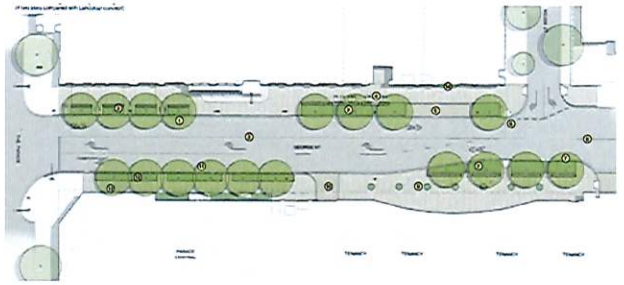
Proposed length of left turn onto The Parade	18 metres
Proposed carriageway width, general	8 metres
Proposed carriageway width, with left turn lane	11 metres
Proposed trees	14

LANDSKAP CURRENT DESIGN



Proposed length of left turn onto The Parade	28.75 metres
Proposed carriageway width, general	8 metres
Proposed carriageway width, with left turn lane	11 metres
Proposed trees	19

WAX CONCEPT

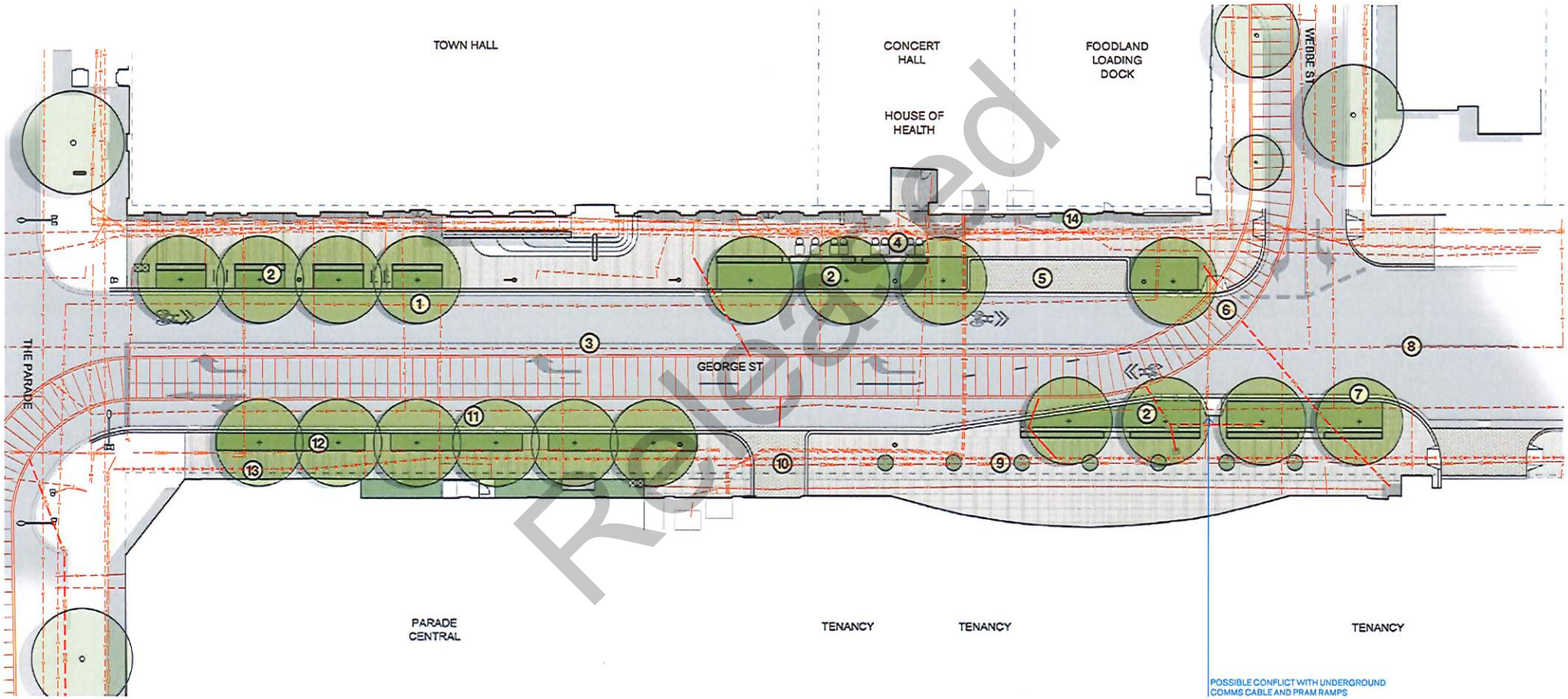


Proposed length of left turn onto The Parade	60 metres
Proposed carriageway width, general	8 metres
Proposed carriageway width, with left turn lane	11 metres
Proposed trees	18

WAX DESIGN WITH UNDERGROUND SERVICES OVERLAY

This plan illustrates the WAX concept with existing underground services overlayed. The underground services are based on survey undertaken on behalf of NPSP.

- Water
- Electrical
- Communications
- Gas
- Stormwater
- Stormwater culvert



North

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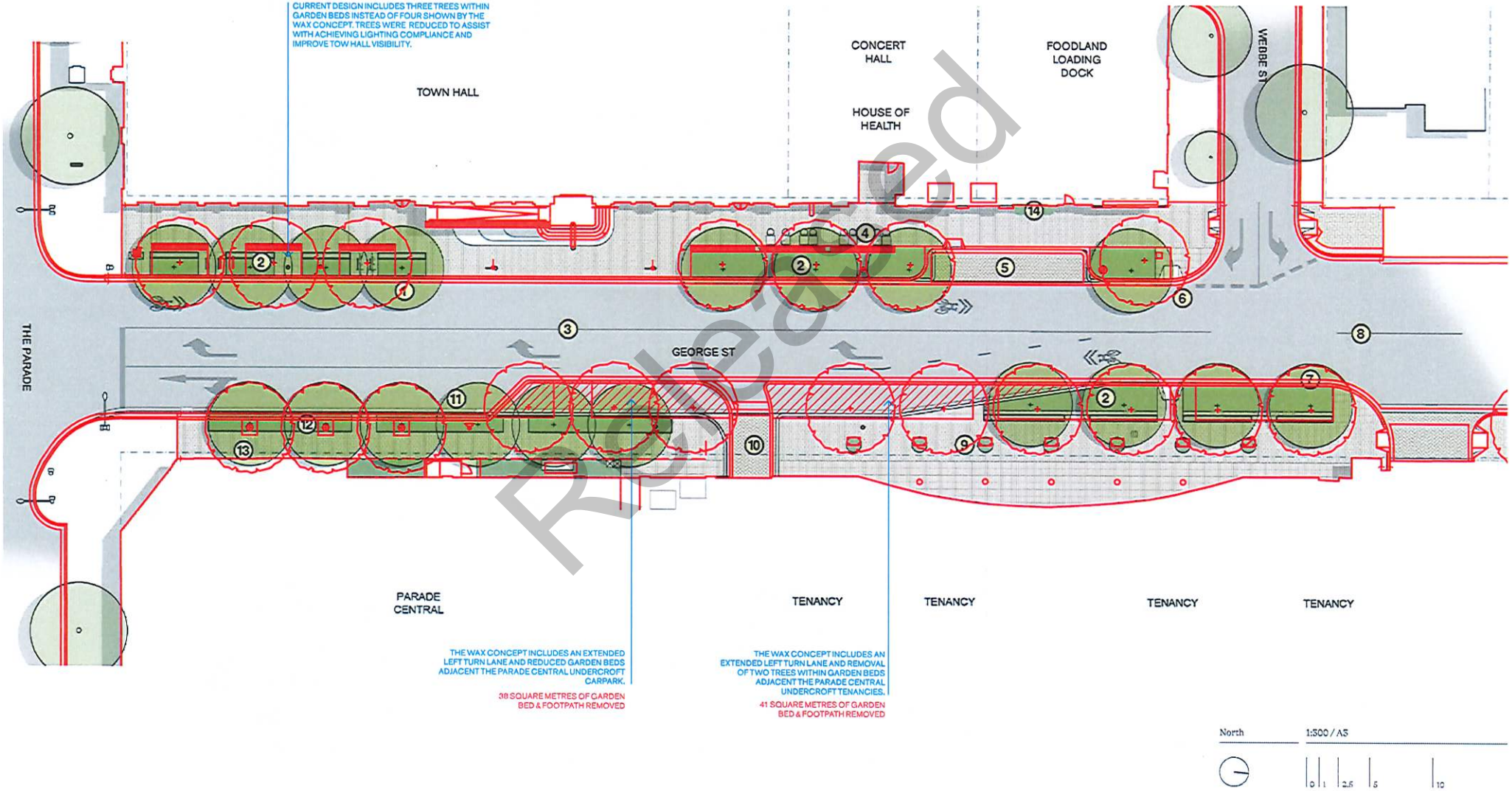
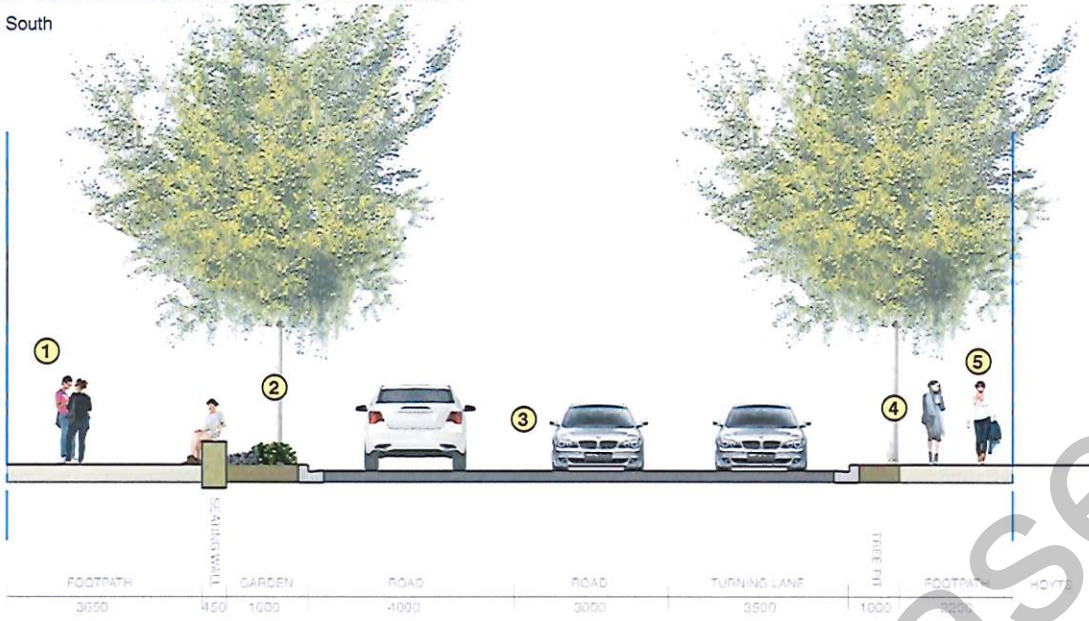
WAX DESIGN WITH CURRENT DESIGN OVERLAY

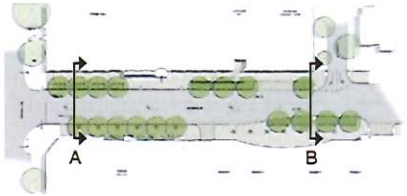
This plan illustrates the WAX concept with the Landskap current design shown overlayed in red.
The primary variations are summarised below.



WAX DESIGN - REVISED URBAN DESIGN APPROACH

Cross Section A: South

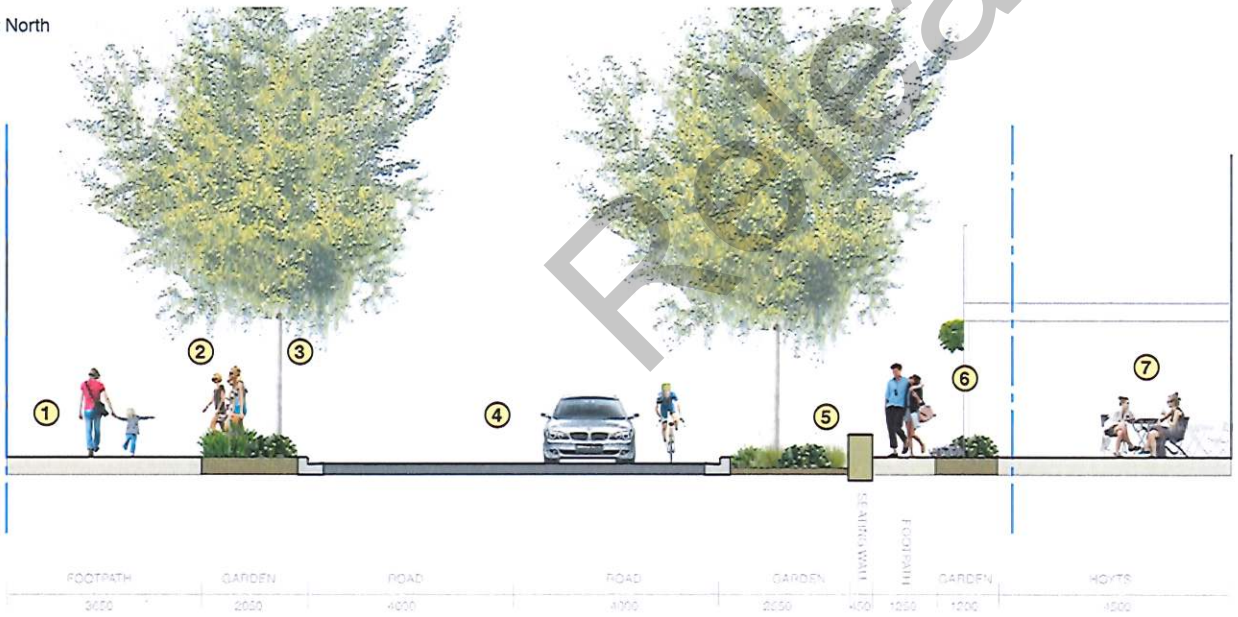




Cross Section A: Urban Design Outcomes

1. Public realm to western edge of George Street consistent with Landskap design
2. Avenue of trees along George Street
3. Road corridor with dedicated left turning lane
4. New trees in tree pit inlets
5. Increased width of footpath

Cross Section B: North



Cross Section B: Urban Design Outcomes

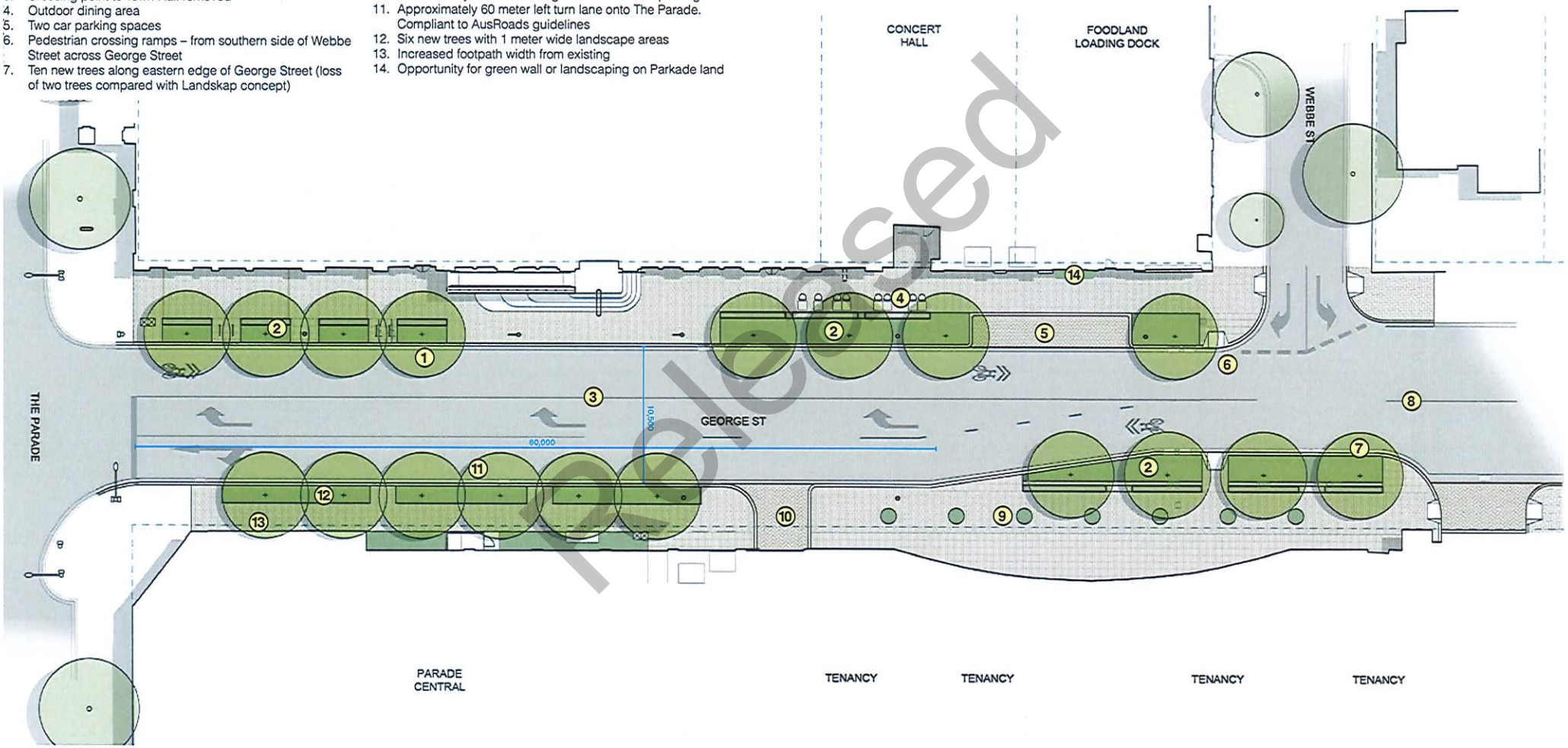
1. Public realm to western edge of George Street consistent with Landskap design
2. Formalised crossing point with pram ramps
3. Avenue of trees along George Street
4. Road corridor width retained with shared use with cyclists
5. Additional garden beds, trees and seating wall
6. Additional garden bed and retention of existing vines to building facade
7. Additional opportunity to active public realm due to building envelop

WAX DESIGN

WAX LANDSCAPE ARCHITECTS, MAY 2023

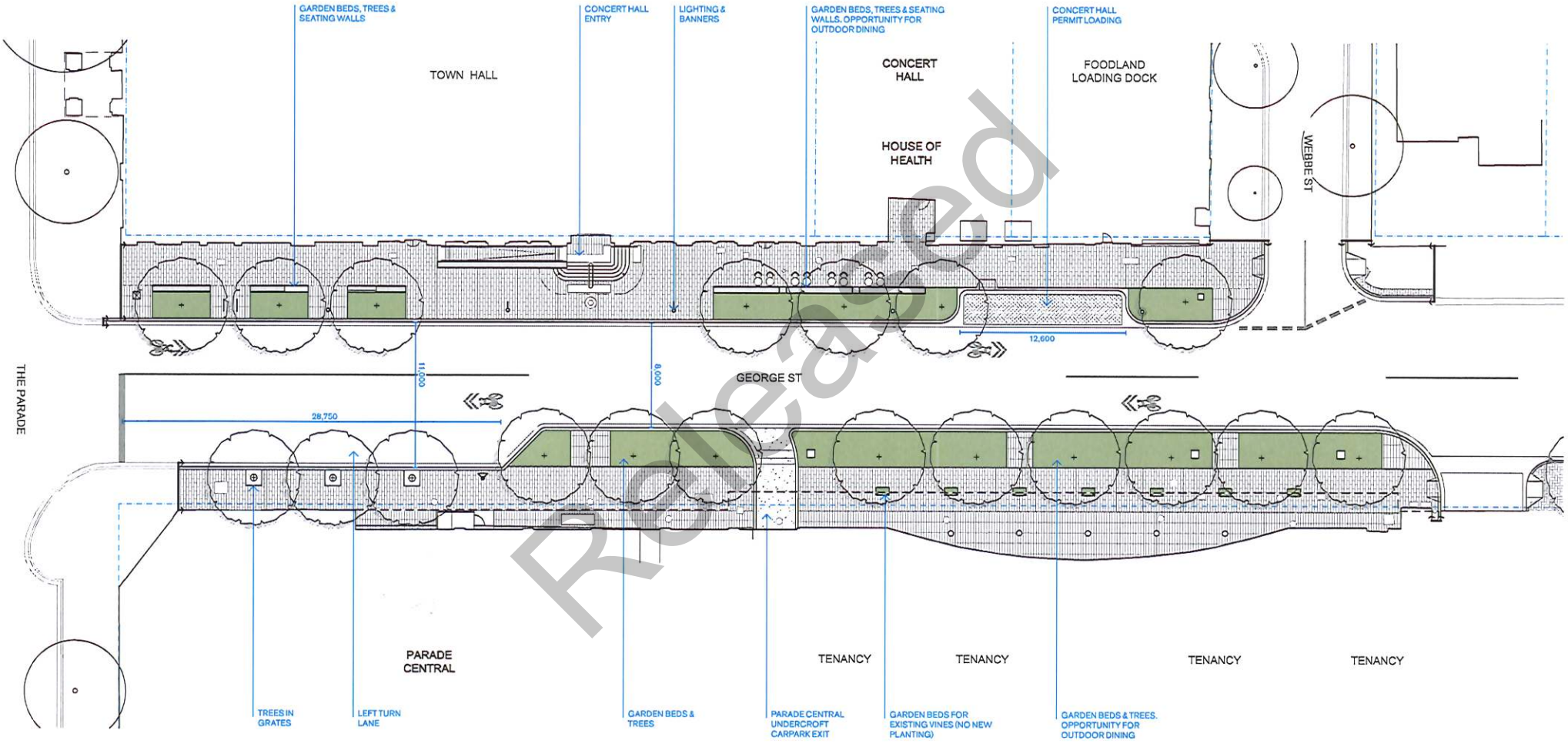
Urban Design Outcomes

1. Eight new trees along western edge of George Street
2. Removal of existing on-street car parking and establishment of garden beds
3. Crossing point to Town Hall removed
4. Outdoor dining area
5. Two car parking spaces
6. Pedestrian crossing ramps – from southern side of Webbe Street across George Street
7. Ten new trees along eastern edge of George Street (loss of two trees compared with Landskap concept)
8. Shared use of roadway by cyclists
9. Additional garden beds around existing vines to Hoyts building facade
10. Left turn only vehicle existing to undercroft car parking
11. Approximately 60 meter left turn lane onto The Parade. Compliant to AusRoads guidelines
12. Six new trees with 1 meter wide landscape areas
13. Increased footpath width from existing
14. Opportunity for green wall or landscaping on Parkade land



CURRENT DESIGN

LANDSKAP & DRYSIDE ENGINEERS, SEPTEMBER 2023



North

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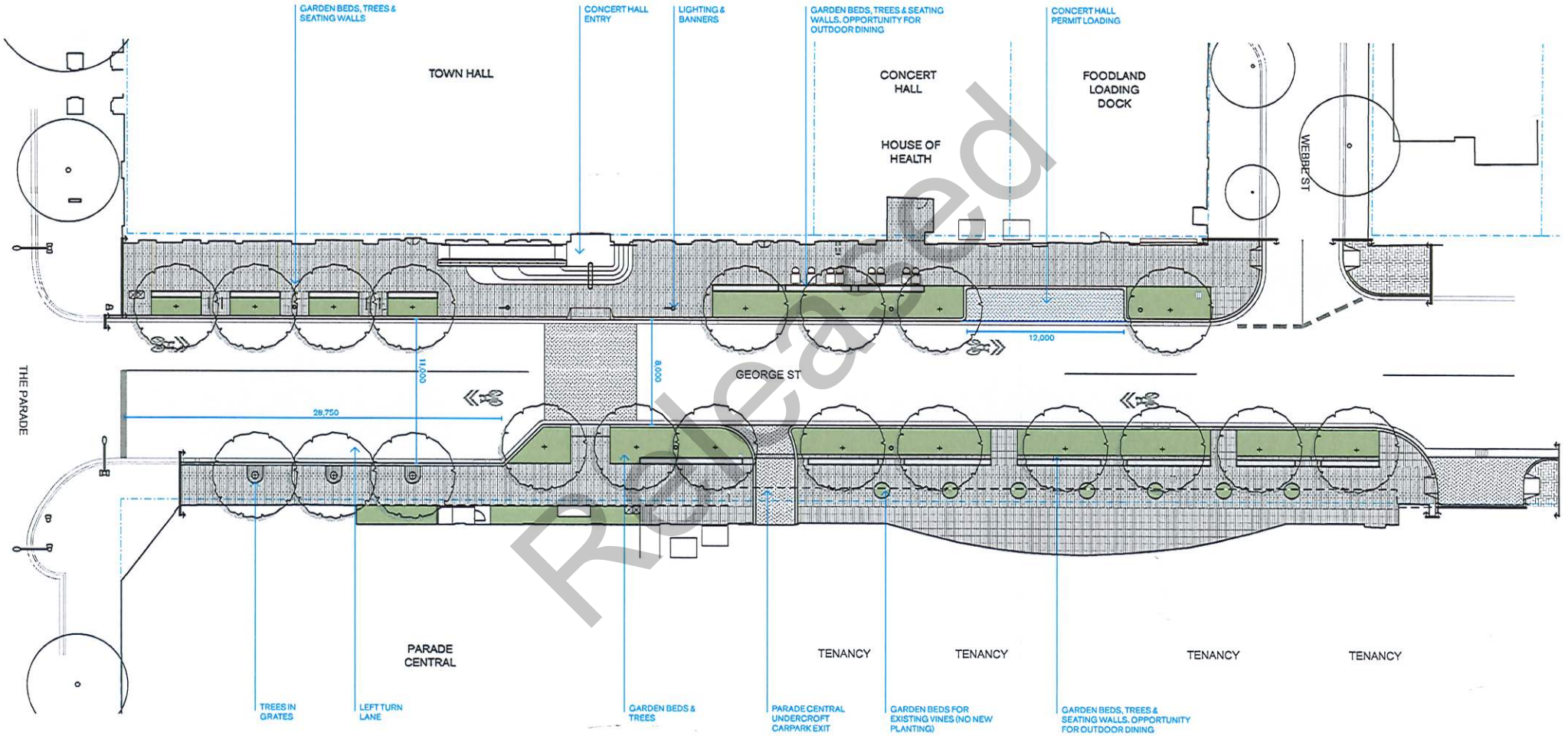
FUNCTIONAL DESIGN

LANDSKAP & DRYSIDE ENGINEERS, MAY 2022



North

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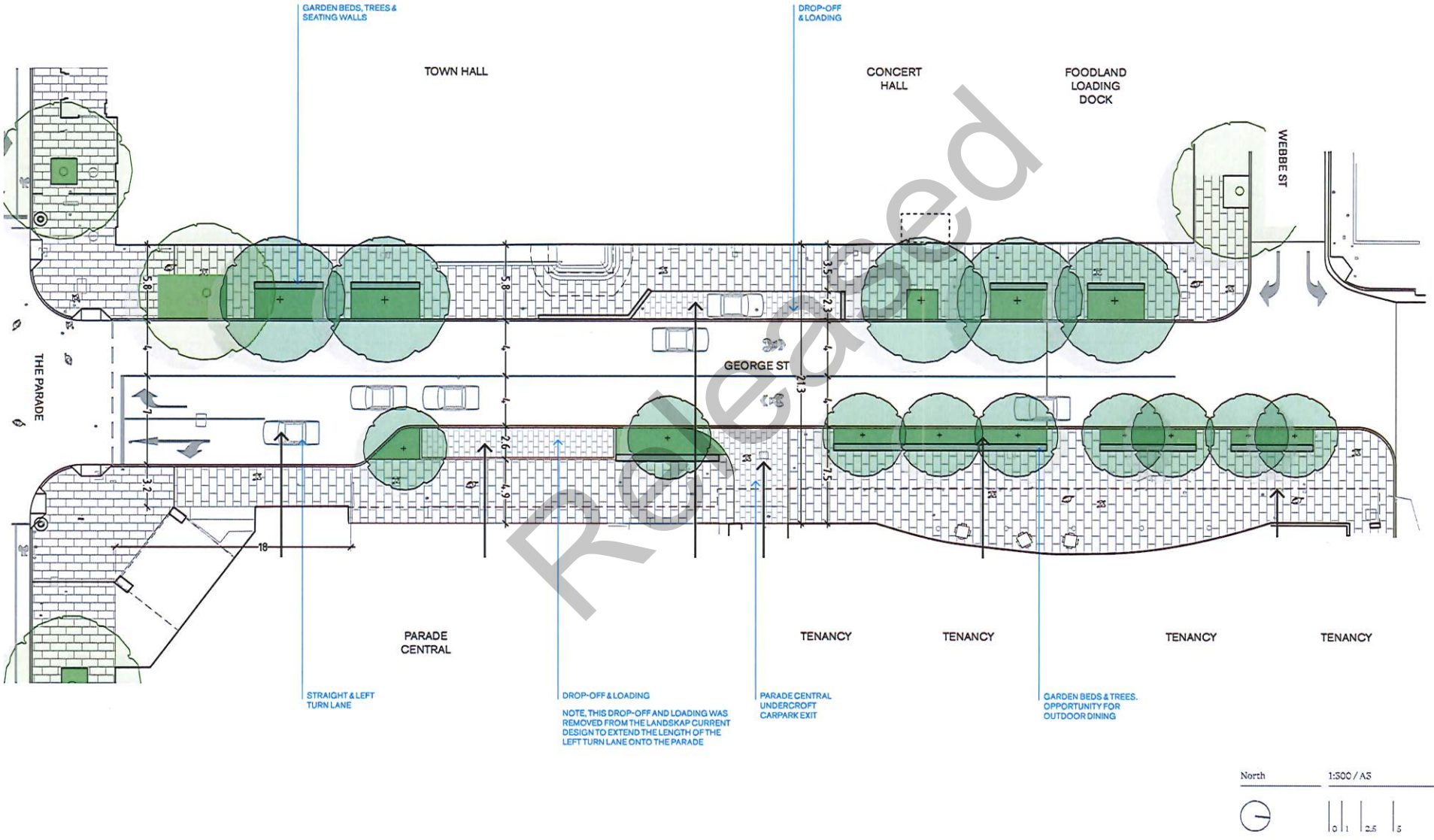
MASTERPLAN DESIGN

NPSP & OXIGEN LANDSCAPE ARCHITECTS, 2019



EXISTING SITE CONDITIONS

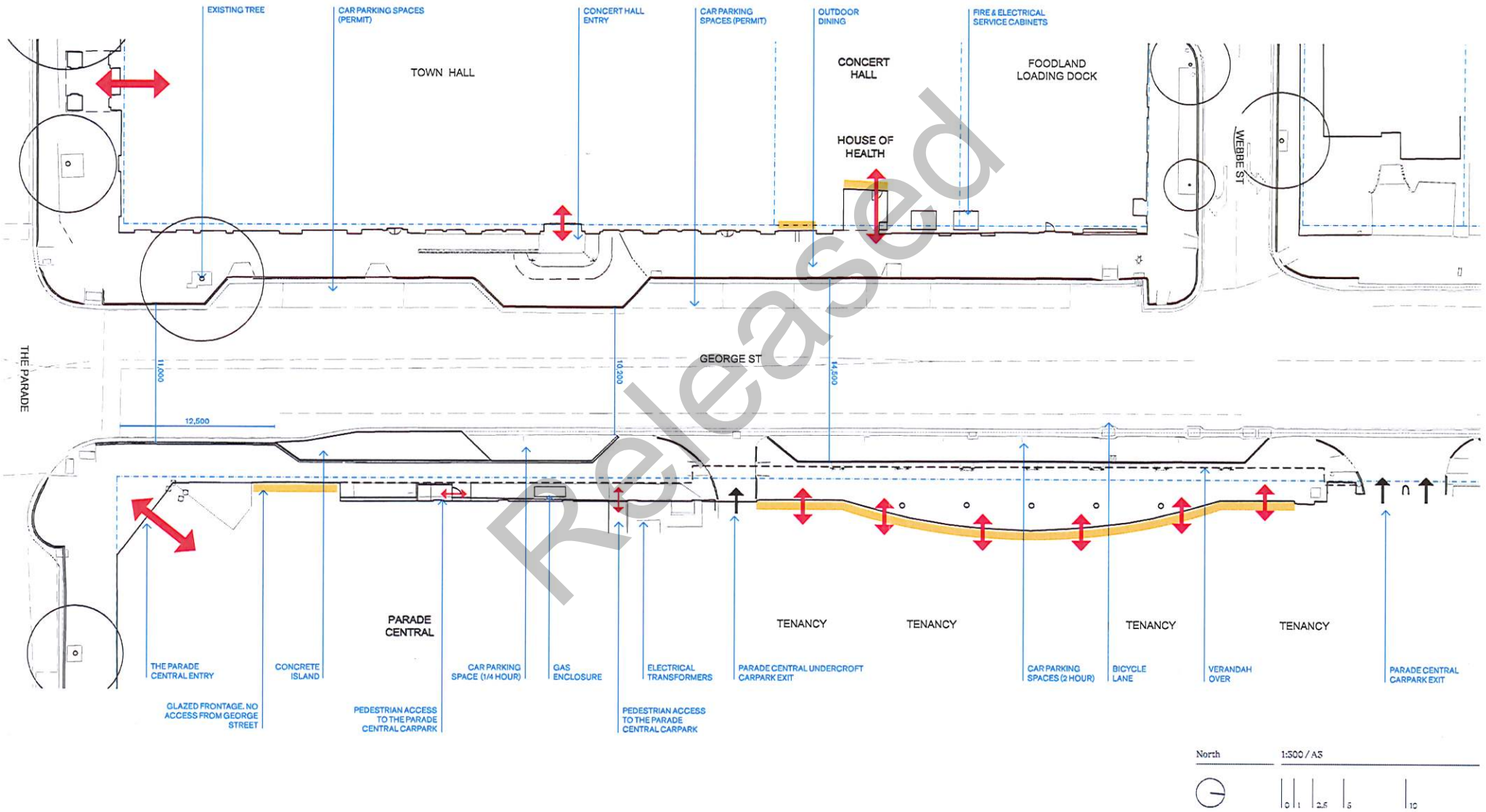
VIEW LOOKING SOUTH ALONG THE WESTERN SIDE OF GEORGE STREET

VIEW LOOKING NORTH ALONG GEORGE STREET FROM THE PARADE INTERSECTION (PHOTO SOURCED FROM GOOGLE MAPS)

VIEW LOOKING NORTH ALONG THE EASTERN SIDE OF GEORGE STREET

VIEW LOOKING SOUTH-WEST TOWARD THE CONCERT HALL & TOWN HALL (PHOTO SOURCED FROM GOOGLE MAPS)

EXISTING SITE CONDITIONS



INTRODUCTION

INTRODUCTION

Landskap Landscape Architects (Landskap) have been engaged by The City of Norwood Payneham and St Peters (NPSP) to provide a review of the urban design and landscape aspects of the George Street concept plan and sections prepared by WAX Landscape Architects.

This report provides a summary and review of design options prepared for George Street, including concepts prepared by:

- Oxigen Landscape Architects for NPSP during the masterplan phase, 2019.
- Landskap Landscape Architects for NPSP during the functional design and detail design phases, 2022 & 2023.
- WAX Landscape Architects, 2023.

THE PARADE MASTERPLAN

The Parade Masterplan was prepared by NPSP in conjunction with Oxigen Landscape Architects and endorsed by Council Elected Members in 2019.

The primary objective of the Masterplan is to provide a planning and design framework that outlines a preferred future for The Parade, building on the intrinsic character of the street, whilst increasing its functionality, amenity and commercial opportunity.

To maintain and enhance the qualities and streetscape character that define The Parade, the Masterplan considers:

- Pedestrian priority, ensuring a safe and comfortable pedestrian environment.
- A reduction in the speed and volume of traffic by providing wider footpaths and prioritising pedestrians at key intersections where appropriate.
- Key intersections reconfigured as important public spaces that feed off adjacent businesses.
- Retention of The Parade's central median and the significant Ironbark plantings.
- An active and vibrant streetscape along the length of The Parade, initially focused on the heart area between Osmond Terrace and Queen Street, but extending to Portrush Road and west to Sydenham Road and Fullarton Road.
- A varied character to The Parade extending from west to east, and recognising the various different land uses and functions that either exist or will be attracted to The Parade in the future.

The following extracts from the Masterplan reinforce the desired character for side streets, including George Street:

Civic Heart (pg. 52)

- *'George Street and The Parade extends the use of this precinct into the night supporting longer opening hours and street life. Civic events focus on the Norwood Town Hall and the varied activities held there'.*

Side Streets (pg. 53)

- *'Whilst most of the activity of The Parade focuses on the street itself, side streets provide access as well as the opportunity to extend commercial activities supporting a broader mixed use precinct'.*

Masterplan (pg. 57)

- *The Parade functions as both a destination and key link in Adelaide's eastern suburbs transport network.*

George Street Key Elements (pg. 72)

- *On-street car parking is removed between The Parade and Webbe Street. Widened, paved footpaths with additional street tree planting and seating create a new community space adjacent the Norwood Town Hall.*

Built form & Street Frontages (pg. 108)

- The Parade Active Frontages & Known Development diagram identifies the importance of active frontages along George Street, refer pg. 108.
- *Various mix of uses to encourage day and night activity.*

Economic Vibrancy (pg. 112)

- *The masterplan supports alfresco and footpath dining.*

DESIGN DEVELOPMENT & DETAIL DESIGN

Landskap are the landscape architectural lead engaged by NPSP for The Parade and George Street design development and detail design phases.

The scope of the engagement includes the following:

- Design development for The Parade from Fullarton Road to Portrush Road suitable for preparation of detail design.
- Detail design for George Street suitable for Tender and Construction.

GEORGE STREET REVIEW

Project	The Parade & George Street
Ref No.	21.060
Client	City of Norwood Payneham St Peters
Date	14.09.2023
Issue	Final

APPENDIX C

LANDSKAP

Attachment H

Confidential

George Street Upgrade Project
Status Report

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City of Norwood Payneham & St Peters

TECHNICAL MEMO

TO	Stuart Pope, Project Manager, City of Norwood Payneham & St Peters
FROM	Bill Zhang, Managing Director, Be Engineering Solutions Edward Chan, Senior Transport Engineer, and Planner, Be Engineering Solutions
CC	Gayle Buckby, Manager Traffic and Integrated Transport, City of Norwood Payneham & St Peters
DATE	10 October 2023
SUBJECT	SCENARIO ASSESSMENT FOR THE GEORGE STREET AND THE PARADE INTERSECTION

BACKGROUND

Be Engineering Solutions (BEES) has been engaged by The City of Norwood Payneham & St Peters (The Council) to undertake a traffic performance assessment of proposed options for the George Street and The Parade intersection Upgrade (TS302) as part of The Parade Masterplan. This technical memo provides a review summary of the previous modelling undertaken by Cirqa and provides further assessment of the proposed options for the George Street Upgrade Project.

The proposed options should be considered within the context of the wider transport strategy and land-use plans, especially given the policy priorities established by national bodies such as Infrastructure Australia who emphasise that transport investment is based on a movement and place framework (*Infrastructure Australia, 2021 Australian Infrastructure Plan: Reform Priority List*).

From the perspective of road hierarchy, George Street is classified as a collector-distributor road whilst The Parade is classified as a secondary arterial road. Whilst the intersection has significant vehicle movement functions within the local area, it is located at the heart of The Parade community and commercial precinct which attracts high volumes of pedestrian movements.

SUMMARY OF CIRQA'S TRAFFIC MODELLING

Intersection performance was previously reviewed by Cirqa with SIDRA models developed based on the DIT calibrated model based on 4 February 2021. BEES have reviewed the Cirqa developed models with consideration for the DIT's *Traffic Modelling Guidelines: SIDRA*

Intersection. The following key issues were identified within **Cirqa SIDRA Modelling 13 Jan 23 – For Issue:**

- The models developed by Cirqa use 'User-Given Phase Times' for all modelled scenarios where several resulted in cycle times that do not align with the Average Cycle Length specified by the DIT issued signal operation summary.
- The pedestrian scramble phase was modelled with a phase length of 32 seconds which is significantly higher than the DIT specified and fixed scramble phase length of 28 seconds in the operational summaries for 29 March 2023 and 27 July 2023. This results in an overestimated loss of capacity for the vehicle movements.
- The scenario models developed by Cirqa use the same user given phase times as the corresponding base case. Based on DIT SIDRA Modelling Guideline, the best practice, scenario modelling should use either 'user given cycle time', 'practical cycle time' or 'optimum cycle time' (depending on the modelling purpose) functions to allow optimisation by SIDRA. This is to better represent the potential signal operation since the traffic signals operate using the adaptive SCATS system which can detect demand. User given phase times in the scenario models can yield results which may misrepresent the potential site conditions. Therefore, it is highly unlikely that the signals, under adaptive operating conditions, would operate the same when under significantly different demand scenarios.
- The base model and the models developed by Cirqa were processed in a superseded version of SIDRA which may yield slightly different results.
- The models developed by Cirqa use the same heavy vehicle class inputs for all time periods and scenarios (based on the DIT's model for 4 February). As per best practice, heavy vehicle class inputs vary between time periods since the composition of vehicles typically change depending on the time of day.
- Per Cirqa's *Proposed Mixed Use Development: 166A The Parade, Norwood, Traffic and Parking Report, 2019* on Page 41, in relation to the intersection of The Parade and George Street that the COMO development traffic generation was indicated by Cirqa "will be readily accommodated with minimal impact on their existing operation". This information contradicts Cirqa's latest claim on traffic operational performance at the intersection post development.

TRAFFIC MODELLING METHODOLOGY

For this assessment, traffic performance has been assessed using SIDRA Intersection in accordance with the Department for Infrastructure and Transport's (DIT) *Traffic Modelling Guidelines: SIDRA Intersection*. The models developed for this assessment are based on the previous DIT calibrated model dated 4 February 2021. However, the model has been updated where there is more up-to-date traffic data available.

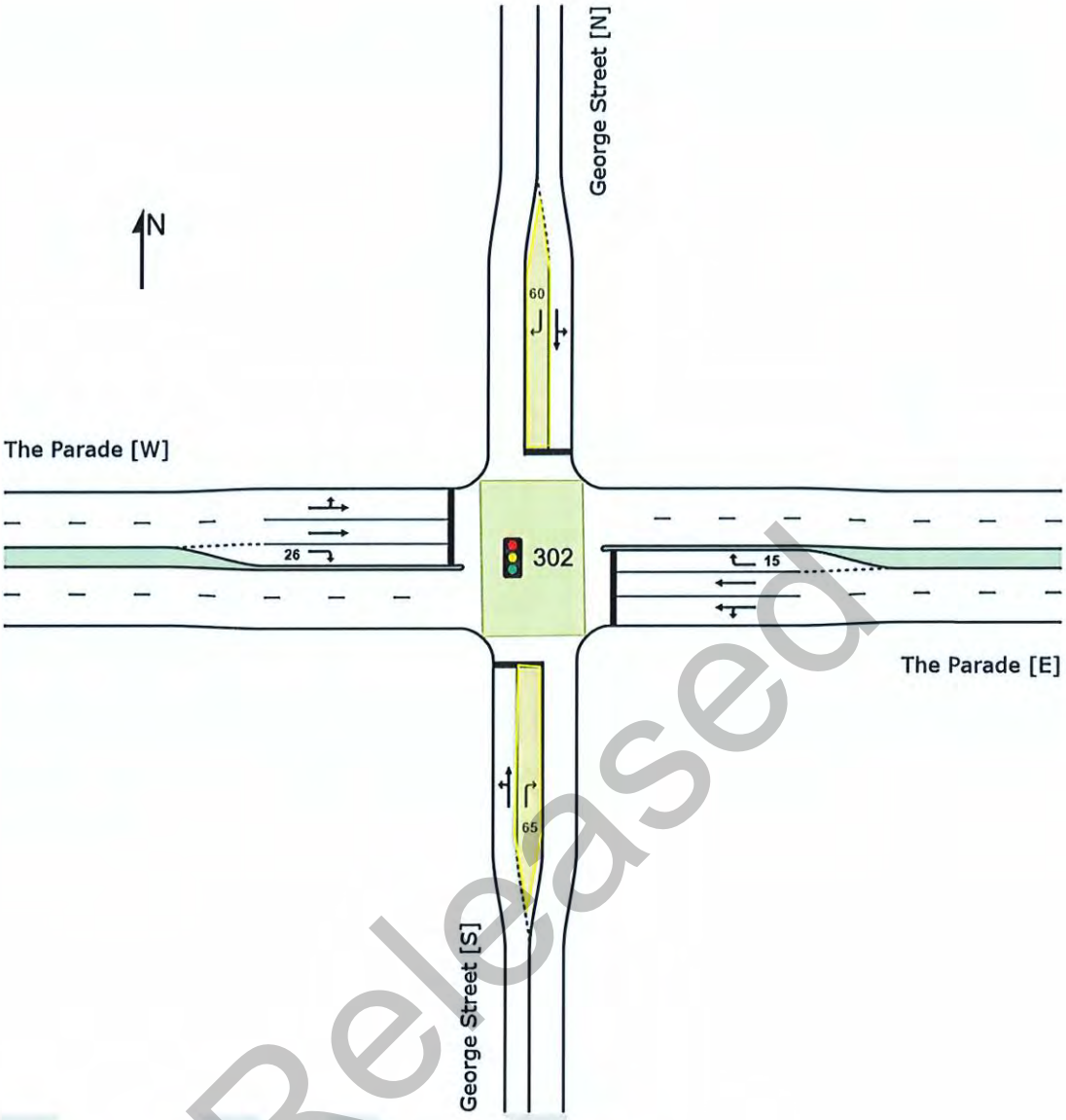
The table below outlines aspects of the model developed that differs from the DIT calibrated model. As such any input that is not specifically detailed in the table below, it can be assumed that it is the same as that of the models developed by DIT.

Input	Model Information
Traffic Volumes	From the review of Cirqa's traffic modelling, Friday and Saturday were established as the busiest periods at TS302 due to the adjacent community and commercial traffic generators. For the analysis, Cirqa predicted volumes are used for primary comparison. Volumes for Friday 31 March 2023 and Saturday 1 April 2023 supplied by Austraffic are used in this assessment for reference. Although this data set is based on conditions before the completion of the development on the south side of The Parade, comparison of DIT supplied SCATS VS data from Friday 31 March 2023 and Saturday 1 April 2023 with that from Friday 25 August 2023 and Saturday 26 August 2023 finds negligible difference between the total intersection throughputs. The difference is more likely to be attributed to daily traffic fluctuations than additional volume generated by the partially completed development. In short, the traffic count data from Friday 31 March 2023 and Saturday 1 April 2023 are fit-for-purpose and is representative of current conditions for the purpose of modelling.
Peak Flow	For this assessment, the counted volume through the intersection (which does not necessarily represent demand) is used for the volume input. As such, a 95% peak flow factor is adopted for all movements and a peak flow period of 30 minutes is adopted for each model case to simulate demand volume conditions.
Modelled Peak Periods	The traffic models only consider two peak periods which are derived using the traffic count data supplied by Austraffic as per the above where: • Friday evening (PM) Peak: 17:00 – 18:00 • Saturday mid-day (BUS) Peak: 12:15 – 13:15
Basic Saturation Flow	This is a calibrated input based on the DIT supplied SCATS Operational Summary Maximum Flow (MF) data for 29 March 2023 which is used as a reference. For lane detectors that did not produce a MF value, either the existing input calibrated by DIT is deemed fit-for-purpose or the calibrated value for the adjacent lane is used.
Pedestrian Timing Data	These inputs are based on the DIT supplied SCATS Operational Summary Pedestrian Timing data and are calibrated such that the pedestrian phase

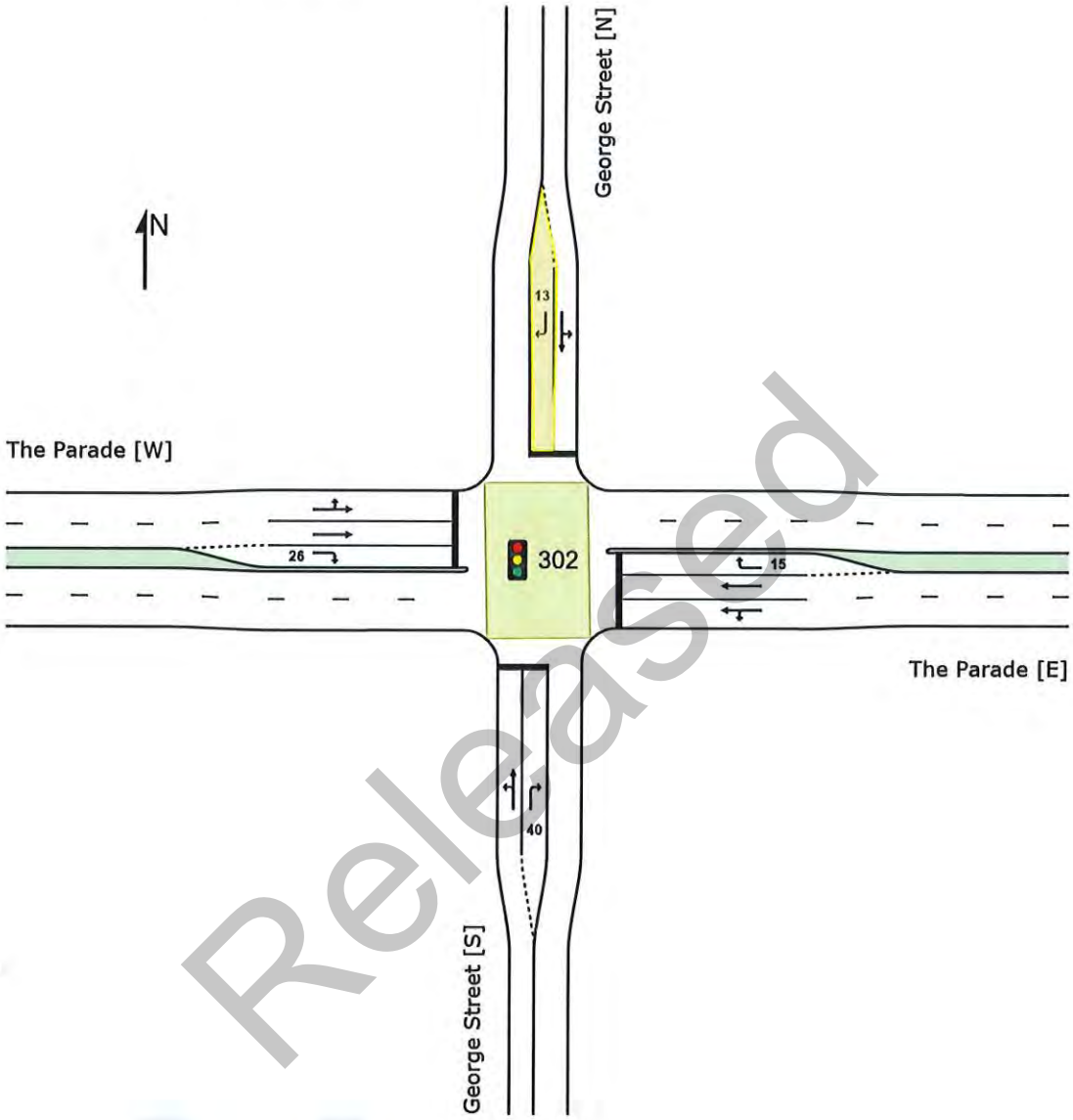
Input	Model Information
	for the models is 28s as per the SCATS Operational Summary Average Phase Times data.
Passenger Car Equivalents (Heavy Vehicles)	A conservative value for the heavy vehicle (HV) passenger car equivalent input of 2.0 is adopted.
Phasing and Timing	Based on the DIT supplied SCATS Operational Summary, the average cycle length for both peaks to be assessed was 95s. As such, a cycle length of 95s was adopted for the modelling of all scenarios.

For this assessment, the following proposed options are considered:

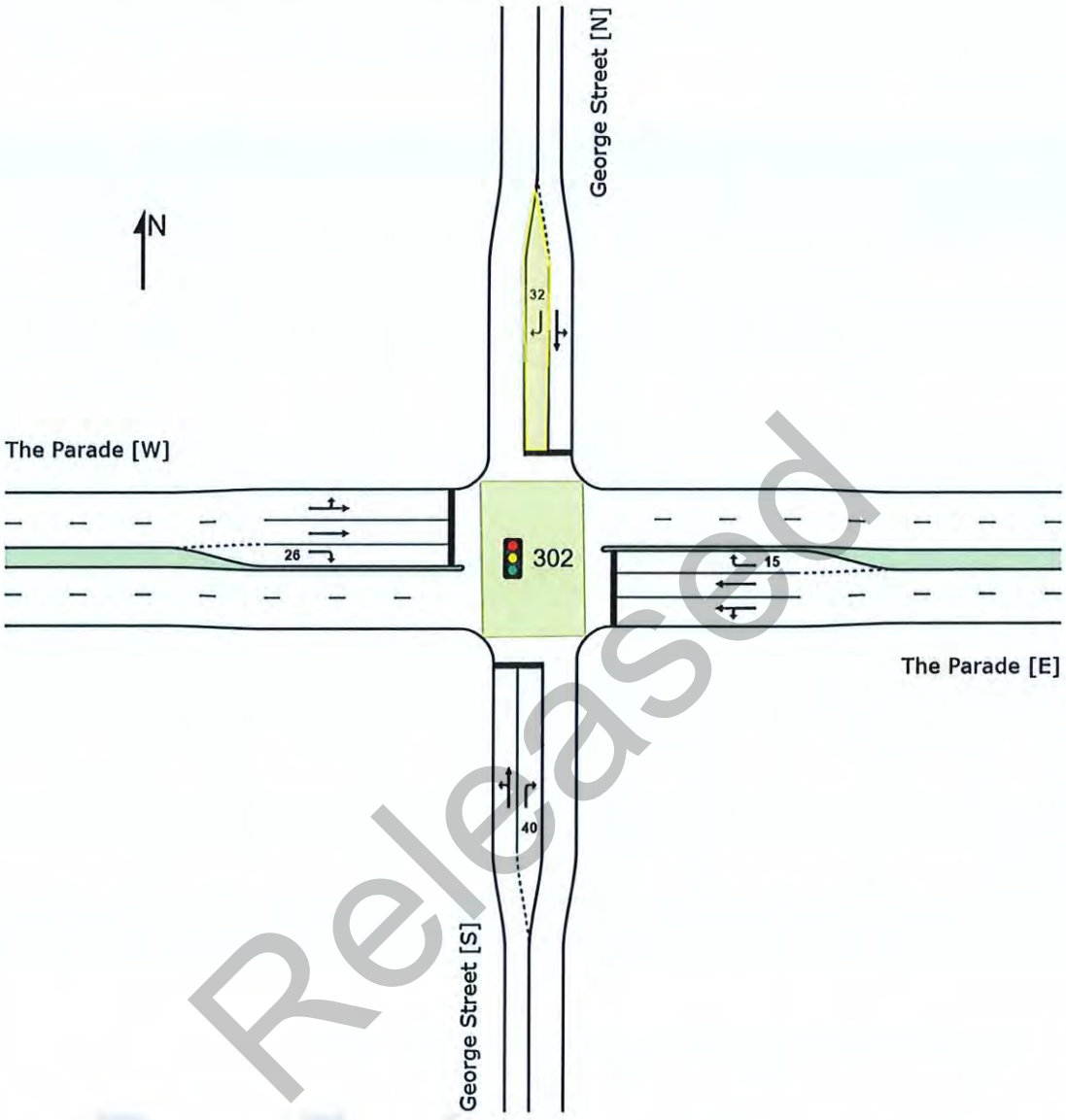
- **Option 1**: Cirqa's proposal to extended right turn lanes on George Street (i.e., 65m right turn lane on George Street [S] and 60m right turn lane on George Street [N] approach). Changes to geometry are highlighted in yellow in the following illustration.


George Street [N]
N
60
The Parade [W]
26
302
15
The Parade [E]
65
George Street [S]

- **Option 2**: Shortened right turn lane (13m) on the George Street (N) approach as per the latest proposed design by Landskap. Changes to geometry are highlighted in yellow in the following illustration.



- **Option 3**: An amended Landskap design with a right turn lane geometry (32m) based on the existing George Street (N) approach design.



As per DIT traffic modelling guidelines, all models developed for the design options do not include operational economies such as queuing in the taper. However, operational economies may be included in base case modelling. For this assessment, the base case is based on the geometry from the DIT calibrated model.

In accordance with DIT best practice, the quantitative metrics used to evaluate performance include Degree of Saturation (DOS), Level of Service (LOS, based on average vehicle movement delays) and 95th Percentile Vehicle Queue Length (95Q).

FRIDAY PM PEAK PERIOD (CIRQA MODELLED VOLUME)

The results of the SIDRA analysis for the Friday PM Peak period under the Cirqa predicted volume conditions are summarised in the table below. It should be noted that the reported 95Q is measured in metres.

App.	Mvmt.	Existing			Option 1			Option 2			Option 3		
		DOS	LOS	95Q	DOS	LOS	95Q	DOS	LOS	95Q	DOS	LOS	95Q
George Street	L	0.79	D	80	0.83	D	84	0.76	D	77	0.79	D	80
	T	0.79	D	80	0.83	D	84	0.76	D	77	0.79	D	80
	R	0.63	E	27	0.63	E	27	0.63	E	27	0.63	E	27
The Parade (East)	L	1.04	F	239	1.01	F	223	1.07	F	257	1.04	F	239
	T	1.04	F	292	1.01	F	272	1.07	F	316	1.04	F	292
	R	0.24	E	17	0.23	E	17	0.25	E	17	0.24	E	17
George Street	L	1.02	F	162	1.03	F	168	1.08	F	192	1.06	F	181
	T	1.02	F	162	1.03	F	168	1.08	F	192	1.06	F	181
	R	0.70	E	28	0.79	E	29	0.91	F	31	0.70	E	28
The Parade (West)	L	0.45	C	57	0.44	C	56	0.47	C	58	0.45	C	57
	T	0.45	C	57	0.44	C	57	0.47	C	58	0.45	C	57
	R	0.73	E	22	0.73	E	22	0.73	E	22	0.73	E	22
Intersection		1.04	F	-	1.03	E	-	1.08	F	-	1.06	F	-

Note: * denotes that the 95Q exceeds the vehicle storage length.

SATURDAY PEAK PERIOD (CIRQA MODELLED VOLUME)

The results of the SIDRA analysis for the Saturday mid-day peak period under the Cirqa predicted volume conditions are summarised in the table below. It should be noted that the reported 95Q is measured in metres.

App.	Mvmt.	Existing			Option 1			Option 2			Option 3		
		DOS	LOS	95Q	DOS	LOS	95Q	DOS	LOS	95Q	DOS	LOS	95Q
George Street	L	0.64	D	68	0.64	D	68	0.64	D	68	0.64	D	68
	T	0.64	C	68	0.64	C	68	0.64	C	68	0.64	C	68
	R	0.73	E	32	0.73	E	32	0.73	E	32	0.73	E	32
The Parade (East)	L	0.72	D	76	0.72	D	76	0.72	D	76	0.72	D	76
	T	0.72	D	97	0.72	D	97	0.72	D	97	0.72	D	97
	R	0.88	F	28	0.88	F	28	0.88	F	28	0.88	F	28
George Street	L	1.03	F	201	0.98	F	174	1.14	F	263	1.07	F	224
	T	1.03	F	201	0.98	E	174	1.14	F	263	1.07	F	224
	R	0.54	E	33	0.54	D	33	1.08	F	61	0.54	E	33
The Parade (West)	L	1.00	F	207	1.00	F	207	1.00	F	207	1.00	F	207
	T	1.00	F	207	1.00	F	207	1.00	F	207	1.00	F	207
	R	0.64	E	30	0.64	E	30	0.64	E	30	0.64	E	30
Intersection		1.03	E	-	1.00	E	-	1.14	F	-	1.07	F	-

Note: * denotes that the 95Q exceeds the vehicle storage length.

FRIDAY PM PEAK PERIOD (CURRENT VOLUME)

To ensure a comprehensive assessment of the three options, the current measured volume conditions are also considered. The results of the SIDRA analysis for the Friday PM Peak period under current volume conditions are summarised in the table below. It should be noted that the reported 95Q is measured in metres.

App.	Mvmt.	Existing			Option 1			Option 2			Option 3		
		DOS	LOS	95Q	DOS	LOS	95Q	DOS	LOS	95Q	DOS	LOS	95Q
George Street	L	0.65	D	58	0.65	D	58	0.57	D	54	0.60	D	55
	T	0.65	D	58	0.65	D	58	0.57	C	54	0.60	D	55
	R	0.28	E	11	0.27	E	11	0.31	E	11	0.26	D	11
The Parade (East)	L	0.50	C	52	0.50	C	52	0.53	C	53	0.52	C	52
	T	0.50	C	64	0.50	C	64	0.53	D	69	0.52	D	67
	R	0.58	E	21	0.58	E	21*	0.77	E	22*	0.69	E	21
George Street	L	0.90	E	103	0.89	E	102	0.95	F	118	0.88	E	101
	T	0.90	E	103	0.89	D	102	0.95	F	118	0.88	E	101
	R	0.61	D	31	0.61	D	31	0.81	F	33*	0.52	E	30
The Parade (West)	L	0.87	D	160	0.87	D	160	0.95	E	196	0.92	E	181
	T	0.87	D	160	0.87	D	160	0.95	E	196	0.92	E	181
	R	0.30	E	21	0.30	E	21	0.34	E	22	0.32	E	21
Intersection		0.90	D	-	0.89	D	-	0.95	E	-	0.92	E	-

Note: * denotes that the 95Q exceeds the vehicle storage length.

SATURDAY PEAK PERIOD (CURRENT VOLUME)

The results of the SIDRA analysis for the Saturday mid-day peak period under current volume conditions are summarised in the table below. It should be noted that the reported 95Q is measured in metres.

App.	Mvmt.	Existing			Option 1			Option 2			Option 3		
		DOS	LOS	95Q	DOS	LOS	95Q	DOS	LOS	95Q	DOS	LOS	95Q
George Street	L	0.58	D	58	0.58	D	58	0.56	D	57	0.58	D	58
	T	0.58	C	58	0.58	C	58	0.56	C	57	0.58	C	58
	R	0.24	D	11	0.22	D	10	0.25	E	11	0.29	E	11
The Parade (East)	L	0.76	D	86	0.76	D	86	0.77	D	86	0.76	D	86
	T	0.76	D	97	0.76	D	97	0.77	D	100	0.76	D	97
	R	0.87	F	33	0.87	F	33*	1.00	F	42*	0.87	F	33
George Street	L	0.90	E	124	0.86	D	115	1.01	F	168	0.96	F	142
	T	0.90	E	124	0.86	D	115	1.01	F	168	0.96	F	142
	R	0.46	D	29	0.46	D	29	0.74	E	32*	0.46	E	29
The Parade (West)	L	0.81	D	118	0.81	D	118	0.85	D	124	0.81	D	118
	T	0.81	D	118	0.81	D	118	0.85	D	124	0.81	D	118
	R	0.50	E	22	0.50	E	22	0.52	E	22	0.50	E	22
Intersection		0.90	D	-	0.87	D	-	1.01	E	-	0.96	E	-

Note: * denotes that the 95Q exceeds the vehicle storage length.

DISCUSSION

From the results of the analysis under Cirqa predicted volume conditions, the two modelled peak periods indicate that:

- Option 1 does not provide significant benefit to the overall performance of the intersection.
    - There are negligible capacity benefits for the intersection with the DOS reducing by up to 0.03 which indicates an improvement of up to 1.7 vehicle movements per signal cycle for the entire intersection.
    - Although the LOS improves from LOS F to LOS E for the intersection, the improvement in intersection LOS is due to improvement to the average delay

for The Parade movements whilst the LOS is unchanged for the George Street (N) approach.

- The difference in vehicle queues for the George Street (N) approach are negligible representing a difference of up to one vehicle. Hence there are limited, if any, network benefits associated with extending the right turn lanes.

- Option 2 results in notable impact to performance for the existing intersection.
  - The higher DOS is due to (a) decreased phase time for the east-west movement to provide more capacity to the north-south movement and (b) a greater reduction in lane capacity for George Street (N) approach caused by the short lane effect. The increase in intersection DOS indicates an impact of up to 6.8 vehicle movements per signal cycle for the entire intersection.
  - The LOS for the George Street (N) approach is expected to remain the same but the average delay nonetheless increases by up to 100 seconds. The intersection LOS is likely to downgrade from LOS E to LOS F.
  - The increase in 95Q for the George Street (N) approach represents additional vehicle queues of up to 9 vehicles. It is highly likely that the queue will block the through vehicle movements which will result in some wasted green time.
- Option 3 results in marginal impact to performance for the existing intersection.
  - The increase in intersection DOS indicates an impact of up to 2.4 vehicle movements per signal cycle for the entire intersection.
  - The LOS for the George Street (N) approach is expected to remain unchanged at LOS F but there is an increase in average delay by up to approximately 30 seconds.
  - The increase in 95Q for the George Street (N) approach represents additional vehicle queues of up to 4 vehicles. However, the right turn queue is not expected to exceed the available storage space of the right turn lane which decreases the likelihood of the queue blocking the through and left turn movement.

Despite there being queues for all approaches, these are not expected to extend to any significant nearby intersections such as the intersection of Portrush Road and The Parade. As per the existing conditions, all three options will have queues that have some effect on minor intersections and accesses, such as at Webbe Street.

Whilst the current volume conditions yield different quantitative results, similar conclusions to that of the Cirqa predicted volume conditions can be drawn; Option 1 providing marginal benefit, Option 2 having a noticeable impact on performance and Option 3 having a marginal impact on performance for the intersection.

SUMMARY AND RECOMMENDATIONS

The focus of this technical memo is to compare the three options developed for the upgrade of George Street/The Parade Intersection Upgrade as part of the George Street Upgrade Project. The assessment finds that:

- The counted traffic volume does not appear to have changed significantly between March/April and August 2023. The discrepancy is more likely due to minor daily demand fluctuations.
- The assessment confirms that the current right turn lane on the Geroge Street North approach provides a satisfactory performance for traffic and pedestrian movements.
- Extending the right turn lanes on the George Street approaches (Option 1) as per Cirqa's proposed intersection layout does not provide significant benefit to the approaches and/or the overall intersection performance in comparison to the existing conditions.
- Decreasing the length of the right turn lane from the George Street (N) approach to 13m as per the Landskap proposed design (Option 2) will result in noticeable increases in queue lengths and average delays in comparison to the existing conditions.
- The alternative proposed design of the George Street (N) approach which decreases the right turn lane length to 32m (Option 3) does not significantly compromise the performance and will result in marginal increases in queue lengths and average delays in comparison to the existing conditions. The design is optimised to contain the predicted 95Q of 33m.
- The current volume conditions yield better results for all options since the volume is lower than the Cirqa predicted conditions, but similar conclusions are drawn (e.g., the discrepancy is systematic).

OTHER TRANSPORT ENGINEERING AND PLANNING CONSIDERATIONS

Whilst the intersection performance is essential in the evaluation of the proposed redevelopment of the George Street and The Parade precinct, it is necessary to consider broader transport and land-use planning principles, for instance understanding the road in the context of function and hierarchy. The immediate vicinity of the George Street and The Parade intersection is characterised as commercial and retail with a high volume of pedestrian movements and outdoor dining. As such, the road has several competing functions including as a link for pedestrian, cyclist and vehicle movements as well as a place which attracts people for cultural, community and retail functions.

Cirqa's proposed intersection layout (Option 1) provides only marginal benefits for traffic performance at TS302. The increase in roadway to facilitate the additional turning lane space compromises the place activation objectives which have been identified in The Parade

Masterplan which also includes creating a lower speed pedestrian friendly environment with wider footpaths and greening tree planting.

Therefore, it is recommended that Option 3, which is an optimised design iteration to contain the predicted 95% of queue length for the right turn movement from the George Street (N) approach and where the right turn lane geometry is based on the existing, is adopted for the final design since it provides a balance between traffic operation and performance, road safety and the place activation measures which are identified in The Parade Masterplan.

Kind Regards

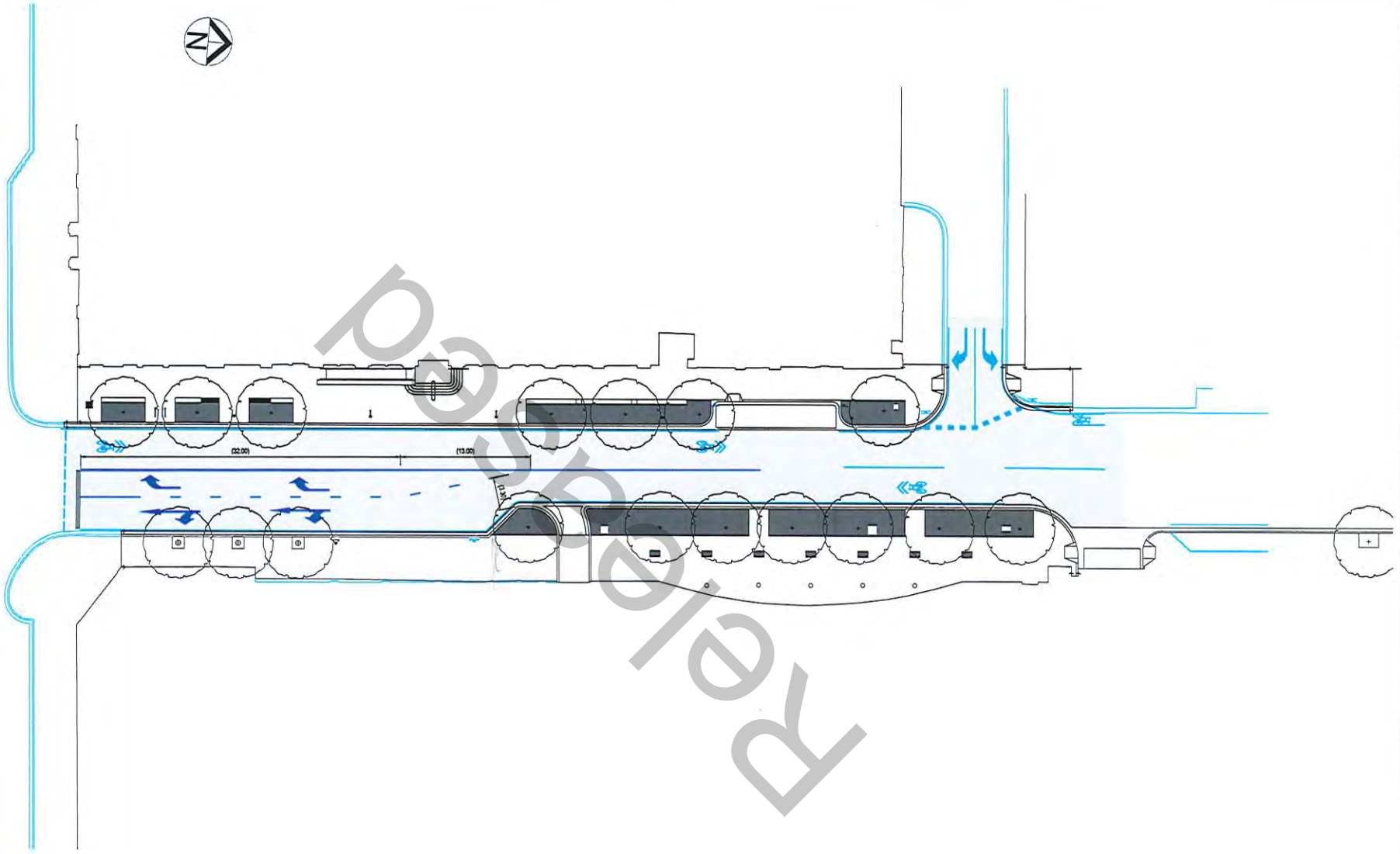
Edward Chan
Senior Traffic Engineer
Be Engineering Solutions Pty Ltd

Reviewed by:

Bill Zhang
Managing Director
Be Engineering Solutions Pty Ltd

Enc:
Attachment #1: SIDRA Model Outputs – TS302 20230925 Cirqa Volumes
Attachment #2: SIDRA Model Outputs – TS302 20230925 Current Volumes

H15



FOR MODELLING

APPENDIX D

REV	DESCRIPTION	DRAWN	CHECK	APPD	DATE
A	FOR MODELLING	BEES	EC	EC	13.10.2023

FILE REFERENCE: BE21-212.SAKH.3dwg.dwg

SCALES: 1:200 @ A1 (0, 2, 4, 8, 12m)

UNCONTROLLED DOCUMENT WHEN PRINTED

100 MILLIMETERS ON ORIGINAL DRAWING

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ABN 90 631 252 756

CLIENT: City of Norwood Payneham & St Peters

GEORGE STREET
NORWOOD
CITY OF NORWOOD PAYNEHAM & ST PETERS
ROAD UPGRADE

GENERAL LAYOUT SKETCH (OPTION 3)

FOR MODELLING

DESIGN BY:	DRAWN BY:	PROJECT #	SHEET SIZE:
BEES	BEES	BE21-212	A1
		SURVEY # -	

DRAWING #	SHEET #	REV #
BE21-212	SK02	A

Attachment I

Confidential

George Street Upgrade Project
Status Report

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City of Norwood Payneham & St Peters

File Number: qA1570
Enquiries To: Stuart Pope
Direct Telephone: 8366 4524

28 November 2023

Spero Tsapaliaris
Chapley Group
PO Box 3065
NORWOOD SA 5067

Dear Spero

GEORGE STREET UPGRADE PROJECT

I refer to our various meetings regarding the George Street Upgrade Project.

Thank you for providing the Council with the SIDRA traffic modelling and urban design review which we understand you have commissioned in association with the Rocca Property Group, regarding the *George Street Upgrade Project* including:

- George Street Capacity Analysis - The Parade / George Street – prepared by Cirqa Pty Ltd - 5 June 2023; and
- George Street Urban Design Review – prepared by WAX Design - May 2023.

As previously advised during our meetings, the *George Street Upgrade Project* and the associated upgrade to the local stormwater network, are projects that have been approved by the Council and construction is scheduled to commence in the 2023-2024 Financial Year.

As such, the process of Council staff meeting with and consulting with adjoining property owners, including the Chapley Group is to ensure that you are aware of the scheduling, the extent of works which are to be undertaken and to ensure that access to your property during construction is not compromised and any issues associated with the construction work are taken into account prior to works commencing.

Notwithstanding this, I confirm that following your request to meet, during our recent meetings, we undertook to review and assess the proposals that are referred to above for the purposes of determining whether any amendments should be made to the endorsed design noting that consultation on the approved design has been undertaken on previous occasions.

In response to the matters which have been raised in the documents that you have commissioned; I confirm that Council staff have undertaken a review of the documents and some changes to the design have been made to improve functionality of the intersection whilst balancing the outcomes of improved amenity and activation of the precinct which form part of the overall Masterplan for The Parade.

To this extent, an amended design for George Street **(Option 3) has been prepared** which balances performance of the intersection based on the existing intersection conditions, whilst incorporating improvements to the public realm adjacent to the ground floor active street frontages on the eastern side of George Street, therefore continuing to meet the objectives of The Parade Masterplan. This amended design which includes a right turn lane with a length of 32 metres is set out in **Appendix D**.

In this respect, I confirm that the changes proposed in Option 3 are not to the extent proposed in the WAX design **(Option 1)** for the following reasons:

A. George Street Capacity Analysis - The Parade / George Street - prepared by Cirqa Pty Ltd - 5 June 2023.

The review that has been undertaken by Council staff has found that the traffic modelling which has been undertaken by Cirqa, has not utilised current and correct information.

In this respect, the pedestrian scramble phase was modelled with a phase length of 32 seconds compared to the actual length of 28 seconds, which has resulted in an overestimated loss of capacity for vehicle movements.

It should be noted that timing of the pedestrian scramble phase was modified by the Department for Infrastructure & Transport in late September 2022.

Additionally, in respect to the settings utilised for the traffic modelling, it was observed that the Cirqa model has not utilised the SIDRA settings to better represent the adaptive operation of the traffic signals.

In respect to the operation of the traffic signals, Council staff requested updated traffic signal operation summaries for the George Street and The Parade intersection from the Department for Infrastructure & Transport, dated March 2023 and July 2023, which has identified that the phase times for the midday BUS peak differed between the two days, indicating and confirming the adaptive nature of the signal operation system in servicing vehicle demand.

The outcome of the review of the traffic modelling is provided in **Appendix B.**

B. George Street Urban Design Review – prepared by WAX Design.

The review has identified the following variations between the design that has been prepared by WAX Design and the design that has been endorsed by the Council, namely:

- the removal of 38 square metres of footpath and garden bed space on the south eastern side of George Street between The Parade and Webbe Street to facilitate a longer vehicle turning lane;
- the removal of 41 square metres of footpath and garden bed space on the north eastern side of George Street between The Parade and Webbe Street which is directly adjacent to ground floor active street frontages to facilitate a longer vehicle turning lane; and
- one (1) less tree to the eastern side of George Street between Scenario 2 and Scenario 1.

The extent of the variations that are proposed as part of this alternate design, will negatively impact on the quality of the amenity of the public realm and are not consistent with the principles and strategies of the endorsed The Parade Masterplan, which seek to further activate side streets adjacent to The Parade.

A copy of the Council review document is provided for your reference in **Appendix C**.

C. Additional traffic modelling

Council staff have subsequently commissioned additional SIDRA modelling of the intersection with the updated pedestrian phase timing of 28 seconds, settings and post-development traffic volumes which have been identified by Cirqa, to determine if there would be any significant change to the performance of the intersection based on its current configuration for the following options;

- Option 1 (Cirqa / Wax design) as shown in **Appendix A**;
- Option 2 (Council design) as shown in **Appendix E**; and
- Option 3 (amended Council design) as shown in **Appendix D**.

The analysis of this modelling is included for your information in **Appendix B** and outputs from the SIDRA model are included in **Appendices F and G**.

In summary, the key findings of the modelling are:

- **Option 1 (WAX Design):**
  There are negligible improvements to the performance of the intersection (capacity and delay) by adopting Option 1.

  There are negligible improvements to the queuing on the northern approach to the intersection by adopting Option 1, which indicates that queuing issues related to minor adjoining roads and access points such as Webbe Street, are not likely to be resolved by adopting Option 1.

- **Option 2 (Council Endorsed Design):**
  There would be noticeable increases to the delay time and queue length for the George Street northern approach during peak periods if Option 2 is adopted. However, the overall intersection option is likely to perform at a reasonable level of service during peak periods.

- **Option 3 (Council Revised Design):**
  The changes to the performance of the overall operation of the intersection are marginal and will not compromise the operation of the intersection or have any noticeable difference to the queues and delays at the George Street northern approach to The Parade if Option 3 is adopted.

  In addition, as part of the updated modelling which has been commissioned by the Council, further information on the SCATS data for the George Street and The Parade intersection, was requested from the Department for Infrastructure & Transport for Friday, 25 August 2023.

  Analysis of the SCATS data has found a negligible difference between the March - April 2023 and 25 August 2023 daily intersection throughput volume which, in conjunction with the phasing data, indicates that there is negligible difference in the performance of the intersection.

  Whilst it is acknowledged that the new Coles supermarket and other tenancies in the Norwood Mall development, (opened at the end of June 2023 and the development has not been fully completed), the data indicates there has not been a significant increase in traffic volume that has been generated post the opening and occupation of key tenancies and new residences in the development.

  In reviewing the results of the revised traffic modelling, the Council is of the view that Option 3 achieves the right balance between:

  - the operation of the intersection;
  - uplift in amenity and attractiveness of the public space; and
  - activation of George Street, in particular the locations on the eastern side of George Street where there are active ground floor building frontages.

    This option achieves the Council's objective for the side streets adjacent to The Parade and creating better places for people. This is of importance for The Parade, which is a mainstreet with very high levels of pedestrian activity.

To this end, the Council has adopted the intersection and street configuration as identified in Option 3.

Finally, I wish to thank you for your submissions and confirm that, as set out in this letter, adjustments have been made to the final design. I would like to again assure you that the Council recognises the importance of maintaining a functional operating environment for all businesses within Norwood Place and Norwood Mall, as well as in and around George Street and The Parade precinct generally for the benefit of all property owners and tenants, as well as residents, visitors and workers.

The Council also recognises the time and effort that you have taken to prepare the reports that you have submitted. The review process has resulted in what the Council considers to be a balanced outcome which will further contribute to The Parade being recognised as one of metropolitan Adelaide's most popular, vibrant mainstreets.

Council staff will soon be in contact with you to discuss the timing and scheduling of the *George Street Upgrade Project* works, where this stakeholder engagement will focus on the operational needs and requirements for the Norwood Place businesses during the construction phases of the project.

Yours sincerely,

Mario Barone PSM
CHIEF EXECUTIVE OFFICER

Enclosed:

Appendix A

George Street Capacity Analysis - The Parade / George Street – Cirqa Pty Ltd - 5 June 2023

George Street Urban Design Review – WAX Design - May 2023.

Appendix B

Technical Note – Scenario Assessment for the George Street and The Parade intersection – Be Engineering – 10 October 2023

Appendix C

George Street Review – Landskap – 14 September 2023

Appendix D

Option 3 – George Street – Be Engineering – prepared for City of Norwood Payneham & St Peters – 13 October 2023

Option 3 - Urban Design and Landscape Plan - Landskap - 24 October 2023

Appendix E

Option 2 – George Street – Be Engineering – prepared for City of Norwood Payneham & St Peters – 13 October 2023

Appendix F

Attachment #1; SIDRA Model Outputs - TS302 20230925 Cirqa Volumes – Be Engineering – 13 October 2023

Appendix G

Attachment #2; SIDRA Model Outputs TS302 20230925 Current Volumes – Be Engineering – 13 October 2023

Attachment J

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George Street Upgrade Project
Status Report

City of Norwood Payneham & St Peters
175 The Parade, Norwood SA 5067

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1:400 / A3

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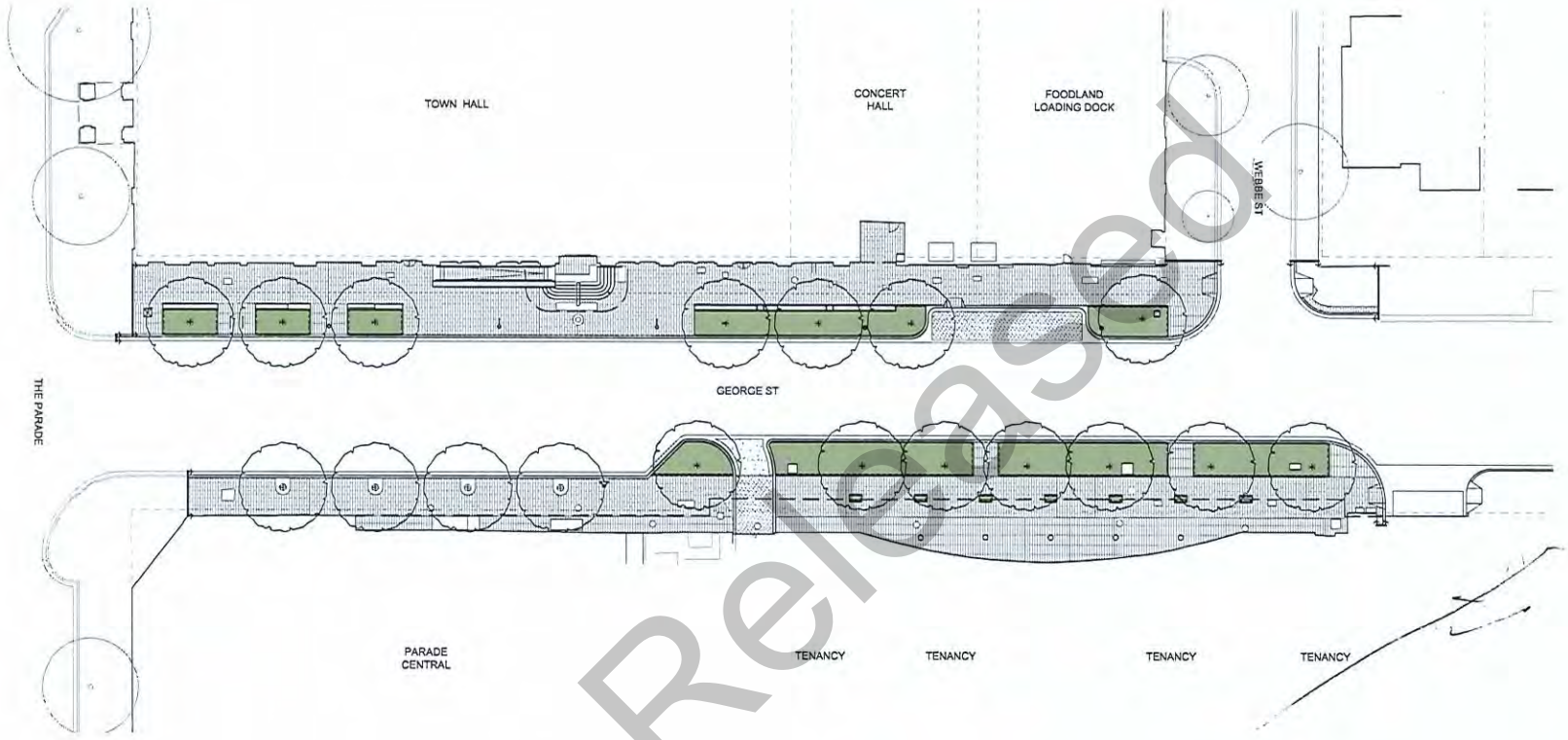

Civil & Stormwater Dryside Engineering	Irrigation CIC
Electrical & Lighting Enerven	Furniture Remington Matters
Traffic BE Engineering	Structural Geared

Project Name
George Street

Client
City of Norwood, Payneham & St Peters

Drawing Title
Simple Plan SK

Project no.	Drawing no.	Revision
21.060.01	SK	C

Rev	Date	Status	DWN	CHK
A	28.07.22	50% DETAIL DESIGN	JR	AG
B	13.09.23	100% STRINGS	JR	AG
C	24.10.23	100% STRINGS	JR	AG

Attachment K

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George Street Upgrade Project
Status Report

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City of Norwood Payneham & St Peters

BOTTEN LEVINSON
Lawyers

Our ref: PMM/221281

24 November 2023

Mr Mario Barone
City of Norwood Payneham & St Peters
PO Box 204
KENT TOWN SA 5067

By email: mbarone@npsp.sa.gov.au

Dear Mario

Status of public realm and road works - George Street, Norwood

This firm acts for Parkade Pty Ltd, the owner of land at George Street and The Parade, Norwood. George Street is critical public infrastructure for our client, providing the primary access from The Parade to its car park and associated shopping centre.

I refer to my previous correspondence with the Council regarding the mooted works on George Street, dating back to September 2022.

Since that time, there have been several exchanges between the parties, principally via Mr Spero Tsapaliaris and our client's planning consultant, Ms Amanda Price-McGregor.

Despite those exchanges, our client remains unclear about the status of the proposed works. In particular, it is not clear whether a design has been finalised and approved or whether further design development is underway, or indeed whether the project is proceeding at all.

Certainly, our client has been given the impression that the final design of the work is still up for review. In that vein, our client has, as you know, engaged traffic engineers and urban design experts to assist with design development to optimise traffic movement and public realm outcomes.

Our client is a key stakeholder in the project and has a keen interest in understanding what might be happening and when it might be happening. It is also important that our client's submissions are considered before the design is finalised. We do not accept that the community consultation on the 2018/19 Parade Masterplan absolves the Council from the need to engage with stakeholders regarding the final design of the works, particularly having regard to the extensive changes to the locality since that time.

Our client is not seeking to expedite the project, but rather to ensure that it is not excluded from the process. We seek to avoid a situation where we are presented with a *fait accompli* with either the design or the construction schedule.

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Accordingly, we seek confirmation, as sought in Mr Tsapaliaris's letter to you of 23 November 2023 and Ms Price-McGregor's email to Mr Stuart Pope on 16 October 2023 about whether:

1. The design of the George Street project has been finalised;
2. A final decision to proceed with the project has been made; and
3. The Council will give our client an opportunity to participate in the design process and/or make submissions to the Council before a decision on the final design is made.

I look forward to your response.

Feel free to contact me to discuss.

Yours faithfully

Metljak

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