Council of Mayors
South East Queensland

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2032 SEQ Olympic and Paralympic Games Feasibility Study

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Executive Summary

Council of Mayors (SEQ) (CoMSEQ) has commissioned this study to provide an assessment of the feasibility of hosting an Olympic and Paralympic Games

1. Purpose of this report

The report considers two essential questions in determining feasibility. The first is 'can' the Games be staged in SEQ? The second, and perhaps more important question is 'should' CoMSEQ propose the hosting of an Olympic Games?

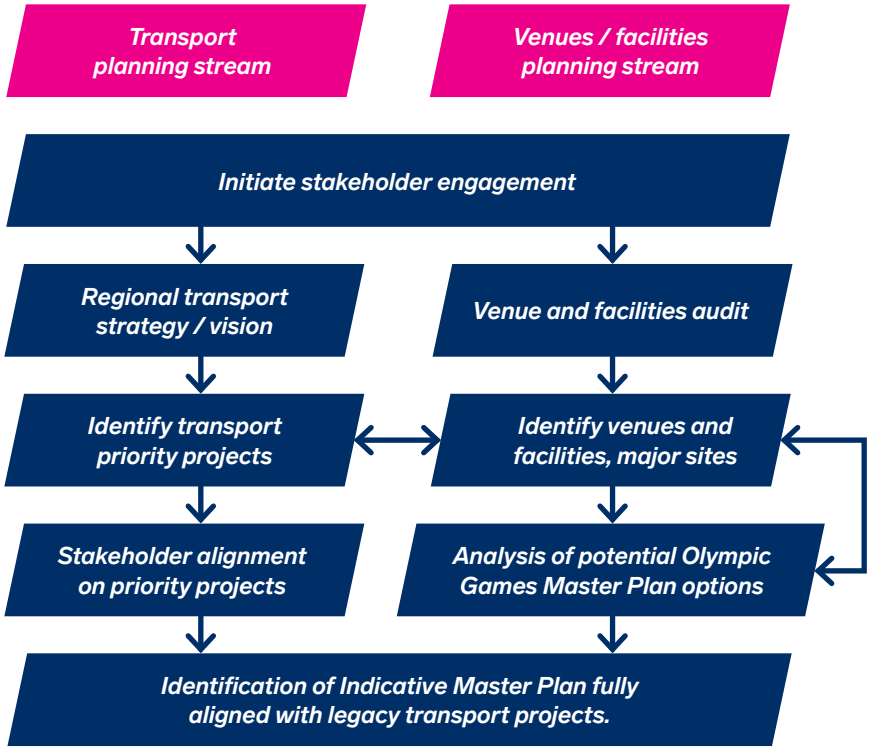
The answer to the first question, (can) is primarily of a technical nature matching Games requirements with current or future capacities and assessing specific financial requirements and opportunity cost.

The second question (should) is more aligned with future development strategy and views on opportunities and risks which will or could arise as a result of bidding for and staging the Games. This is explicitly linked to the long-term development plans and ambitions of the region and beyond.

During the study, it was acknowledged that the Queensland Government would need to undertake an economic analysis using inputs from this report to inform such analysis. Therefore, brief commentary is provided on some economic parameters, but this is not intended to be comprehensive.

Given the importance of regional transport, a parallel study has been completed, the SEQ Regional Strategic Transport Road Map, which informs relevant aspects of this report. The transport study examines the long-term needs of the region and does not focus on Games hosting arrangements. The relationship between the two studies is summarised in Figure 1.

Figure. 1: Olympic Feasibility Study diagram



2. Situation Analysis

CoMSEQ has provided a leadership role in bringing together ten[1] of the 11 Councils across the region, to work together around joint advocacy and policy initiatives, including key planning activities, infrastructure coordination, environmental initiatives and improved engagement with other tiers of government.

[1] 10 members of CoMSEQ since July 2018, following the withdrawal of City of Gold Coast from CoMSEQ

2.1 South East Queensland Context

The South East Queensland Economic Foundations Paper published in January 2018[2] provides context for this Feasibility Study and relevant findings are summarised to assist in identification of where a Games could fit within the longer-term aspirations of the region.

As the third-largest urban region within Australia (34,385 km^2), SEQ is home to one in seven Australians (3.4 million people) and is expected to attract an additional 1.8 million residents by 2041.[3]

SEQ is continuing to experience significant population growth. Continued urban expansion is both a strength and a challenge for SEQ's long-term economic performance. The region will require greater investment in key infrastructure assets to ensure that growth can continue to occur sustainably.

Benchmarked against similar international city regions,[4] SEQ has the lowest regional population density. Comparing the centres in each region, Brisbane also had the lowest density by some distance.[5] This urbanisation pattern leads to higher sprawl, a more dispersed infrastructure network and a less connected region than most of its peers. Other regions have made investments in transport infrastructure, digital connectivity, and medium density, high quality urban living promoting multi-centred regions.

To enable development in key growth fronts, investment in catalytic infrastructure is required, including road, rail, water, sewer, and communications. Transport networks play a regionally significant role by connecting the residential population to economic precincts and key labour markets. As growth fronts are located on the fringe of urban areas, strategic investment in these emerging residential areas is particularly important. The initial public investment attracts ongoing, market-led private industry cluster investment and provides the capacity for future expansions.

SEQ has one of the highest rates of international visitation in Australia however this has not been translated into higher tourism expenditure. Tourism expenditure in SEQ is lagging behind the other eastern capitals and accounts for only 13% of the total tourism expenditure in Australia.

The majority of SEQ has good access to Regional Economic Clusters (REC) for private vehicle owners, with 90% of the region's population having access via private vehicle to a REC within 30 minutes. In contrast, only 20% have access via public transport within 30 minutes. Hence, improving public transport is again a priority allowing greater access to the region for all sectors of the population, not just car owners / users.[6]

Supporting future regional growth trends is the quality and affordability of regional lifestyle. SEQ's capital city Brisbane has seven out of the ten most liveable suburbs in Australia and one-third of the top 50.[7] Brisbane's liveability ranking is increasing according to the Economic Intelligence Unit's (EIU) Global Liveability Ranking shows an improvement from a ranking of 20 in 2014 to 16 in 2017, and in Monocoles' list of top 25 liveable cities, from a ranking of 25 to 23 in the same period. The region's communities rank highly for access to parks, schools, and beaches.

Liveability Ranking showing an improvement from a ranking of 20 in 2014 to 16 in 2017, and to Monocoles' list of top 25 liveable cities, from a ranking of 25 to 23 in the same period.[8] The region's communities rank highly for access to parks, schools, and beaches.

[2] South East Queensland Economic Foundations Paper March 2018 - https://s3.treasury.qld.gov.au/files/SEQ-Economic-Foundations-Paper.pdf

[3] South East Queensland Economic Foundations Paper – page 22

[4] South East Queensland Economic Foundations Paper - Benchmark comparisons to Vancouver Metro, South East Florida (Miami), Cape Town metro, Hamburg region, San Diego region, South Holland (Rotterdam), Barcelona province, Fukuoko prefecture

[5] South East Queensland Economic Foundations Paper – page 42

[6] South East Queensland Economic Foundations Paper – page 40

[7] South East Queensland Economic Foundations Paper – page 53

[8] Olympic Agenda 2020, https://www.olympic.org/olympic-agenda-2020

3. The Olympic and Paralympic Games Opportunity

This report considers both the Olympic and Paralympic Games (the Games) recognising that while both events are delivered through the same organisational arrangements, they are each of a unique nature. As the Paralympic Games is usually accommodated within the Olympic Games facilities and creates lesser loads, only where there are unique Paralympic requirements have these been tested in terms of feasibility (for example dates of Games, accessible rooms and barrier free venues).

3.1 Olympic Games Reform Agenda – Olympic Agenda 2020

The recent reform agenda of the IOC, Olympic Agenda 2020 (Agenda 2020), provides important context for this study. The reform is reflected in two key documents published by the IOC:

- Olympic Agenda 2020, published in December 2014, provides the strategic roadmap for the future of the Olympic Movement and seeks, among its 40 recommendations, 'to invite potential candidate cities to present a project that fits their sporting, economic, social and environmental long-term planning Needs'.[9] Most importantly, this approach places sustainability at the centre of the Games hosting proposition and enables a more flexible solution that contemplates maximum use of existing venues and a relaxation of some of the associated (and previously inflexible) characteristics of venues, most notably capacities.
- To enable Agenda 2020, in February 2018, the IOC adopted The New Norm, 'an ambitious set of 118 reforms that reimagines how the Olympic Games are delivered'.[10] This initiative provides host cities with increased flexibility to design their Games solution to achieve maximum alignment with the long-term plans of the city and region.

This report takes into account the specific and implied directions of the IOC reforms.

[9] The New Norm, https://www.olympic.org/news/the-new-norm-it-s-a-games-changer

[10] The New Norm, https://www.olympic.org/news/the-new-norm-it-s-a-games-changer

3.2 Potential Benefits

The hosting of the Games is likely to provide the opportunity for economic stimulus across a range of sectors.

Opportunities in areas such as inward investment, capacity building and training, employment and enhanced private-public cooperation should be complimented by sector-specific opportunities in tourism, sport, health and well-being, international business, development, education, training and housing all of which should support the economic priorities of the SEQ region.

Most critically, an integrated and enhanced regional transport network will be foundational to hosting the Games. This is fully aligned to the economic development strategy for SEQ. For this reason, a parallel stream of transport analysis has been undertaken concurrent with this study, that examines, independent of any potential Games bid, the transport and connectivity issues currently facing the SEQ region. This work has yielded a legacy vision for a '½ hour Smart City' and a 45 minute region and identifies the transport project developments required to support the vision. The resultant *SEQ Regional Strategic Transport Road Map* serves long-term requirements and will also enable Games delivery; however, Games requirements do not determine the road map but may influence prioritisation.

Housing and tourism assets (hotels, apartments, meeting and convention spaces) are also critical to support the delivery of the Games and with early planning regional requirements can be reinforced by the Games.

Other benefits highlighted throughout the report, for example the development of community sport facilities, have been considered where long-term community needs and development plans are completely aligned with Games requirements.

The contention in this report is that a thoughtful Games plan could catalyse and / or accelerate the delivery of the long-term regional priority projects resulting in a net economic gain for the region and Queensland as a whole, given SEQ's important gateway role.

3.3 The Games Plan

Olympic Agenda 2020 / New Norm opens the opportunity for more innovative and sustainable Games hosting solutions. In particular, it makes possible the notion of a more distributed model that could involve three primary 'hubs' of Games venues in Brisbane, Gold Coast and Sunshine Coast. This would enable maximum use of existing venues, including those developed or renovated for the Gold Coast 2018 Commonwealth Games.

The report identifies potential solutions for the major infrastructure elements which would represent the foundation of an Olympic plan including:

- Public transport infrastructure
- Road infrastructure
- Competition venues
- Olympic Village and other athlete accommodation
- International Broadcast Centre (IBC) and Main Press Centre (MPC)

A comprehensive competition venues audit was undertaken to support the development of a Games solution while stakeholder consultation guided the identification of potential non-competition sites and their legacy application.

3.4 Approach to Developing an Indicative Master Plan for SEQ

Given that no Games Plan exists, an Indicative Master Plan has provided a framework against which feasibility has been tested. Six key principles have shaped the potential location of Games venues in the Indicative Games Master.

Principle 1 – Existing Facilities: Optimise the use of high quality existing venue infrastructure across the region and support the upgrading of facilities, creating legacy benefits.

Principle 2 – Transport Alignment: Locate venues and facilities to align with existing and planned transport infrastructure within each Council area and to support major initiatives for regional connectivity.

Principle 3 - Legacy: For venues and facilities that do not currently exist, ensure full alignment with planned projects and community needs to ensure strong legacy outcomes. Where no legacy can be defined, commit to developing temporary facilities for the Games.

Principle 4 – Urban Development: Ensure alignment with key urban projects across the region to support / accelerate development.

Principle 5 - Housing: Support the need for housing across the region including market housing, 'built to rent' housing, affordable housing and student housing.

Principle 6 - Showcasing: Showcase the diverse and spectacular features of the SEQ region.

The collective outcome of this analysis indicates that SEQ has the potential to develop a compelling bid proposition that will generate significant benefits, reinforcing regional infrastructure and providing a strong SEQ Games master plan. The following table provides a summary of the categorisation (in IOC terms) of the 41 venues included in the Indicative Master Plan:

The collective outcome of this analysis indicates that SEQ has the potential to develop a compelling bid proposition that will generate significant benefits reinforcing regional infrastructure and providing a strong SEQ Games master plan. The following table provides a summary of the categorisation (in IOC terms) of the 41 venues included in the Indicative Master Plan:

A key feature of the proposal is that each of the 12 permanent venues which are not already existing are either planned irrespective of an Olympic Games (four venues) or represent an identified regional legacy opportunity (eight venues).

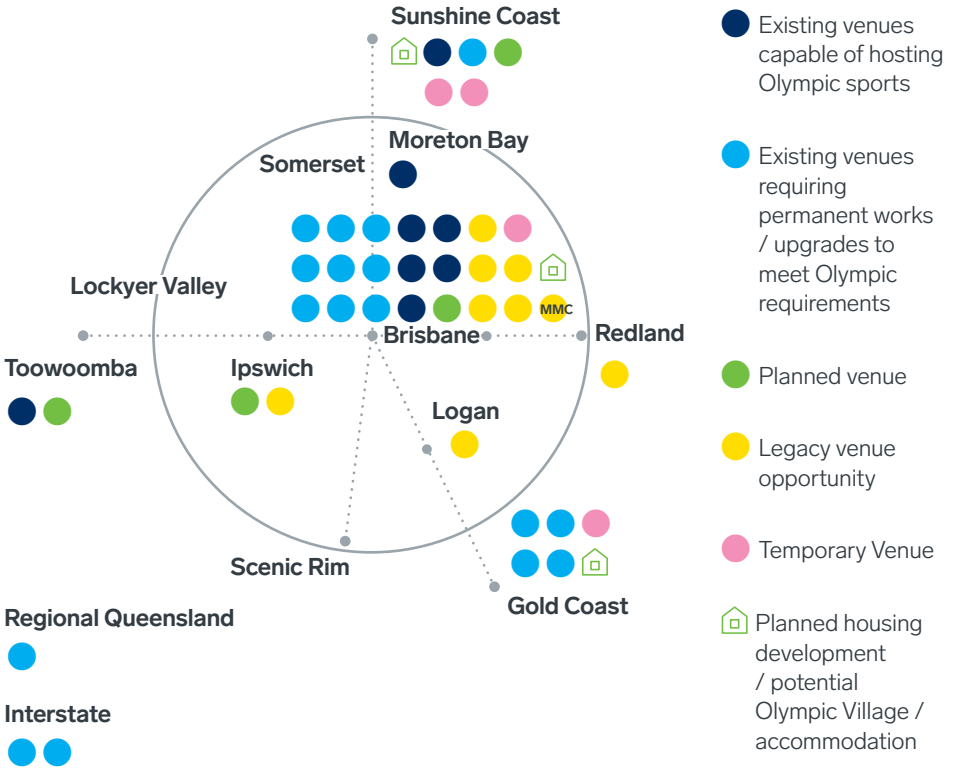
Table 9: Indicative Master Plan venue categorisation

Venue Category	2019 Venue status (41 venues required)		Recommended 2021 status (start of IOC Bid engagement)	
	Number of venues	% of overall venue footprint	Number of venues	% of overall venue footprint
Existing (including venues requiring upgrades to meet IOC / IF requirements)	25	60%	29	70%
Planned (to be built irrespective of a Games with initial planning underway)	4	10%	8	20%
Legacy opportunity (planning not currently underway but legacy need identified)	8	20%	-	-
Additional (Games dependent)	-	-	-	-
Temporary (venues which would typically be delivered primarily as temporary)	4	10%	4	10%

3.5 The Indicative Master Plan for SEQ

The Indicative Master Plan envisages competition venues and facilities located in eight separate Council areas, while maintaining acceptable travel times and levels of service for athletes and other Games Family constituents. Brisbane is the predominant venues hub, accounting for some 53% of the venues. The indicative distribution of those venues across eight Council areas is depicted in Figure 7.

Figure 2: Indicative Master Plan



3.6 Legacy Alignment

Historically, the Olympic and Paralympic Games have proven to be a successful catalyst for the implementation of major transport and transformational urban projects. This is evident in many host cities where the Games have enabled the development of major sites and the regeneration of urban areas (notably Barcelona 1992, Sydney 2000 and London 2012). In other cities the Games have accelerated transport infrastructure projects that have changed the way people live, work and play (notably Athens 2004 and Rio 2016).

In this context, the Games can have significant positive impacts on a city or region. These impacts are optimised when any incremental infrastructure projects are underpinned by compelling legacy plans. Hence the key to a successful Games master plan is its complete alignment with legacy needs.

The attributes of the SEQ region provide the opportunity for the Games to act as a catalyst to deliver region-building infrastructure in an accelerated timeframe. A legacy-led approach is both consistent with delivering long-term value to host communities and establishing a competitive Games bid which will appeal to the IOC and its key stakeholders.

In all instances consideration of Olympic Games venues extended to Paralympic Games requirements.

Historically, the Olympic and Paralympic Games have proven to be a successful catalyst for the implementation of major transport and transformational urban projects

3.7 Other enabling infrastructure

Telecommunications and energy requirements for the Games are essential, require careful planning and are significant. General market demand will drive infrastructure and services solutions while the Games requirements may create the opportunity to enhance or accelerate infrastructure investments. Regardless of the base infrastructure, it is likely that to meet Games requirements, augmentation of both telecommunication and power services will be required. An evaluation of the possible dimension has not yet been undertaken as further detailed venue plans will be required as will engagement with the relevant entities in the telecommunication and energy sector.

Within the IOC's New Norms initiatives, rationalisation of energy redundancy requirements is a key focus with the objective of containing costs and adopting a reasonable approach to risk and resilience.

4. Legacy and Sustainability

The Games have been used by different hosts to substantially upgrade regulation, legislation and practices and change behaviours in host communities to align with sustainability objectives. In a Queensland Government-led economic impact study these factors should be considered.

This report has focused on long-term strategic urban and infrastructure initiatives which the Games can accelerate and which, in turn, could reinforce a Games bid and enable the ultimate hosting of the Games. The legacy and sustainability focus is therefore centred on these two elements, although the Games presents a significantly broader range of opportunities as has been documented in other Games reports.[11]

The proposed master plan framework for the Games has been carefully aligned with the long-term planning objectives of the SEQ region with respect to:

- Transport and mobility infrastructure and systems
- Housing
- Sporting venues and facilities
- Urban regeneration opportunities

4.1 Urban Development

A Games has the potential to be a catalyst for 'city-building' projects and through this study and engagement with Government stake-holders, it is clear that the Games can support significant urban development initiatives in multiple locations within SEQ. This will meet the objectives of enhancing the environment and supporting community building, employ-ment, public amenity, housing and other long-term economic benefits.

Other key opportunities include proposed market housing developments which could provide the Olympic Village while meeting Brisbane's increasing accommodation requirements.

[11] For example; Inspired by 2012: the legacy from the London 2012 Olympic and Paralympic Games: a joint UK Government and Mayor of London report: third annual report, Summer 2015); Local Plan 2015 to 2031 (London Legacy Development Corporation); London 2012 legacy: creating a more sustainable future for London and beyond (Jennifer Daothong and David Stubbs); London 2012 Post Games Sustainability Report (LOCOG)

4.2 Transport

Some of the more recent Olympic and Paralympic Games have generated significant transport legacies, in particular, the implementation of public transport systems which have transformed city and regional connectivity. The initiatives outlined in the CoMSEQ SEQ Regional Strategic Transport Road Map defines a strategy which, if catalysed / accelerated by the Games, would leave a profound and trans-generational legacy. The impacts are discussed in the associated *SEQ Regional Strategic Transport Road Map.*

4.3 Sport Facilities

A key challenge with any Games project is the ability to determine the most compelling legacy strategy for the sport competition and training venues. If considered properly, this can leave a powerful legacy for all generations and encourage healthy and active lifestyles through access to sport facilities.

In addition to optimising the use of existing facilities, the SEQ master plan framework intentionally looks to deliver multiple legacies across the region with respect to sport facilities. The objective is to ensure that any permanent venue development is founded in meeting long-term community needs with no permanent venue developed specifically for the Games. The analysis indicates that SEQ should be able to meet this objective.

Based on the venue audit review and discussions with stakeholders, it is apparent that SEQ faces challenges with respect to sporting infrastructure, including:

- SEQ's status as a key destination for major events and professional sporting clubs, requiring further investments in the renewal of major sporting infrastructure
- Rapid growth and changing demographics requiring investments in community sport facilities (indoor and outdoor)
- Ageing infrastructure from previous major events requiring re-purposing or upgrading based on current trends and demands of the sport community, including Queensland high performance athletes

An Olympic and Paralympic Games can provide a catalyst to address these issues and deliver positive outcomes. Placing this in context, the recent Gold Coast 2018 Commonwealth Games have supported the development of an enhanced stock of international standard venues and community facilities which can be repurposed for major events.

The overall situation for SEQ in relation to Games venues is positive with a significant number of existing venues in place.

A venue audit identified a deficit of indoor facilities / gymnasiums in SEQ, particularly with respect to community facilities. This represents an opportunity to enhance the availability of recreational space for youth and grass roots level sport, as well as developing venues capable of hosting more significant sporting events. Brisbane is also looking at the potential facility gaps and developing plans for new major venues including to serve as engines to activate priority precincts and support broader urban development objectives.

The proposed master plan framework recognises these initiatives and proposes major stadia developments as advised by key stakeholders. These focus on a new downtown arena project and a new 'boutique' stadium which could be temporarily expanded for an Olympic and Paralympic Games. Based on feedback received by stakeholders during consultations, both of these projects are consistent with legacy requirements to support professional sport and entertainment. A broader strategy of civic integration and alignment with community needs is important in ensuring these facilities provide a valid community legacy.

Several councils identified the need for smaller regional stadiums to provide for local / state sporting competitions, and also provide a venue for concerts and entertainment events in regional centres. Specific projects were identified at Sunshine Coast, Ipswich and Toowoomba.

These venues would provide excellent venues for Football (preliminaries) with the bump-in of temporary seats able to deliver capacities of up to 20,000 meeting the expectations of FIFA. The use of Football to incorporate regional and national centres is a common and successful model from previous Olympic Games.

Games overlay has become increasingly sophisticated in being able to deliver cost-effective solutions to expand modest legacy facilities into major event venues, or even to provide full temporary solutions if necessary. When properly considered the strategic use of Games overlay can effectively close the gap between the Games requirements and legacy needs, yielding positive and sustainable venue stock.

4.4 Environment

Environment is a key 'pillar' of the Olympic Movement and it is critical that the Games project does not adversely impact the environment and where possible fully aligns with policies and projects designed to protect and enhance the environment. Many previous Olympic Games have had a profound and positive impact on the natural environment and there are key areas where the Games project can deliver measurable environmental outcomes, including:

- Remediation of brownfields sites
- Increase in public green space
- Establishing new benchmarks in environmental design
- Increased public transport utilisation

The Indicative Master Plan attempts to minimise the environmental footprint focusing on projects which can deliver positive outcomes and are aligned with key city projects which are already planned or envisaged irrespective of the Games. Examples of key strategic projects include:

- Selected water corridor enhancement
- Remediation of inner-city brownfield sites
- Enhancing Green Building standards showcasing a response to climate and environment with an entirely new generation of public projects generating expertise and thought leaders

4.5 Sport Tourism

The Olympic and Paralympic Games would further enhance Queensland's reputation as a host for high-level sport competition and draw future events with significant benefits to the local economy taking advantage of the current ability to link tourism and sporting events across the region.

Tourism Events Queensland has identified the following priorities in relation to the hosting of events:

- Maintain an events calendar that is a high value sustainable asset for Queensland that drives superior returns against investment objectives
- Attract and secure major events to grow the Queensland economy and support jobs
- Support Queensland destinations through the Queensland Destination Events Program
- Support the Queensland business events sector through the Business Events Program
- Event value optimisation to drive incremental event and tourism outcomes
- Ensure the value of event legacy benefits from the Gold Coast 2018 Commonwealth Games are maximised

The hosting of an Olympic and Paralympic Games would support the delivery of these outcomes, particularly when assessing the precedents of other cities and the metrics of the Games which include exposure to world leaders in the event sector and of course a significant number of the world's media in attendance.

5. Olympic Games Transport Concept

A major objective for SEQ, should it be decided to bid, will be to demonstrate that transport for the Games will provide safe, reliable, efficient and comfortable mobility services in full compliance with the service levels prescribed by IOC / IPC, while observing the highest sustainability standards. Transport is a major feasibility consideration for SEQ

5.1 Games Transport Governance

The governance scheme for Games Transport will capitalise on core competencies and proven practices of existing state authorities and councils. Specialised transport tasks may be assigned to a special state delivery authority led by Transport and Main Roads (TMR) and to the Transport Division of the Organising Committee. For the successful delivery of Games transport operations, it is necessary to plan for effective Games-time Command, Control and Communications (C3) that may align with the pre-Games transport governance structure.

5.2 Airports

For Games arrivals and departures, the existing characteristics and future plans of the gateway Brisbane Airport and of the other supporting airports (Gold Coast, Sunshine Coast and Toowoomba) will provide for the necessary capacity, international and domestic connectivity as well as public transport connectivity to the region.

5.3 Transport Infrastructure

In terms of transport infrastructure and systems, several projects included in the advanced scenario of the *SEQ Regional Strategic Transport Road Map* for the period 2018 – 2031 will be critical in delivering the Games. These include new road projects in the Brisbane area, upgrades of significant regional road corridors, the new Brisbane Metro, Cross River Rail, the light rail in Sunshine Coast, the extension of the light rail in Gold Coast, Bus Rapid Transit solution through to Toowoomba, and the Faster Rail system to Ipswich, Sunshine Coast and Gold Coast.

5.4 Games Family Transport

SEQ is fully capable of delivering a very strong transport solution for the athletes, media, technical officials and the IOC / IPC VIPs. Specifically, the Indicative Master Plan delivers athlete travel times on par with previous Games with an average athlete travel time to competition venues of 19 minutes. For successful Games Family transport, key resources need to be procured from across Queensland or from neighbouring states and transport facilities need to be secured early. Furthermore, transport planning and delivery should capitalise on the experience and strengths of local stakeholders, as well as on proven practices implemented in significant events across SEQ.

Based on the Indicative Master Plan, the opportunity exists to optimise the use of public transport for Games Family. For example, should the key projects of the SEQ Regional Strategic Transport Road Map be implemented, the backbone for the media transport system could convert to public transport (faster rail in particular) offering an effective, innovative and sustainable solution.

5.5 Spectator and Workforce Transport

It is recommended that the Games be zero car Games. Thus, public transport, especially suburban rail, Brisbane Metro, Brisbane busways, Gold Coast and Sunshine Coast light rail, as well as the future faster rail system, will be the major modes available to spectators and workforce to reach the Olympic venues. In the day of their event, ticketed spectators should be provided with free access to all public transport modes in Brisbane, Gold Coast, Sunshine Coast, as well as selected public transport modes accessing venues in Toowoomba, Ipswich, Redlands, Logan and Moreton Bay. Access by active transport will also be encouraged and facilitated in the urban areas.

The task of serving the workforce and transport demand exclusively by public transport is a very challenging one for SEQ. This is due to the proportionally very high surge in daily Games demand with respect to the daily background load of the SEQ public transport system.

To address this challenge, several levers need to be considered, including:

- maximising the capacity of all public transport systems within related constraints (such as signalling, power supply, rolling stock and vehicle fleets available)
- tuning the Games schedule to avoid daily peak demand
- developing special Games transport systems (Games shuttles, park and ride shuttles) as needed
- developing significant Travel Demand Management (TDM) initiatives to manage background demand, especially along the network routes that serve Games venues

Furthermore, the connectivity between the major Olympic-related SEQ cities should be strengthened. To do so, strategic park-and-ride and park-and-rail should be made available at carefully selected locations to supplement the faster rail services.

6. Games Operations

6.1 Accommodation

Accommodation capacity is a key feasibility factor for SEQ.

The overall Games accommodation requirement is projected at approximately 81,000 rooms. In addition, business as usual accommodation requirements will need to be considered and for this purpose a deduction from the available room stock (10%[12] of hotels and apartments) has been made to meet some of this base occupancy demand. Regardless, displacement of base occupancy should be anticipated given the trend of occupancy rates (70-75%) at the time of the Games.

By 2032 hotel and serviced apartment accommodation is likely to deliver approximately 55,890 rooms for Games clients (allowing for 10% deduction for business as usual requirements).

Other accommodation which includes the development of Media Village(s), currently projected at 3,000 - 4,000 rooms (and excludes tourist / caravan parks, camping grounds, dormitories and homestay which have not been dimensioned at this time), is likely to deliver an additional approximately 25,300 room equivalents.

Based on this analysis only a regional accommodation solution is viable in terms of meeting overall capacity requirements. Some displacement of business as usual clients is likely.

The transport implications for this regional solution require careful consideration and are inextricably linked to future regional transport improvements.

The overall Games accommodation requirement is projected at approximately 81,000 rooms

[12] The 10% allowance is a planning assumption to this time and requires more detailed industry engagement if a Bid is to proceed

6.2 Medical and Emergency Services / Emergency Response

Queensland has an existing sophisticated emergency response plan that is regularly tested responding to natural disasters. Engagement with national agencies and defence forces is well coordinated. Queensland's emergency response has demonstrated the preparedness of the region which should meet Games time requirements.

There are 7,200 public hospitals beds in SEQ including an extensive array of specialist services with five of the hospitals (three in Brisbane and one in each of Gold Coast and Sunshine Coast) being teaching hospitals. Games requirements can be met through existing facilities, capacities and specialities.

6.3 Safety and Security

The security requirements for a SEQ Games will be very significant in both the planning and delivery phases. Based on recent major event experiences, Queensland has demonstrated that the requirements of a Games in SEQ should be met in a manner that enables an appropriately safe and secure Games.

When bidding for the Games, Candidate Cities must demonstrate they can develop an effective operation to manage security and safety risks. They are required to use the International Standard on Risk Management (ISO 31000) and provide risk ratings for hazards and articulate the mitigation strategies they will use to manage risks appropriately. Hazards requiring assessments include fire, civil disobedience, crime, terrorism, traffic accidents, natural catastrophes, cyber interference and illegal intrusion into Olympic facilities.

Queensland Police Service (QPS) is constantly reviewing its future infrastructure and service delivery requirements and it continues to actively progress a five-year programme of work in this regard.

Provided there is long-term planning and sourcing of an appropriate mix of private security personnel, police, military and vetted volunteers, the security workforce numbers required (35,000) for 2032 should be attainable but presents a challenge.

Emerging complex challenges for the security of international major sports events include maintaining the integrity of airspace protection, particularly with the trend for incursions by unauthorised unmanned aerial vehicles and the proliferation of cyber-attacks.

6.4 Commercial protection of Olympic Partners

The existing national and state legislative framework will accommodate the requirements of the Games. For past major events governments have been effective in addressing any additional requirements by amending or passing new legislation when required.

The regulatory requirements for previous events have also been effectively managed by local councils and other regulatory agencies.

Based on past precedent there is no reason to consider that either regulation or legislation presents as a material factor in assessing feasibility.

6.5 Customs and Immigration procedures

Australia has some of the most stringent customs and immigration procedures in the world, however, through hosting of major events, Australia has demonstrated the ability to welcome athletes, team officials, media and other international guests, including their equipment, into Australia while retaining the customs and immigration protections standards maintained by successive Australian governments.

Adjustments may be required to recent event delivery arrangements due to the scale of the Olympic Games, however, there is no reason to consider that this is a material factor in assessing feasibility.

6.6 National, State and SEQ Experience of Hosting Major Sports Events

Australia has an extensive history of hosting major events and a proven track record in relation to the hosting of major multi-sport events. These event hosting experiences including in Queensland / SEQ are considered to be of a high standard and demonstrate the requisite capabilities of hosting an Olympic Games. Therefore, event hosting experience is likely to be a strength in any potential Games bid.

6.7 Other Operational Issues

A general feasibility test of other Games functional areas and related deliverables indicates the following status and possible issues.

Australia has an extensive history of hosting major events and a proven track record in relation to the hosting of major multi-sport events

6.7.1 No significant issues which impact feasibility

- Accreditation
- Brand, Identity and Look of the Games
- Cultural Olympiad
- Financial Management
- Language Services
- National Olympic Committee (NOC) Services
- Olympic Family and Dignitary Services
- Ticketing
- Wayfinding Signage

6.7.2 Opportunities and matters for further attention

- **Ceremonies:** A regional Games presents opportunities for Ceremonies innovation while containing budget
- **City Activities and Live Sites:** A regional Games presents opportunities for enhanced activation and community engagement. Further state-wide and national opportunities exist
- **City Operations:** Significant planning will be required to enable Brisbane city and other major commercial centres to maintain non-Games activities during the Games with transport arrangements contingent on future regional public transport network enhancements
- **Communications (and Public Engagement):** A focus on managing stakeholder and community engagement and communications will be a major feasibility factor
- **Digital Media:** Broad ranging opportunities exist to drive legacy opportunities in build-up and delivery of the Games
- **Event Services:** Recruiting and training the Games event services volunteer workforce (12,000 to 15,000) is a major undertaking and provides significant legacy opportunity for the local community
- **Food and Beverage:** The scale of operation will be unprecedented in SEQ and the contractor workforce needed to deliver the services requires an extended industry development and capacity building initiative with consequent industry-wide legacy opportunities
- **Press Operations:** The scale of media operations, both accredited and non-accredited is significant. For SEQ the location and capacity of the Main Press Centre is a key issue which if well connected to an enhanced regional public transport network, could provide the basis for the first 'public transport media Games'
- **Olympic Torch Relay:** The Torch delivers an opportunity to engage Australia in the Games and while there are no specific issues identified at this time, it is recommended that the Torch Relay be approached as an opportunity for all Australians
- **Paralympic Games:** The Paralympic Games have been identified as an opportunity for Queensland and SEQ following the success of the parasport events in the Gold Coast 2018 Commonwealth Games
- **People Management:** Building and retaining the Games workforce will present challenges, however, it also creates opportunities for employment programmes, training, internships and other initiatives that deliver long-term legacies to the region
- **Sport:** Australia has a reputation of delivering events of a high technical standard however some Olympic / Paralympic Games programme sports are not popular in Australia and not well developed and will require specific initiatives to ensure relevance and an appropriate Australian representation
- **Scheduling the Games:** For the purpose of the feasibility analysis, it is assumed the dates of the Games in SEQ will be within the window defined by the IOC however adjustment of school terms will be required to achieve this and take advantage of the most favourable scheduling for weather purposes (Friday 13 to Sunday 29 August [Olympic] and Tuesday 5 to Sunday 17 October [Paralympic])

7. Finance, Governance and Engagement

7.1 Finance

7.1.1 Operating costs

The net cost of an SEQ 2032 Olympic Games, taking into account IOC and private sector funding, has been projected at AUD400 million[13] plus an additional AUD500 million[14] subsidy for the Paralympic Games. While noting that the IOC have established a clear policy objective and programme (New Norm) to ensure that the Games are, at worst, break even on an operating cost basis, at this time it is considered prudent to adopt a conservative approach. It is acknowledged that there are a range of emerging opportunities to reduce projected expenditure and that a break-even operating cost (excluding government services) is likely as planning matures.

It has recently been demonstrated in Queensland that the state, in conjunction with the two other levels of government, can fund a major event (Gold Coast 2018 Commonwealth Games) with a higher net operational cost than is currently projected for the 2032 SEQ Games and a likely lower net benefit in terms of economic, social and environmental uplift.

Therefore, it can be argued that the threshold question in relation to financial feasibility of a Games staged in SEQ is not answered by merely examining the net operational costs. In fact, if this is offset against likely gains as a result of hosting, then the overwhelming positive net result would mitigate in favour of bidding for and hosting the Games.

In a direct like-for-like comparison, the Gold Coast 2018 Commonwealth Games net operating cost was AUD1.2 billion compared with the current conservative 2032 Olympic Games forecast of AUD0.4 billion and Paralympic Games AUD0.5 billion (in total AUD0.9 billion). The positive impact of an Olympic and Paralympic Games could be in the region of more than AUD22 billion (in 2000 dollars)[15] as delivered by Sydney 2000 whereas the Gold Coast 2018 Commonwealth Games is reported to have delivered an increase of AUD2.5 billion (Gross State Product 2018 dollars).[16]

[13] 2018 Australian dollars and excluding government agency costs

[14] 2018 Australian dollars and excluding government agency costs

[15] Business and Economic Benefits of the Sydney 2000 Olympics: A collation of evidence – 2002 (PwC for NSW Dept of State and Regional Development)

[16] https://www.couriermail.com.au/business/commonwealth-games-saw-25b-boost-in-qld-economy/news-story/19a455a483d1d14031dcbf780f027a70

7.1.2 Capital investments

Some recent Olympic and Paralympic Games have experienced significant capital expenditure. In all cases these Games were of a different nature to that proposed for SEQ and / or preceded the IOC policy evolution arising out of both the Olympic Agenda 2020 and the IOC New Norm. Both these IOC initiatives have reinforced the IOC's position that there should be no Games-specific capital investment or conversely, that any capital investment must be aligned with and reinforce long-term development plans.

Significantly, early in this study, CoMSEQ embraced the IOC's Olympic Agenda 2020 policies and founded much of the initial consideration of a prospective SEQ Olympic and Paralympic Games on the basis that the use of permanent venues and infrastructure would only be proposed for a Games if they were to align with the long-term plans for the region.

Throughout this report it has been confirmed that there should be no Games-induced capital investment and that in all instances, the Games venue and infrastructure requirements could be met within current and evolving development plans. Based on this analysis, a Games-specific capital budget has not been identified.

This conclusion has been supported by:

- Extensive stakeholder consultation (refer separate stakeholder consultation register held by CoMSEQ)
- A review of various development plans / reviews for SEQ[17]
- Evaluation of growth projections for SEQ[18] and related transport impacts[19]

The analysis relies on the future delivery of a range of legacy capital investments.

This legacy-led approach supports the overall contention that there should be no Games-specific capital investment and furthermore, there is a strong case to leverage the Games to accelerate and catalyse investment in long-term development to meet regional growth requirements.

This study also considered the impact of non-delivery of some venues and infrastructure which does not already exist. The testing of these scenarios against the Indicative Master Plan concluded that the current Indicative Master Plan optimises SEQ legacy outcomes with respect to infrastructure (venues, facilities and transport). The alternatives could reduce the venue legacy capital programme and still provide a compelling Games proposition.

None of these options are feasible without essential transport infrastructure investment (legacy driven) or legacy accommodation investment (for initial short term use as Olympic Village and Media Village(s)). Both transport and accommodation investments are linked to specific legacy developments and are not Games investments although timing effects may be attributable to the Games.

[17] The plans reviewed include: State Infrastructure Plan, Shaping SEQ (SEQ Regional Plan 2017), Connecting SEQ 2031, SEQ City Deal gateway 1 report

[18] Department of Transport and Main Roads data (2018)

[19] See - *SEQ Regional Strategic Transport Road Map*

There is a strong case to leverage the Games to accelerate and catalyse investment in long-term development to meet regional growth requirements.

Where the Games have a direct impact on capital investment (for example timing effects), the recommended approach is to serve Games requirements through full alignment with legacy requirements.

The following summarises the context within which competition venue capital funding arrangements for a SEQ Games can be considered.

- While upgrading of existing competition venues will be required, much of this will need to be undertaken to maintain the venues regardless of the Games
- Taking into account the funding for planned venue development committed within current or future development plans
- The analysis shows that the Games can be conducted in SEQ without the need for Games-specific competition venue capital expenditure

Two key non-competition venues will be required and will need to be developed. This includes the main Olympic Village and the Main Media Centre (International Broadcast Centre and Main Press Centre).

- The analysis shows that existing planned accommodation development in Brisbane may accommodate the Olympic Village as long as land is reserved, the development schedule synchronised and an appropriate staged release of apartments is planned for
- The Main Media Centre requirements are reducing based on the IOC's New Norm cost reduction drive. In this analysis, requirements have been benchmarked on an historical basis
- The opportunity to align an urban development in Brisbane with the staging of the Games will provide a Main Media Centre facility which can be repurposed following the Games, meeting legacy needs

Required transport infrastructure, particularly regional public transport, has been examined in the separate but related study *(SEQ Regional Strategic Transport Road Map).* While there are no proposed Games-induced transport infrastructure investments given the long-term nature of such assets, regional connectivity has been identified as a major feasibility factor for the Games given the distributed regional accommodation solution required to meet Games-time requirements and the positive legacy impacts of a regional Games master plan. The acceleration of transport infrastructure investment is a strategic objective for SEQ and the Games can play an appropriate role in focusing investment to achieve this.

7.1.3 Benefits

The Queensland Government has advised that they will need to undertake an economic analysis of the costs and benefits of hosting the Olympic Games, following the completion of this report. As such, this report does not include a cost benefit analysis. However, benefits accruing to previous Games hosts have been benchmarked. This exercise demonstrates a wide and significant range of tangible and intangible benefits arising from the hosting of the Games in other cities / countries.

7.2 Governance

Australia has hosted a range of major events over the past two decades with the Sydney 2000 Olympic and Paralympic Games being a key milestone. As a result, a generally accepted set of governance arrangements has emerged. While some of these require event-specific refinement, it is recommended that the proven practices of the past guide future arrangements as a fundamental starting point, supplemented by learnings from the most recent similar events.

The number of stakeholders involved in an event as impactful as the Games is one of the complexities that necessitates the careful planning of structural arrangements and associated governance processes. In several past host cities, insufficient early consideration has been given to governance planning. The Games project can then be negatively impacted by inefficiencies, lost opportunities, conflicts or even dysfunction, with resultant project delays and avoidable escalation of costs.

Key learnings from recent events in Australia and other markets have been identified and should be considered in crafting future governance arrangements.

8. Next Steps

Agreement regarding the infrastructure development road map and funding arrangements appears to be the single most important matter to enable a competitive proposition for a Games in SEQ / Queensland. Regional population growth and broader development requirements are not Games dependent however to host the Games these investments will enable effective operations and provide essential venues. The funding requirements dictate that agreement across the three levels of government is a critical step and impacts feasibility.

In addition, key urban development precincts require final definition and a commitment across city and state administrations based on long-term community legacy. These legacy projects will play a critical role in enhancing the appeal of the SEQ Games proposition and its deliverability.

The following summarises a recommended approach to sequencing activities and decisions to enable the leaders of the various stakeholders to take informed and collaborative decisions about a prospective bid should it be decided to continue to explore the Games opportunity. Underpinning the approach are the timelines established by the IOC for the bidding process.

- A Dialogue Phase which can begin at any time and is focused on the period starting approximately two to three years prior to the commencement of the formal Candidate Phase
- The Candidate Phase which is a structured and formal process governed by a set Candidature Procedures which specify bidding conditions, the timetable, presentations and information submission requirements and the various stages of the decision process
- The ultimate award of the Games is a decision taken by the IOC in Session through an exhaustive ballot procedure involving all IOC Members

Based on this process, cities are expected to be able to commence their engagement with the IOC through the Dialogue Phase from 2020 / 2021, with the final award of the 2032 Games in 2025. Some cities have already notified the IOC of their intention to bid.

SEQ have strategically important opportunities in advance of this formal process to optimise the position of any future bid, should there be one, and to engage with the IOC leadership and key Olympic stakeholders, including:

- Sport Accord – May 2019
- Tokyo 2020 Olympic Games – July / August 2020

CoMSEQ have provided this report to the Queensland Government. It has been proposed that the Queensland Government will commission an economic assessment based on the plan outlined in this report and any agreed options to be explored.

It is proposed that a Leadership Group, consisting of the Premier of Queensland (or nominated Minister), Lord Mayor on behalf of CoMSEQ and IOC Member / President of the AOC, be established. This Leadership Group will be responsible for overseeing the work to set the vision and Games concept which will then guide the economic assessment and subsequent work. The legacy approach recommended in this report provides the foundation for the Games concept and an initial framework for the vision.

It is assumed that CoMSEQ and the Queensland Government will continue ongoing discussions with the Australian Government in regard to long-term urban and infrastructure investment arrangements.

Aligned with Sport Accord in May 2019, in Gold Coast, it is recommended that initial outputs from the economic assessment are made available to the Leadership Group to inform discussions with the IOC President and other IOC representatives who will be in Gold Coast. There may also be an opportunity for a follow up IOC technical visit to be conducted later in 2019.

The economic assessment is recommended to be completed in 2019 to inform the Leadership Group on the development of final Games scenarios and their impact.

A final decision to bid or not bid is recommended to be taken no later than two months prior to the Tokyo 2020 Olympic Games.

9. Summary of Feasibility Analysis

Based on:

- The Indicative Master Plan which has been developed to test feasibility and is an initial view of a compelling Games plan
- The ongoing implementation of the IOC New Norm initiatives
- The commitment to enhance transport, in particular public transport, connectivity across the region (for the Games this includes a focus on the North - South corridors)
- The ongoing development and maintenance of sport venues in accordance with long -term plans
- The alignment of development scheduling for a major legacy housing development (Olympic Village) and a selected number of smaller legacy housing developments (Media / other Village(s))
- Gaining the full cooperation of the hotel industry and other associated accommodation providers (to enable the development of an adequate Games accommodation inventory)

An Olympic and Paralympic Games in SEQ is feasible and is likely to generate significant opportunity for substantial economic and community benefits.

Table 5: Summary of feasibility analysis - Master Plan and Venues

Requirement	Satisfaction of requirement	Comment
Capacity to meet competition venue requirements (Existing and planned investments considered)		/ Based on existing and planned venues and selected use of temporary venues for showcasing purposes or where legacy has been identified, SEQ would have the majority of venues in place for a Games. Based on Stakeholder engagement, additional venue requirements can be aligned with legacy needs in the region / There are also options to further utilise existing venues in Queensland and potentially interstate should legacy requirements change
Capacity to meet non-competition venue requirements (Existing and planned investments considered)		/ Based on existing, planned and potential development programmes, preferred options have been identified for the key non-competition venues, with a view to supporting optimal legacy outcomes for the city and aligning with city building projects identified by key stakeholders. If the alignment with these long term developments is not achieved, then alternate solutions could be developed to meet Games requirements
Cohesive master plan aligned to long-term needs of the city and supporting excellent Games (Existing and planned investments considered)		/ The Indicative Master Plan developed to test feasibility provides a compelling regional Games proposition with opportunities to engage host cities beyond SEQ if this is required. The Indicative Master Plan also reinforces significant legacy urban development / infrastructure investment and development positioning the Games as a positive catalyser / accelerant
Support for ongoing professional sport competition (Existing and planned investments considered)		/ The Indicative Master Plan demonstrates that a balanced approach to professional sports, (particularly AFL, Basketball, Cricket, Netball, Rugby League) is achievable which does not unduly disrupt competition arrangements during the preparation for the Games

	Full satisfaction of all Games requirements
	Meets the majority of Games requirements
	Meets Games requirements at a basic level / minimal level
	Not able to meet Games requirements
No rating	Circumstances do not allow a rating to be applied

Requirement	Satisfaction of requirement	Comment
Alignment of Games venue requirements with long-term needs of the host community	●	All venue development is aligned with long-term plans and no venue, other than selected temporary venues, will be built for the Games. There is no known Games capital expenditure requirement. There is a need to align upgrade programmes for existing venues with Games scheduling, however, the majority of this is investment will be required regardless of the Games

Table 13: Summary of feasibility analysis - Other Enabling Infrastructure

Requirement	Satisfaction of requirement	Comment
Provision of an up-to-date technology backbone connecting all venues (Existing investments considered – no confirmed planned information available at this time due to market / commercial sensitivity)	◐	Based on the existing telecommunications industry framework and likely future investments by the private sector, the telecommunications backbone required for the Games will be met. Beyond this base level, some enhancement to the fibre optic network may be required and if this is achieved then this feasibility factor could be upgraded to full satisfaction of Games requirements
Provision of resilient energy supply (Existing and planned investments considered along with Games specific temporary and back-up power augmentation)	●	With the usual Games specific temporary and back-up power augmentation, the SEQ energy infrastructure will met Games requirements

Table 14: Summary of feasibility analysis - Legacy and Sustainability

Requirement	Satisfaction of requirement	Comment
Games contribute to SEQ long-term development	●	/ The Games present a significant opportunity to catalyse and accelerate established urban development and infrastructure investment requirements needed to accommodate future population growth in SEQ. If appropriately programmed and funded in the near term, an SEQ Games could redefine the relationship between the Games and legacy as did Barcelona in 1992
Reinforce broad based sustainability policies, practices and specific initiatives	●	/ The current sustainability framework in SEQ can be manifestly reinforced by the Games through showcasing and establishing new standards. Priority precinct development could result in significant regeneration and provision of enhanced public amenity, public spaces including helping reverse greenspace reduction trends. Housing development is another specific area where inclusive policies could deliver affordable housing solutions / The alignment of the Games with the investment in public transport infrastructure across the region and a modal shift from car to public transport would be of major environmental and lifestyle benefit to all in SEQ and beyond
Enhanced sport, recreation, wellness and culture opportunity	●	/ The Indicative Master Plan reinforces the development of community sport and recreation facilities across the region. Likewise, the initial outline planning for a new entertainment and cultural precinct in central Brisbane would provide SEQ with the next 'Expo 88' effect, something which is highly regarded and sought after across a broad range of stakeholders and the community
Promotion of Brisbane as a world city and SEQ as a globally competitive region	●	/ Managed effectively, the alignment of SEQ's development agenda, driven by population growth and the promotional impacts of the Olympic and Paralympic Games, will accelerate SEQ's global recognition and competitiveness like few other initiatives can. It is anticipated that this will result in short and long term benefits

Table 5: Summary of feasibility analysis - Olympic Games Transport Concept

Requirement	Satisfaction of requirement	Comment
Airports (Existing plus planned upgrades considered)		/ Adequate airport capacity, plus planned upgrades, to cater for the peak arrival and departure demands / Excellent public transport connectivity and major highway connections to the city and major hubs from Brisbane airport / Additional capacity in Gold Coast and Sunshine Coast Airports / Limited international flight connectivity, but will benefit from strong international connectivity with Sydney, Melbourne and Perth airports, which, in turn are connected to the world
Transport Infrastructure (Existing plus planned upgrades considered)		/ Athlete travel times are good, using the proposed GRN on the existing roads / There is significant experience in planning and delivering for a major event, supported by existing traffic management centres, existing Intelligent Traffic Management Systems (ITMS) infrastructure, advanced modelling capabilities, and a mature transport industry / The SEQ car based culture and congested roads will present significant challenges if the transport and road network is not upgraded prior to the Games in 2032
Spectator and Workforce Transport (Existing system capacity considered. For further information on impacts of panned or proposed investments refer to the *SEQ Regional Strategic Transport Road Map*)		/ The Indicative Master Plan is developed around public transport connectivity, but if there is any change to the master plan, connectivity may decrease, resulting in significant transport pressures / Due to the size of the cities in SEQ and the low Public Transport modal shares, the Public Transport system will be strained significantly. SEQ Public Transport, if enhanced as proposed in SEQ Regional Strategic Transport Road Map may address the Games demand in many cases / Major special systems would need to be developed to support the Public Transport system, and further enhanced if the master plan becomes misaligned from the public transport network / 2032 rail services will not have adequate capacity to serve all interurban trips during the peak Games days. The excess demand needs to be served by private cars and Park and Ride / Rail / Metro services

Requirement	Satisfaction of requirement	Comment
Travel Demand Management (Planned / likely measures considered along side recent major event experiences)	●	/ Significant experience from TDM planning for the Gold Coast 2018 Commonwealth Games / TMR has very advanced modelling capabilities, and an advanced journey planner and traffic alert web portal, and all available channels are being used for TDM under current TMR operations

Table 6: Summary of feasibility analysis - Games Operations

Requirement	Satisfaction of requirement	Comment
Meet Games accommodation requirements while providing adequate business as usual capacity (Existing and planned investments / capacities considered)	◑	/ Accommodation capacity is a substantive feasibility factor and will require focus if a Games bid is to progress. An initial review indicates only a regional solution will meet Games requirements and reliance on IOC New Norm flexibility principles will be required as will the alignment of planned residential developments to accommodate Media and the Olympic Villages. Some displacement of business as usual visitors is likely
Provide medical and emergency services to meet all Games related risks and support non-Games community needs (Existing capacities considered as Games requirements exceeded and no additional capacity required)	●	/ SEQ / Queensland has existing medical services / hospitals which would meet all Games requirements and a sophisticated emergency response plan, that is regularly tested responding effectively to natural disasters
Provide a safe and secure environment in which to stage the Games (Existing and planned investments / capacities considered)	●	/ The relatively benign security environment in SEQ / Australia and the effective and well-coordinated multi-tiered approach to major event safety and security, will meet Games requirements across all policy, legislative and command and control aspects. While overall the various 'blue light' agencies are well trained and equipped, the Games will place significant demands on capacities. The supply of paid security staff will also require careful planning and attention. While presenting a challenge, the practices of the past indicate these can be met

Requirement	Satisfaction of requirement	Comment
Enable the Games commercial and partnership programme through protection of intellectual property rights and prevention of ambush and parasite marketing (Existing status and event precedents as an indicator of future status considered)	●	/ The commercial protection of major event sponsors / partners is well defined through existing general and specific legislation and regulation at national, state and regional levels. There is an established practice of adopting any additional measures in a timely manner which responds to evolving technologies and circumstances
Provide for the efficient and 'friendly' entry of Games participants (all categories including media) and their equipment with an Olympic Identity and Accreditation Card acting as or being enabled to provide a basis for visa entry to Australia (Existing status and event precedents as an indicator of future status considered)	●	/ Customs and immigration procedures in Australia have supported the conduct of a wide-range of major events. Subject to the continuation of policies which support this it is anticipated that a Games in SEQ would meet all related customs and immigration requirements subject to the retention by Australia of the right to reject entry of any individual where there are substantive grounds
Demonstrate major event hosting capability (Existing status as an indicator of future status considered)	●	/ At a national, state and SEQ level a range of major sports and non-sports events have been hosted and comprehensively demonstrate both the appetite for and delivery capability in regard to major sports events

Requirement	Satisfaction of requirement	Comment
Deliver other operational elements to enable the conduct of successful Games including: / Accreditation / Arrivals and departures / Brand, Identity and Look of the Games / Ceremonies / City activities and Live Sites / City operations / Communications (and public engagement) / Cultural Olympiad / Digital media / Event services / Financial management / Food and beverage / Language services / Press operations / NOC services / Olympic Family and Dignitary Services / Torch Relay / People management / Sport / Signage and wayfinding / Ticketing / Paralympic Games (Existing status and future event hosting status considered)	●	/ While each of these aspects of the Games presents its own unique set of circumstances and operational challenges, in all instances there is sufficient evidence of capability and capacity to meet reasonable Games requirements benchmarked against current practices and recent major event experiences in Australia / In some instances, the manner in which requirements will be met relates to financial parameters (for example Ceremonies and the Cultural Olympiad) which are, to some extent, discretionary / For other aspects, such as City operations, the investment in transport infrastructure is a key determinant of the effectiveness of solutions for the long-term which will enable Games operations

Table 7: Summary of feasibility analysis - Finance, Governance and Engagement

Requirement	Satisfaction of requirement	Comment
Funding and underwriting to meet Games operational requirements (Refer commentary)	No rating	/ The capacity to meet Games-time funding requirements has been demonstrated by the staging of the Gold Coast 2018 Commonwealth Games in SEQ wherein the operating deficit was larger than that likely for an Olympic and Paralympic Games. Notably, the benefit arising from the Olympic and Paralympic Games is likely to be significantly greater than for a Commonwealth Games. Therefore the affordability of the Olympic and Paralympic Games is significantly more attractive than the Commonwealth Games / The overall objective of the IOC is to ensure that by 2032, the Olympic and Paralympic Games require no tax payer / government funding contribution to the Games operating budget other than in relation to government-controlled services, security and public transport. While in this study the conservative and backward-looking approach to financial benchmarking results in a government subsidy being required, it is acknowledged that the IOC's New Norm initiatives, if successfully implemented, will largely eliminate the need for such funding / In regard to financial underwriting of the Games operating costs, the IOC has considerably relaxed its requirements during the most recent Olympic bid campaign (2026 Olympic Winter Games) and while an underwriting will be required for local purpose it is likely that this will not pose an unmanageable contingent liability on the underwriter. Based on past convention for such events this underwriting is usually provided by the state government / The Queensland Government is yet to determine if it will support the bidding for and hosting of the Games therefore no feasibility rating is offered in this regard
Funding and delivery of the Games capital programme (Refer commentary)	No rating	/ There is no Games capital programme. All venue and infrastructure required for the Games either exists or will exist based on city, regional, state or national development plans

Requirement	Satisfaction of requirement	Comment
Funding and delivery of long-term development plans which will enable the Games (Current funding arrangements considered. Note: if investments as forecast through the Indicative Master Plan and the *SEQ Regional Strategic Transport Road Map* are achieved the rating would be revised to 100% compliance)	◑	/ Growth in the SEQ region is driving the need for enhancements in transport, housing, sport / recreation and entertainment / cultural facilities. At the same time the ongoing viability of existing facilities requires periodic upgrading. All of these investment decisions will be made regardless of the Games, however in two specific instances, the scheduling of such developments to precede the Games will enhance Games delivery / Given the regional Games concept, as identified in the Indicative Master Plan, and the distribution of both venues and accommodation, an enhanced regional public transport solution will enable Games and business as usual activities. It is noted that the Queensland Government has recognised this need through the funding of Cross River Rail, a key element of the transport enhancement plan / The accommodation capacity in the region and the demands of the Games, allowing for a stock of rooms for business as usual visitors, means that supplementation of accommodation with Villages is likely to be necessary. Therefore, the scheduling of planned developments to allow this is a key feasibility factor
Demonstrate the support of government and the public (Further review required – out of scope of study)	No rating	/ While there appears to be an appetite to explore the opportunity of hosting the Games by CoMSEQ, the private sector and the community of SEQ, the Queensland Government is, reasonably, yet to determine its position and will do so following receipt of this report and an associated economic assessment it will undertake in early 2019. To date the position of the Federal Government is yet to be determined
Demonstrate effective Games delivery arrangements with clear structures and responsibilities (Existing status and precedent event hosting status considered	●	/ Australia has hosted a range of major events over the past two decades. A generally accepted set of governance arrangements has emerged and the proven practices of the past will enable SEQ to define future arrangements demonstrating their efficacy and a comprehensive approach to risk management and optimising Games opportunities. Ensuring a thorough review of recent learnings and developing a comprehensive and thoughtful responsibilities matrix will be part of meeting the overall Games requirements

Context

Council of Mayors (SEQ) (CoMSEQ) has commissioned Lagardère Sports / EKS to undertake this study to provide an assessment of the feasibility of hosting an Olympic and Paralympic Games (the Games) in South East Queensland (SEQ)

In this Feasibility Study both the Olympic Games and Paralympic Games are considered in relation to the planning for and delivery of both Games as it is a condition of hosting the Olympic Games that a city / region also hosts the Paralympic Games. Throughout this report the term 'Games' should be read to mean both the Olympic and Paralympic Games.

The related activities of pre-Games preparation for both Olympic and Paralympic Games teams that participate in the Games is considered briefly in this Feasibility Study, however, further analysis is required into the manner in which such a programme could be optimised for cities and regions across Australia. It is recommended this analysis be undertaken if it is decided to bid for the Games. The opportunity for cities and regions to benefit from hosting pre-Games training camps for some of the 206 National Olympic Committees (NOCs) and 176 National Paralympic Committees (NPCs) is significant as evidenced by examples such as the British Olympic Committee's base camp in Gold Coast, established over a number of years preceding the Sydney 2000 Olympic and Paralympic Games, which thereafter helped establish the Gold Coast as a preferred training location for many top athletes across a range of sports. For the 2012 Olympic and Paralympic Games in London, UK established a broad cities and regions initiatives which capitalised, amongst other things, on hosting pre-Games training and was considered a success across Great Britain.

The context outlined in the situation analysis below provides an important framework within which to consider two essential questions in determining feasibility. The first is 'can' the Games be staged in SEQ?. The second, and perhaps more important, question is 'should' CoMSEQ propose the hosting of an Olympic Games?

The answer to the first question ('can') is primarily of a technical nature, matching Games requirements with current or future capacities and assessing specific financial requirements and opportunity costs.

The second question ('should') is more aligned with the future development strategy and the perceptions around opportunities and risks which will or could arise as a result of bidding for and staging the Games. This is explicitly linked to the long-term development plans and ambitions of the region and beyond.

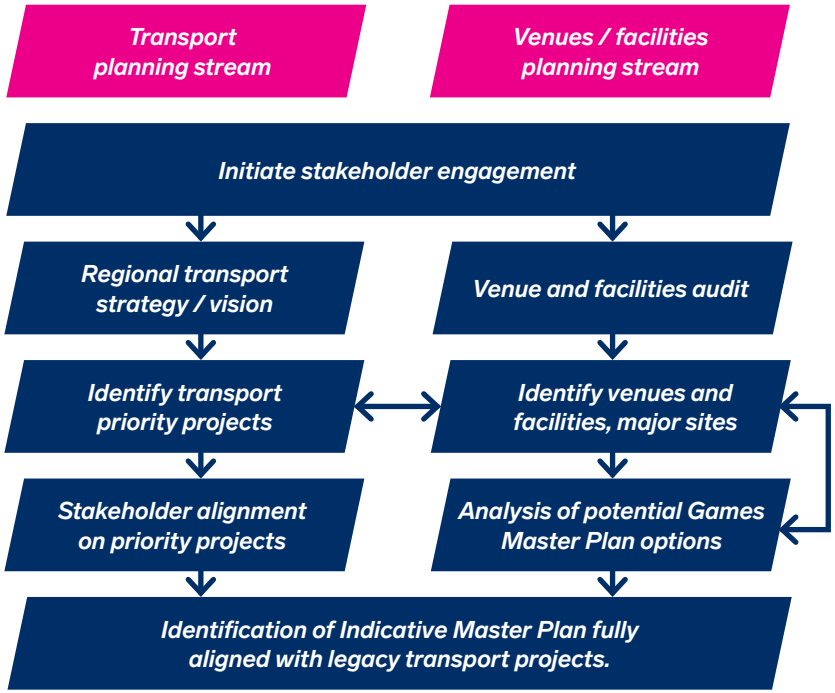
This report deliberately attempts to address the first question pragmatically. Based on currently available information a pathway for a more detailed examination of how the Games in SEQ could be leveraged to accelerate and catalyse strategic developments is provided. As research and consultation have progressed, it has become clear that many stakeholders consider there are two key areas on which to focus: the first and arguably most profound relates to improved regional mobility and investments in more effective and efficient regional public transport; and the second relates to specific urban development opportunities.

There has been an ongoing discussion regarding the financial risk associated with the Games for host communities. This concern is specifically addressed in this report through an examination of Games costs. However, the question of affordability is found to be less about the cost of the Games and more about the long-term plans for the region.

During the study, it was acknowledged that the Queensland Government would need to undertake an economic analysis using inputs from this report. Therefore, brief commentary is provided on some economic parameters at section 8.1.7, but this is not intended to be comprehensive.

Given the importance of regional transport strategy, a parallel study has been completed *('Strategic Transport Road Map for SEQ')* which informs relevant aspects of this report. The transport study examines the needs of the region and is not determined by the potential Games hosting arrangements. The transport strategy and resultant development road map is driven entirely by the long-term needs of SEQ regardless of a Games hosting 'appetite'.

Figure 1: Olympic Feasibility Study diagram



Situation Analysis

2.1 Local Government Framework

The South East Queensland Economic Foundations Paper published in January 2018[20] informs the development of a tri-partite agreement between local, state and Commonwealth governments to progress a South East Queensland (SEQ) City Deal. The proposed SEQ City Deal provides the foundation of a framework for investment into the region that will support the growth of priority industries, support the expansion, efficiency and connectivity of key corridors and clusters, and ensure the effective connectivity of key labour market areas to centres of employment activity.

As such, the information adapted from the proposed SEQ Economic Foundations Paper provides key information about the current demographics and issues in SEQ and the economic aspirations for the region that are summarised here.

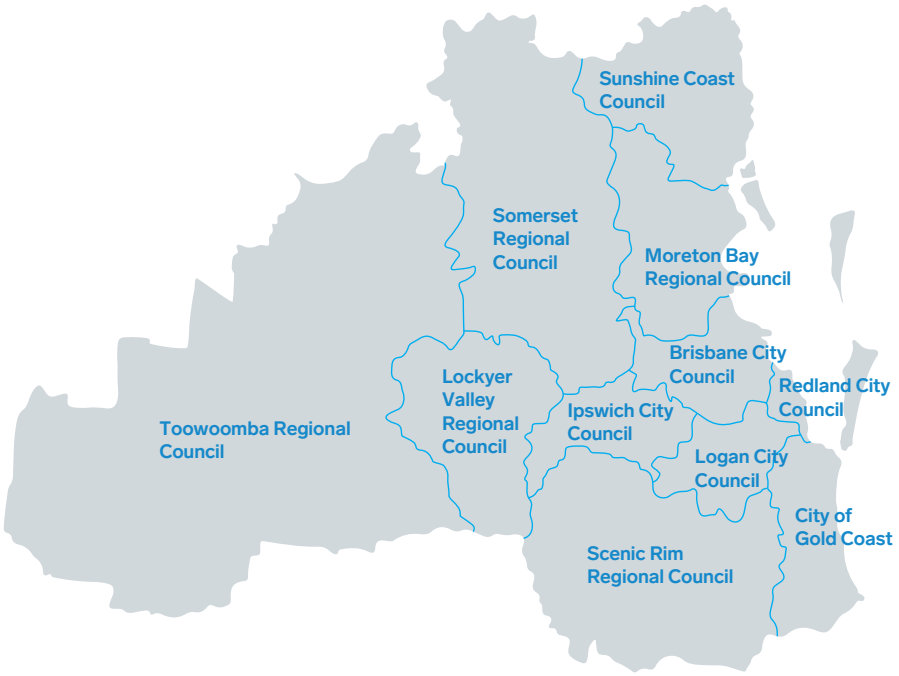
In 2007, the local government areas (LGAs) were amalgamated across the SEQ area to 11 Councils. The amalgamation has improved the Councils' financial sustainability through economies of scale and increased the geographic size of most LGAs.

This Feasibility Study considers these 11 LGAs in the SEQ region, inclusive of: Sunshine Coast Regional Council, Moreton Bay Regional Council, Somerset Regional Council, Brisbane City Council, Redland City Council, Logan City Council, Gold Coast City Council, Ipswich City Council, Lockyer Valley Regional Council, Scenic Rim Regional Council and the Toowoomba Regional Council area (see Figure 2: right).

CoMSEQ has provided a leadership role in bringing 10[21] of the 11 LGAs across the region to work together around joint advocacy and policy initiatives, including key planning activities, infrastructure coordination, leading environmental initiatives and improved engagement with other tiers of government.

It is within this framework that CoMSEQ is funding and providing thought leadership in the region to investigate the feasibility of hosting the Olympic and Paralympic Games with an initial focus on a 2032 opportunity.

Figure 2: SEQ Area of Interest[22]



[20] South East Queensland Economic Foundations Paper March 2018 - https://s3.treasury.qld.gov.au/files/SEQ-Economic-Foundations-Paper.pdf

[21] 10 members of CoMSEQ since July 2018, following the withdrawal of City of Gold Coast from CoMSEQ

[22] Council of Mayors (SEQ)

2.2 Liveable Gateway

While seeking to grow the economy, the SEQ region has defined a vision for a **'liveable gateway'.**[23] This term has been developed to capture the unique characteristics of the region, relative to other key metropolitan regions in Australia and reflects two critical differentiators of the region's identity and advantages.

Firstly, SEQ is arguably best known for its diversity and varied lifestyle choices. With scenic hinterlands, pristine beaches and vast agricultural land all within an hour of the central business district (CBD), the region's commercial hub is home to many world class destinations. SEQ has a favourable warm sub-tropical climate, affordable housing, safe communities and low sovereign risk for business investment.[24]

Secondly, SEQ is well positioned to become a trading region with direct connectivity to the world, primarily its closest neighbours in the Asia Pacific region. Supplemented by significant infrastructure capacity and linked by five international gateways, SEQ holds a strategic advantage of growth potential in aviation, tourism, leisure and freight.[25]

SEQ is seeking to leverage these attributes to become a globally and domestically recognised trading portal.

2.3 SEQ Growth

As the third-largest urban region within Australia (34,385 km^2), SEQ is home to one in seven Australians (3.4 million people) and is expected to attract an additional 1.8 million residents by 2041.[26]

Between 2006 and 2016, the SEQ population grew by over 24%, outpacing all of Queensland, New South Wales and Victoria's total growth over the same period (21, 15, and 22 % respectively).[27]

The region's population growth has been underpinned by a period of sustained net migration inflows from both interstate and overseas. SEQ now comprises a highly diverse population with almost one-quarter of the population born overseas.

This population growth has been most evident amongst young families migrating from across Australia to benefit from the region's economic opportunities, sub-tropical climate and affordable living.[28] The cost of living in SEQ is more affordable for young families than in southern capital cities. This has, in part, been driven by the lower mean price of residential dwellings in Brisbane (AUD497,000 compared to AUD904,000 in Sydney and AUD723,000 in Melbourne).[29]

While Brisbane remains the region's largest contributor to total population growth, SEQ's local government areas are experiencing high population growth rates facilitated by the development of urban growth fronts. In the 12 month period for 2015–16, Ipswich grew by 2.9 %, Sunshine Coast by 2.5 %, Gold Coast by 2.4 %, and Moreton Bay by 2.3% while Brisbane grew at 1.6 % over the same period.[30]

Benchmarked against similar international city regions,[31] SEQ has the lowest regional population density. Comparing the centres in each region, Brisbane also had the lowest density by some distance.[32] This urbanisation pattern leads to higher sprawl, a more dispersed infrastructure network and a less connected region than most of its peers. Other regions have made investments in transport infrastructure, digital connectivity, and medium density, high quality urban living, promoting multi-centred regions.

Continued urban expansion is both a strength and a challenge for SEQ's long-term economic performance. SEQ will continue to attract new skilled migrants to the region, as they seek an affordable and attractive lifestyle. In turn the region requires greater ongoing investment in key infrastructure assets to support sustainable growth.[33]

[23] South East Queensland Economic Foundations Paper – page 33.

[24] South East Queensland Economic Foundations Paper – page 33

[25] South East Queensland Economic Foundations Paper – page 33

[26] South East Queensland Economic Foundations Paper – page 22

[27] South East Queensland Economic Foundations Paper – page 38

[28] South East Queensland Economic Foundations Paper – page 36

[29] South East Queensland Economic Foundations Paper – page 38

[30] South East Queensland Economic Foundations Paper – page 36

[31] South East Queensland Economic Foundations Paper - Benchmark comparisons to Vancouver Metro, South East Florida (Miami), Cape Town metro, Hamburg region, San Diego region, South Holland (Rotterdam), Barcelona province, Fukuoko prefecture

[32] South East Queensland Economic Foundations Paper – page 42

[33] South East Queensland Economic Foundations Paper – page 36

2.4 SEQ Economy

SEQ is home to over 70 % of the state's employment and contributes almost two thirds of the state's gross regional product,[34] with AUD224 billion.[35]

SEQ's economy is transitioning from a historical base of agriculture, mining and traditional manufacturing, to a more diverse knowledge economy with increased high value manufacturing and professional service activities. SEQ has been able to transition the skill base of its workforce to align to emerging industries and add value to the outputs of its historical base industries. This economic shift has materialised in the region growing advanced manufacturing, agribusiness and traded health and education industries.[36]

The region's tertiary education industry has experienced strong growth as a collaborator with the private sector. Queensland universities have experienced a 75% increase in revenues associated with consultancy and contract work between 2010 and 2015.[37]

An estimated 900,000 workers in SEQ, accounting for approximately 64% of the SEQ workforce, engage in population-serving activities including local health and education, retail and wholesale trade, industrial and construction services, food and recreation, and public administration.

2.5 Tourism

SEQ has some of the highest international visitation numbers in Australia. The region's top three tourist areas (Brisbane, Gold Coast and Sunshine Coast) attracted 33% of Australia's total visitations in 2017. This is facilitated by four internationally connected airports providing access to each tourist region, and the unique attractions located throughout SEQ.

The direct connections to some of the fastest growing middle-income areas in the world (including Singapore, Hong Kong, Shanghai, Manila and Guangzhou, among others) has not directly translated into higher tourism expenditure. At present, tourism expenditure in SEQ is lagging behind the other eastern capitals, and accounts for only 13% of the total tourism expenditure in Australia.

The challenge for SEQ will be to better leverage its four international airports and overall destination offering to increase visitation numbers and to demonstrate the value of the region's attractions to improve tourism expenditure.[38]

[34] South East Queensland Economic Foundations Paper – page 26
[35] www.economyprofile.com.au – incorporating Australian Bureau of Statistics' (ABS) June 2017 Gross State Product
[36] South East Queensland Economic Foundations Paper – page 37
[37] South East Queensland Economic Foundations Paper – page 37
[38] South East Queensland Economic Foundations Paper – page 40


University of the Sunshine Coast

2.6 Education

SEQ's higher education sector is growing rapidly, serving both domestic and international students. The region's reputable higher education providers have generated international student fees in the Queensland economy exceeding AUD860 million in 2015. This does not account for the flow-on benefits of international students studying in the region, including increased economic outcomes in the tourism industry through visits from student families and friends. This is a market with significant further growth potential and will be critical to the region's economic future.[39]

2.7 Sustainable Prosperity

Sustainable prosperity is a result of sustainable development that enables all human beings to live with their basic needs met, with their dignity acknowledged and with abundant opportunity to pursue lives of satisfaction and happiness, all without risk of denying others in the present and the future the ability to do the same.[40]

2.7.1 Access to Transport

Quality transport infrastructure allows residents to easily move around the region to engage in activities and access services and employment. Poor transport infrastructure hampers the movement of inhabitants, increasing the amount of time required for commuting and decreasing time available for other activities.[41]

Transport accessibility to key areas of employment provides an indication of the quality of transport infrastructure in SEQ and its capacity to support employment accessibility.

The majority of SEQ has good access to Regional Economic Clusters (REC) for private vehicle owners, with 90% of the region's population having access via private vehicle to a REC within 30 minutes. In contrast, only 20% have access via public transport within 30 minutes. Hence, improving public transport access has the greatest potential to sustainably improve overall accessibility throughout the region, allowing greater ease of access to the region to all sectors of the population, not just car owners / users.

[39] South East Queensland Economic Foundations Paper – page 40

[40] The Worldwatch Institute. (2012). State of the world 2012: Creating sustainable prosperity. Washington, DC: Island Press. www.worldwatch.org/stateoftheworld2012 (Source: SEQ City Deal – Economic Foundations Paper)

[41] South East Queensland Economic Foundations Paper – page 40

2.7.2 Socio-Economic Disadvantage

The 2011 Socio-Economic Indexes for Areas (SEIFA) provide a measure of the relative disadvantage of areas through the Index of Relative Socio-economic Disadvantage (IRSD). The IRSD measures an area's level of disadvantage from most disadvantaged (IRSD score of 1) to least disadvantaged (IRSD score of 10) by assessing census variables such as households with low income, number of people with no qualifications and number of people in low skilled occupations.[42]

Within SEQ there are pockets of disadvantage along some major transport corridors, highlighting the importance of complementary interventions to support economic participation and economic wellbeing for SEQ's residents. Other areas of disadvantage located on the outskirts of the region have poor accessibility to services and employment. These areas are home to some of the most vulnerable residents in the region who should be considered in strategic planning interventions designed to facilitate economic growth.

2.7.3 Tertiary Education

The strong tertiary education system of the SEQ region features five universities in the QS Top 500 university rankings. However, when comparing against similar international regions, SEQ's higher education attainment for the region's population is relatively low. This demonstrates that, while SEQ's universities perform strongly with over 100,000 enrolments per annum, the region has not been able to effectively retain the knowledge, with many graduates leaving the region.[43]

2.7.4 Culture and Environment

SEQ's capital city Brisbane has seven out of the ten most liveable suburbs in Australia and one-third of the top 50.[44] The region's communities rank highly for access to parks, schools, and beaches.

Population growth and consolidation development at the heart of SEQ has seen active vibrant metropolitan communities expand, providing the population with new social experience opportunities. This has led to improvements in Brisbane's liveability ranking, moving up the Economic Intelligence Unit's (EIU) liveable cities index from a ranking of 20 in 2014 to 16 in 2017, and in Monocoles' list of top 25 liveable cities, from a ranking of 25 to 23 in the same period.[45]

[42] South East Queensland Economic Foundations Paper – page 52
[43] South East Queensland Economic Foundations Paper – page 53
[44] South East Queensland Economic Foundations Paper – page 53
[45] South East Queensland Economic Foundations Paper – page 53

2.8 Strategic Planning to Support Growth

As the region continues to expand, the population generally and the growing workforce specifically, need to be accommodated and well connected to major employment areas. Growth fronts, together with key urban consolidation sites, are critical considerations in the planning for transport infrastructure if the future residential population of the region is to be connected to economic activity centres.

The relationship between housing affordability and cost of transport to employment should be considered in developing a range of housing options for workers and their families. As the growth fronts are located well outside capital city areas, the gains in housing affordability may be offset by increased work-related transport costs. In addition, the growth fronts may not offer the amenities and options for housing necessary to attract the range of knowledge workers required by the expanding economy.

Given the level of expansion anticipated in the growth fronts, careful planning and quality urban design is required to ensure the desired level of amenity, as well as the social and environmental value of the areas being maintained. These factors are critical to the attraction and retention of knowledge workers and represent major challenges for the SEQ region.

To enable development in these growth fronts, investment in catalytic infrastructure is required, including road, water, sewer, transport and communications. Water supply and sewerage projects will unlock the development potential of land to support residential growth. Transport networks play a regionally significant role by connecting the residential population to economic precincts and key labour markets. As growth fronts are located on the fringe of urban areas, strategic investment in these emerging residential areas is particularly important, as they often require significant upfront works to enable residential development. The initial investment in these assets creates an environment that attracts ongoing, market-led private industry cluster investment and provides the capacity for future expansions.[46]

Growth fronts, together with key urban consolidation sites, are critical considerations in the planning for transport infrastructure if the future residential population of the region is to be connected to economic activity centres

[46] South East Queensland Economic Foundations Paper – page 124

Master Plan and Venues – Games Master Plan Strategy

This section of the study involves the analysis of a Games master plan approach for a potential 2032 Olympic and Paralympic Games Bid

3.1 Games Master Plan Strategy

3.1.1 Olympic Agenda 2020 – A New Games Opportunity

Recent reforms by the International Olympic Committee (IOC) present opportunities for more innovative and sustainable Games hosting solutions. In particular, this reform makes possible the notion of a more distributed model that could involve, for SEQ, three primary 'hubs' of Games venues in Brisbane, Gold Coast and Sunshine Coast. This would enable maximum use of existing venues, including those developed or renovated for the Gold Coast 2018 Commonwealth Games, in complete alignment with the long-term legacy needs of the region.

While the IOC has established a more flexible approach to the location of Games venues through its Olympic Agenda 2020 and New Norm initiatives and SEQ can benefit from this, any regional plan or plan to distribute venues outside the main host city will still need to meet the Olympic Charter requirements which, as of 9 October 2018 are reflected in Rule 34 and its associated Bye-Laws which state:

"Rule 34 Location, sites and venues of the Olympic Games

All sports competitions and the opening and closing ceremonies must, in principle, take place in the host city of the Olympic Games. The IOC Executive Board, at its discretion, may authorise:

- *the organisation of preliminary sports competitions in a city (or cities) located outside the host city or, in exceptional circumstances, outside the host country, notably for reasons of sustainability; and*
- *the organisation of complete sports, disciplines or events in a city (or cities) located outside the host city or, in exceptional circumstances, outside the host country, notably for reasons of geography and sustainability.*

Bye-law to Rule 34

1. *Any request to organise any event, discipline or other sports competition in any other city or location than the host city itself must include the reason(s) for such request, and be presented in writing to the IOC Executive Board for approval. Such request must be made prior to the visit of the IOC Evaluation Commission for candidate cities, unless otherwise agreed by the IOC Executive Board.*

2 *The organisation, holding and media coverage of the Olympic Games shall not be impaired in any way by any other event taking place in the host city or its region or in other competition sites or venues."*[47]

[47] Olympic Charter - In force as from 9 October 2018

Of greater importance is the opportunity presented for SEQ through a potential Games bid to accelerate the provision of much-needed transport infrastructure across the region. For this reason, a parallel stream of transport analysis has been undertaken concurrent with this study that examines, independent of any potential Games bid / hosting decision, the transport and connectivity issues currently facing the SEQ region. This work has yielded a legacy vision for major centres to be '½ hour Smart Cities connected within a 45 minute Smart Region'[48] and identifies the associated transport project developments required in the context of and within the timeframe for a 2032 Olympic bid.

This Feasibility Study focuses on identifying potential solutions for the major infrastructure elements which would represent the foundation of an Olympic plan, including:

- Public transport infrastructure
- Road infrastructure
- Competition venues
- Olympic Village and other athlete accommodation
- Key non-competition facilities, in particular the International Broadcast Centre (IBC) and Main Press Centre (MPC), and media accommodation.

Indicative Master Plan — Current Status

An Indicative Master Plan, detailed in section 3.5, has been developed with the input and advice of key stakeholders, including the various SEQ Council Mayors and planning authorities, along with informal engagement with a number of Queensland Government authorities.

The specific venue and facility proposals and locations presented in the Indicative Master Plan reflect a potential interpretation of the principles outlined in the master plan framework applying a range of criteria. There are options to the Indicative Master Plan which would maintain the broad objectives and principles of the master plan with alternative venue / facility locations.

The venue proposals are not definitive and in the normal course of developing a Games master plan, locations will evolve during the process as a full understanding of the respective opportunities, constraints, and legacy objectives is developed. Therefore, the Indicative Master Plan should be seen as a first iteration of a potential plan but one which has been carefully conceived and legacy led based on proven principles and inputs from key stakeholders.

Paralympic Games Considerations

In addition to the Olympic Games, consideration has been given to the Paralympic Games in developing a master plan and Games concept, with key principles as follows:

- The Paralympic Games Master Plan will be developed based on the footprint and distribution created for the Olympic Games, and will not require additional venues or non—competition venues
- The overall Paralympic Games footprint can be significantly reduced relative to the Olympic Games, with some regional venues not required given the nature of the Paralympic Sport programme, allowing for a more compact Paralympic Games
- Within the reduced footprint, the Paralympic Games Master Plan maintains the opportunity for a high level of showcasing of outdoor sports and road events
- The Paralympic Village and any satellite villages will have greater capacity than required due to the Olympic Games requirements, and can comfortably accommodate the needs of Paralympic athletes assuming suitable accessible features are designed into the base legacy design

Through the venue audit process, it was confirmed that existing and newly constructed venues in the SEQ region have been designed with a high level of accessibility for users, including spectator accommodation. In the case of some existing venues requiring permanent works, it is noted that accessibility upgrades would be required to meet the standards for a Paralympic Games.

The Paralympic Master Plan will present a compact, and spectacular Games in high quality sport venues.

[48] Major centres will be ½ hour Smart Cities connected within a 45 minute Smart Region. This will mean all urban trips will be within ½ hour and all city-to-city trips within 45 minutes. (Source: Regional Transport Strategic Road Map for SEQ - SEQ Shared Transport Vision)

3.1.2 Legacy Alignment

Historically, the Olympic and Paralympic Games have proven to be a successful catalyst for the implementation of major transport and transformational urban projects. This is evident in many host cities where the Games have enabled the development of major sites and the regeneration of urban areas (notably Barcelona 1992, Sydney 2000 and London 2012). In other cities the Games have accelerated transport infrastructure projects that have changed the way people live, work and play (notably Athens 2004 and Rio 2016).

In this context the Games can have significant positive impacts on a city or region. These impacts are optimised when any incremental infrastructure projects are underpinned by compelling legacy arguments. Hence the key to a successful Games master plan is its complete alignment with legacy needs.

With this in mind, development of the conceptual Games master plan presented in this report seeks to address the following questions regarding impact and feasibility:

1. Does SEQ have the infrastructure capacity (including transport, venues and key non-competition facilities) to undertake an Olympic Games?
2. What additional infrastructure (venues and facilities) would be required and what are the 'order of magnitude' costs?
3. Would a regional master plan provide a feasible and competitive proposition and deliver appropriate levels of service for Games clients relative to other Games and the changing expectations of the IOC?
4. Can an SEQ regional Olympic master plan align with legacy infrastructure requirements without generating incremental costs or infrastructure needed only to conduct the Olympic Games?

As will be demonstrated in this section of the report, the unique attributes of the SEQ region provide the opportunity to develop a compelling Games master plan which can potentially act as a catalyst to deliver region-building infrastructure in an accelerated timeframe.

Throughout this section, references to Olympic Games venues extend to Paralympic Games requirements. Only where Paralympic-specific exceptions were identified were these specifically addressed.

3.2 Games Facilities Requirements

3.2.1 Overview

With respect to IOC requirements for facilities and non-competition venues, while some definitive requirements exist, the reform agenda has meant that increasingly there is a set of variable standards which can be discussed with the IOC and its key stakeholders, including the International Sport Federations (IFs), the International Paralympic Committee (IPC), Olympic Broadcasters and the media in general.

Therefore, for the purpose of this Feasibility Study, requirements and standards are based on the current and relevant experience of the project team. Further modifications to those standards are anticipated over the period of the Tokyo 2020 and Paris 2024 Olympic Games.

The following is an outline of the assumptions for competition venues and non-competition facilities.

3.2.2 Competition Venues

The specifications for numbers of competition venues, venue capacities and field of play (FOP) requirements have been established based on the following:

- The competition programme and venue numbers are based on the Rio 2016 Olympic Games and IOC / IF advice obtained during the 2024 bid process (including opportunities to share venues between sports where feasible)
- Venue capacities are based on benchmarks from previous Games and IOC / IF advice from the 2024 Games bid process; where appropriate these have been adjusted based on the popularity of the sport in SEQ
- Field of play and other technical venue requirements (including specific geographical or physical characteristics for sports such as Mountain Bike and Triathlon) are those defined by IFs applicable to the Rio 2016 Olympic Games and the 2024 Games bid process, but it is noted that the IOC New Norm measures[49] specify that venue requirements at the Olympic Games will not exceed those required for each sport's World Championships

It should be noted that the 'core' sport programme consists of 28 Olympic sports, some of which have multiple disciplines and therefore require more than one venue.

The additional sports appearing on the Tokyo 2020 sport programme are not scoped in this study. A number of these sports, such as Surfing, Skateboarding and Sport Climbing, while not considered in this report, could offer an SEQ Games excellent showcasing opportunities with modest venue requirements which can be met through temporary facilities if no suitable permanent facilities exist. The costs for these temporary facilities can be absorbed into the Games operating budget through an extension to the temporary overlay expenditure. The IOC will undertake a review of the Olympic Sport Programme following Tokyo 2020 and prior to the commencement of the formal 2032 bidding process.

Regardless of the sports programme for 2032, the IOC has capped the number of athletes who can participate in the Games to 10,500. It is noted that the Paralympic Games has a smaller number of athlete participants at 4,350 for Rio 2016 and therefore, other than accessibility requirements, this does not create a capacity based feasibility factor. The IOC cap of 10,500 is important as any sport programme changes will need to be accommodated within this cap enabling SEQ to plan major initiatives such as the Olympic Village, athlete transport and other knock-on impacts of athlete numbers with some confidence particularly regarding cost containment.

Based on the 28 core sports established for the most recent 2024 / 2028 bid process, the following are the venue requirements that underpin this study:

It should be noted that the 'core' sport programme consists of 28 Olympic sports, some of which have multiple disciplines and therefore require more than one venue

[49] *Olympic Agenda 2020 Olympic Games: the New Norm,* Report by the Executive Steering Committee for Olympic Games Delivery, PyeongChang, February 2018


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Table 1: IOC defined venue requirements

Sport	Number of venues	Discipline(s)	Capacity
Aquatics	1	Swimming, Artistic Swimming	15,000
	1	Diving, Water Polo	5,000
Archery	1	Qualifications	-
	1	Finals	6,000
Athletics	1	Track and Field	55,000 - 60,000
	1	Race Walks, Marathon	2,500
Badminton	1	-	5,000 - 6,000
Basketball	1	Preliminaries	6,000
	1	Finals	15,000
	1	3 x 3[50]	5,000
Boxing	1	-	8,000
Canoe-Kayak	1	Slalom	8,000
	1	Sprint	14,000
Cycling	1	Track	5,000 - 6,000
	1	Road	2,500
	1	Mountain Bike	10,000
	1	BMX	5,000
Equestrian	1	Includes Cross Country Course	12,000
Fencing	1 (shared with Taekwondo)	-	6,000
Football	4 – 6	Preliminaries	20,000
	1 (shared with Rugby)	Finals	50,000
Golf	1	-	30,000
Gymnastics	1	Artistic, Rhythmic, Trampoline	10,000 - 12,000
Handball	1	-	10,000
Hockey	1	-	10,000 - 15,000
Judo	1 (shared with Wrestling)	-	8,000
Modern Pentathlon	1	-	10,000
Rowing	1	-	14,000
Rugby	1 (shared with Football)	-	50,000
Sailing	1	-	5,000
Shooting	1	-	3,000

Sport	Number of venues	Discipline(s)	Capacity
Table Tennis	1	-	5,000
Taekwondo	1 (shared with Fencing)	-	6,000
Tennis	1	-	10,000
Triathlon	1	-	2,500
Volleyball	1	Beach	12,000
	1	Indoor (Preliminaries)	6,000
	1	Indoor (Finals)	12,000
Weightlifting	1	-	5,000
Wrestling	1 (shared with Judo)	-	8,000
Total 39 - 42 venues			

The resultant venue footprint is approximately 39 - 42 venues. The final number of venues required will be dependent on several key factors as follows:

- Optimising venue sharing opportunities
- Total number of football venues
- Any subsequent changes to the sport programme which impact the venue requirements

[50] The venue for Basketball 3 x 3 will be located in association with another venue to share essential infrastructure. If the additional sports of Skateboarding and Sport Climbing are maintained on the programme for 2032 , these could be combined to develop an 'Urban Precinct' concept at a site to be determined, as noted in section 3.5.7.

3.2.3 Major Non-Competition Facilities

In addition to sport competition venues, the study has considered several major non-competition facilities. These facilities include the Olympic Village (and any required satellite athlete accommodation), the International Broadcast Centre (IBC) and the Main Press Centre (MPC), noting that the IBC and MPC are traditionally combined to form a single Main Media Centre (MMC).

The concept for these facilities is fundamental to a successful Games master plan and will define the Games experience for both athletes and the media contingent; hence their inclusion in this study.

A robust legacy proposition for these facilities is also fundamental, as there are recent examples of post-Games challenges in delivering a suitable legacy outcome for these venues. The long-term considerations for such facilities have been a focus of the analysis to date, particularly in relation to their potential location and typology.

The requirements for these facilities are based on the following criteria:

- Olympic Village requirements are based on standards from the IOC Villages Games Requirements, including the IOC Host City Contract Operational Requirements and IOC Games Guide on Olympic Villages and planning benchmarks from London 2012 and Rio 2016 Olympic Games, although the number of beds required has been adjusted in line with the IOC New Norm measures, whereby there is a requirement to guarantee only one bed for each athlete *either* at the main or satellite Olympic Village
- An indication of the impacts IOC's New Norm initiatives is the rationalisation of costs of host broadcast production discussed elsewhere in this report. While this initial Feasibility Study has based the IBC requirements on past standards (70,000m^2 with approximately 50,000m^2 at 7m height), the most recent indications are that these requirements will be substantially reduced (to 50,000m^2 with approximately 7,000m^2 at 7m height) resulting in major savings. These savings have not been taken up in this Feasibility Study but should be considered in the further development of a Games plan and related venue requirements.

A summary of the assumptions utilised follows:

Table 2: Major Non-Competition Facilities assumptions

Facility	Assumptions
Olympic Village	/ 16,500 beds total (potentially reduced through the provision of Satellite Olympic Villages for athletes whose competition venues are a considerable distance from the main Olympic Village) / Average of five athletes per residential unit for main Olympic Village (assuming reconfiguration within units for the Games) / Approximate footprint of 40 hectares minimum / Requirement for connectivity to major arterial road network and space for major transport hub / Requirement for proximity to competition venues and major clusters (ideally no more than 60 minutes travel time for all venues being served) / Requirement for a validated legacy proposition
Satellite Olympic Villages	/ Four athletes per unit for satellite villages (minimising the requirement for post-Games adaptation of legacy units) / Requirement for proximity to competition venues and major clusters (ideally no more than 60 minutes travel time for all venues being served) / Requirement for a validated legacy proposition
IBC / MPC	/ Approximately 100,000m^2 of internal space overall (with approximately 50,000m^2 at 7m clear internal height, open plan space)[51] / Preferably one to two storey structure / Requirement for connectivity to major arterial road network and space for major transport hub / Requirement for a validated legacy proposition

[51] As previously noted, through the IOC's New Norm initiatives there has been a rationalisation of host broadcast production whereby the most recent indications are that the IBC requirements will be reduced from 70,000m2 to 50,000m2 with approximately 7,000m2 at 7m height

3.3 Existing and Planned SEQ Venues and Facilities

3.3.1 Audit of Existing Competition Venues

Based on the venue requirements, and in order to establish the infrastructure baseline for a potential Olympic Games bid, an extensive audit of existing and planned venues was undertaken in each of the 11 local government areas within the SEQ region. Venues were identified in collaboration with each Council and other key stakeholders, including Stadiums Queensland. Each venue was assessed on key technical compliance and legacy criteria, both in respect of its current status and its projected status in 2032.

3.3.2 Venues Audit Summary – Existing Venues

The following definitions apply to existing venues, reflecting current IOC terminology:

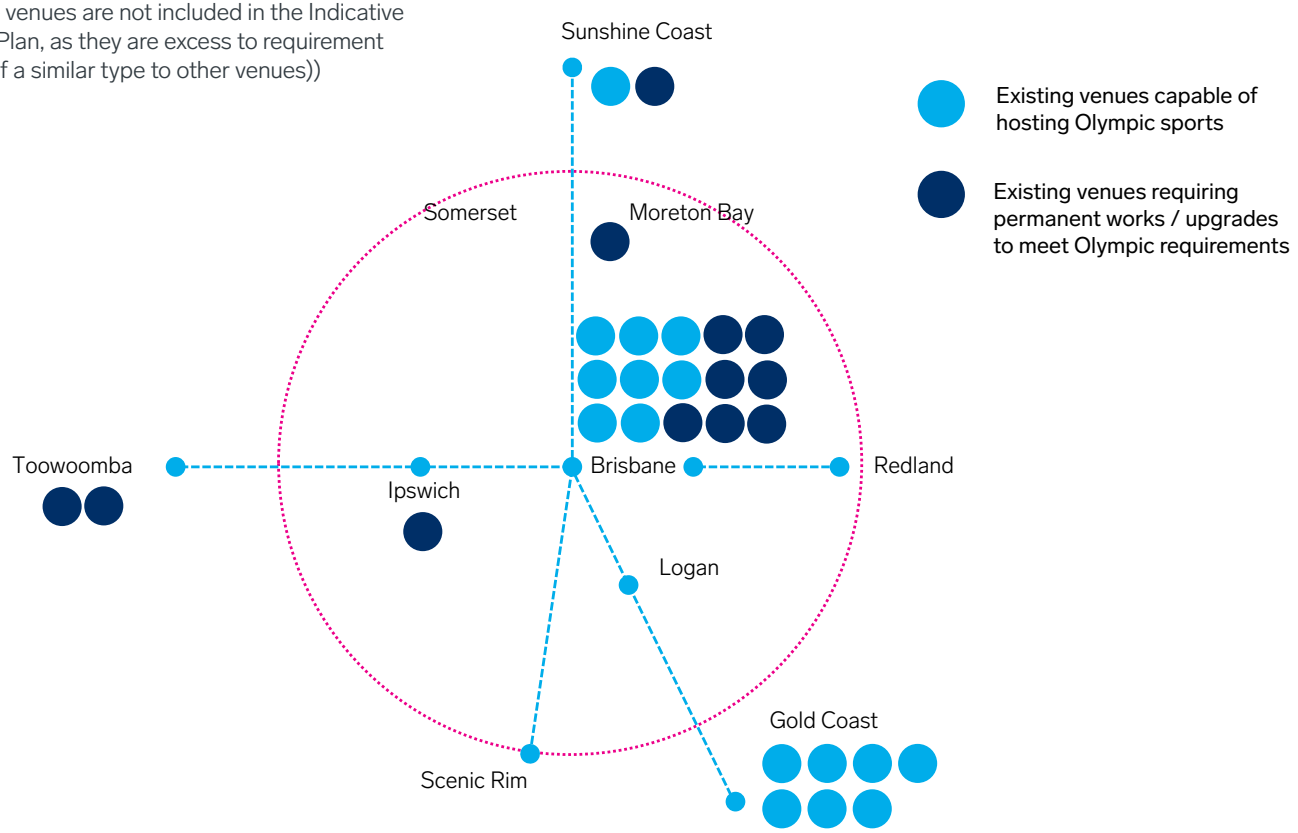
- **Existing venues:**
  Venues which are considered suitable for Olympic competition based on their current standard (and would be suitable in 2032 assuming regular maintenance and upgrades are undertaken based on projected use)
- **Existing venues requiring permanent works:**
  Venues which have the potential to host Olympic competition but are currently not at the required standard and would require reconfiguration or upgrades (it should be noted that these have been identified on the basis that the venue owner has confirmed the legacy value of any required upgrades)

A total of 28 existing venues, as noted in Figure 3, were identified as meeting (or having the potential to meet) Olympic Games requirements. These were primarily located in Brisbane (where venue infrastructure investment has historically been concentrated) and Gold Coast (largely due to the recent investments for the Gold Coast 2018 Commonwealth Games). A number of these venues were of a similar type (for example, outdoor stadiums) and therefore may not all be relevant in the context of a potential Games master plan.

The following diagram identifies the location of the 28 existing venues which could be considered in a potential Olympic master plan. In addition to these venues, several football stadia outside the SEQ region have also been identified. As previously noted, a number of these venues are not included in the Indicative Master Plan, as they are excess to requirement (being of a similar type to other venues included in the plan).

There are existing venues in SEQ that were determined did not meet Games requirements, plus other venues that were not identified for review, that will play an important role in the preparations for the Games. These venues and any new community facilities developed prior to the Games, could form an important component to attract teams for pre-Games training. Over 127 teams from 39 countries were successfully attracted to undertake pre-Games training in locations across NSW prior to Sydney 2000[52]; and London established a 'Pre-Games Training Camps' network of more than 600 venues throughout the UK[53].

Figure 3: Existing venue locations (note - a number of these venues are not included in the Indicative Master Plan, as they are excess to requirement (being of a similar type to other venues))



[52] Business and Economic Benefits of the Sydney 2000 Olympics: A collation of evidence – 2002 (PwC for NSW Dept of State and Regional Development)

[53] London 2012 Olympic Games Post Games Report Volume 3

3.3.3 Venues Audit Summary – Planned Venues

The following definition applies to 'planned' venues, reflecting current IOC terminology:

- **Planned venues:**
  Venues which are being planned irrespective of an Olympic Games, and which could potentially meet Olympic requirements (including through the use of additional temporary infrastructure)

The venue audit process has also considered venues which are planned for development, irrespective of an Olympic bid, as identified by the relevant stakeholders. The potential suitability of each of these planned projects for Olympic Games use was considered based on available information and meetings with key stakeholders. It should be noted that these planned venues are at various stages of planning and in many cases, do not have allocated and committed funding.

The level of information provided for these planned venues was limited in most cases and therefore further detail and analysis is required to validate each for potential Olympic use. However, there was an in principle commitment from all stakeholders to analysing the optimal alignment between Games requirements and legacy needs. In a number of cases it was agreed that Games requirements could be met using significant temporary adaptation to ensure the legacy proposal reflected the community needs.

The following diagram indicates the location of the four planned venues (with Olympic requirements that are aligned with the legacy opportunities) that were identified across the region in four Council areas.

It is proposed to leverage these planned projects in any proposed bid, however it should be noted that in the case of three of the four venues there are suitable existing venue alternatives and feasibility will not be impacted. However, the venue legacy impacts will be reduced. With respect to the Brisbane Live Arena project, the delivery of this venue or an equivalent arena in a different location is an important factor in contributing to the major venue requirements for a Games.

Figure 4: Planned venue locations

3.3.4 Additional Venues Required and the Legacy Opportunities

In addition to identifying the existing or planned venues and facilities that can meet the requirements of the Games, the venue audit process has yielded a clearer understanding of the 'gap' in terms of the additional venues and facilities which would be required for a Games. The early analysis suggests this gap is confined to some eight competition venues.

As previously identified, it is strongly recommended that no additional infrastructure is developed purely to meet the Games requirements. Instead it is proposed the approach to eliminating the 'gap', involves:

- Development of temporary infrastructure for the Games period
- Development of permanent facilities that are explicitly aligned with legacy needs and that may require creative adaptation for use during the Games
- Use of existing venues outside SEQ subject to IOC agreement

Dialogue and analysis regarding the venues 'gap' has been undertaken with each of the SEQ Councils. This has extended to considering new projects not yet identified where an identifiable long-term need exists. From these discussions it is clear that the majority of the additional venues and facilities required for the Games can be aligned with projects that, while not currently 'planned', are likely to fall into the 'planned' category within a 5-10 year period. In some instances, Games feasibility will not be impacted if these venues were not built as reasonable alternate scenarios utilising existing or temporary facilities can be developed, however the venue legacy impacts will be reduced.

A summary of the legacy framework for these facilities is reviewed in the following section.

3.3.5 Legacy Opportunities - Competition Venues

Specific potential legacy developments have been identified as follows:

Table 3: Legacy Opportunities - Competition Venues

Venue Category	Sports	Development options and proposed legacy strategy
Olympic Stadium (1)	Athletics (Track and Field)	Development options discussed: **1.** Utilise / adapt existing stadium **2.** Develop new stadium (based on legacy need) **Proposed legacy strategy – Option 2:** Prior to the Stadiums Taskforce review, there was an identified need for a 25,000 - 30,000-capacity stadium to supplement Suncorp Stadium at some stage in the period from 2028-2047. While the Stadiums Taskforce review considered the period up to 2038 it also noted that a future Games and the future of professional sporting codes in SEQ may have a bearing on the need for additional capacity and this should be aligned with key stakeholders, Therefore, a new stadium has been included in the Indicative Master Plan, allowing for temporary adaptation to increase the seating capacity to 55,000 at Games time.
Major indoor venues (2 - 3)	Basketball Gymnastics Volleyball	Development options discussed: **1.** Development of a new major indoor arena **2.** Upgrade of existing venues **3.** Multi-sport indoor halls, adapted with temporary seating **4.** Other building 'shell' with suitable footprint, adapted with temporary seating **5.** Temporary / relocatable arenas **Proposed legacy strategy – Options 3 and 4:** Based on legacy needs across the region, it was agreed there was a requirement for development of community sport facilities with appropriate footprints to support temporary adaptation for the Games. The Coomera and Carrara Indoor Sports Centres were identified as good benchmarks for this concept.

Venue Category	Sports	Development options and proposed legacy strategy
Secondary indoor venues	Boxing Weightlifting Judo Wrestling	Development options discussed: **1.** Multi-sport indoor halls, adapted with temporary seating **2.** Other building 'shell' with suitable footprint, adapted with temporary seating **3.** Temporary / relocatable arenas **Proposed legacy strategy – Option 1:** Based on legacy needs across the region, it was agreed to focus on developing community sport facilities with appropriate footprint to support temporary adaptation for a Games for the nominated sports. It is noted that these centres could be smaller than those required for the major indoor venues. Potential locations in 2-3 separate local government areas have been identified.
Aquatics Centre	Aquatics (Swimming)	Development options discussed: **1.** Temporary pool within indoor arena **2.** Permanent aquatics facility with temporary expansion **3.** Temporary / relocatable aquatics stadium **Proposed legacy strategy – Option 1:** Following discussions with key stakeholders, including key Queensland Government and sport agencies, a strategy has been proposed for the sport of Aquatics as follows: / For Swimming and Artistic Swimming competition, a potential solution would be to utilise a major indoor arena using a temporary pool as done for the 2007 FINA World Championships in Rod Laver Arena in Melbourne, should a new arena be developed as is currently planned. This would achieve a suitable showcasing and a significant capacity of over 15,000 for a key sport, that does not exist in a current aquatic venue in the region This recommendation aligns with the outcomes of the Venue Audit process, which determined there was no legacy for a new major Aquatic Centre within SEQ

Venue Category	Sports	Development options and proposed legacy strategy
Whitewater Centre	Canoe-Kayak (Slalom)	A number of potential locations for a Whitewater facility were considered across the region with a view to identifying the best potential legacy concept. **Proposed legacy strategy:** A legacy venue (with a potential use as a emergency services training facility) has been identified as a potential solution and this is being studied. Should this or other potential locations not be feasible, the existing facility in Penrith, NSW (site for the 2000 Olympic Games) could meet requirements, subject to weather considerations.
Flatwater Centre	Rowing Canoe-Kayak (Sprint)	Three options have been assessed with respect to a Flatwater Centre for Rowing and Canoe-Kayak (Sprint): **1.** Upgrading of an existing Rowing Centre **2.** Development of new permanent Rowing Centre **3.** Utilise an existing interstate facility (compliant with international standards) **Proposed legacy strategy – Option 2 or 3:** Discussions are ongoing as relates to a potential legacy venue in the Brisbane area, with a specific site being considered. Should the proposed legacy venue in Brisbane not be developed, further analysis will be undertaken on existing Rowing facilities in Scenic Rim and regional Queensland, with input from the International Rowing Federation (World Rowing) to determine the feasibility of these venues. If a Queensland location is not viable the existing facility in Penrith, NSW (site for the 2000 Olympic Games) will meet requirements, subject to weather considerations.

Based on this analysis of the venue 'gaps' and potential legacy concepts, requirements could potentially be met through provision of a range of community facilities across the region, each with a strong legacy proposition. This would reduce the need for large temporary venues with no legacy benefits, although this remains a viable option should any of the legacy options not be validated in the future.

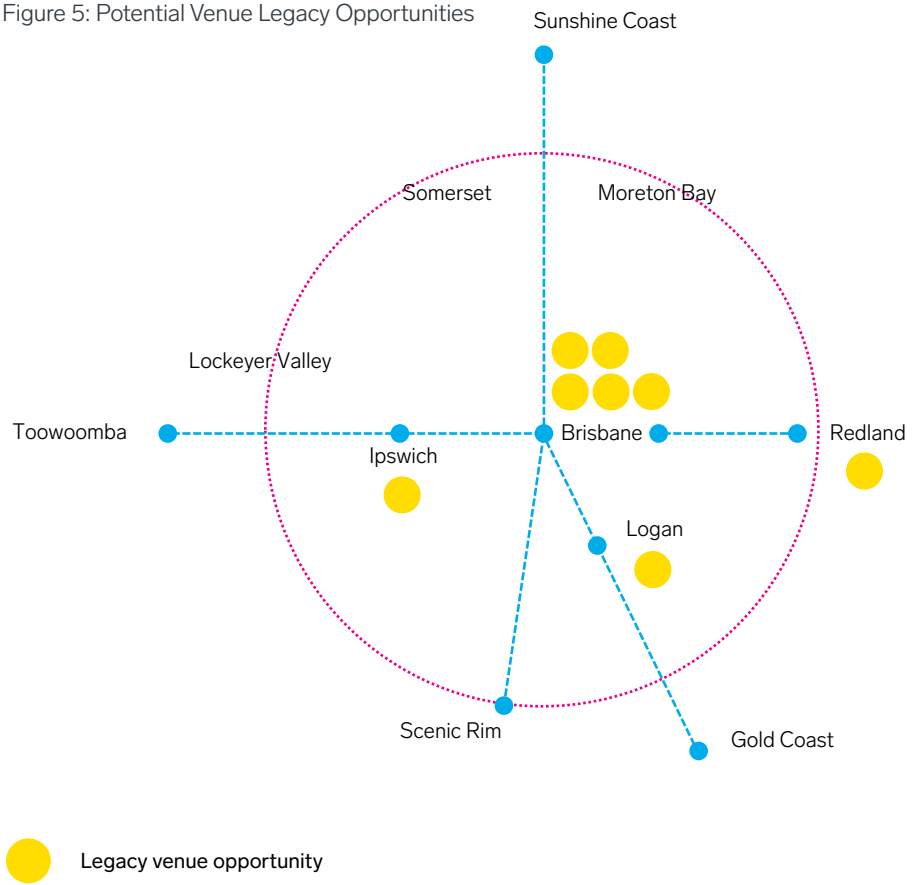
It should be noted that addressing the gap in Games indoor facilities has the potential to address a deficiency of indoor facilities in the region. Several Councils identified the need for more indoor court space to cope with the growing popularity of sports such as Volleyball, Netball and Basketball, as well as other indoor sports. The development of university campuses across the region presents another opportunity for these facilities. For these reasons, the locations identified for indoor facilities in the Indicative Master Plan are not definitive and further analysis is required.

The following definition applies to venue legacy opportunities (noting that the objective is to transition these venues to 'planned' in the medium term, where possible):

- **Venue legacy opportunities:**
  Venues for which a legacy need has been identified by the relevant stakeholder(s) and a potential location has been identified and agreed in principle

The following diagram indicates the location of the eight venue legacy opportunities identified whose legacy opportunities are aligned with Olympic requirements. These were identified across the region in four Council areas.

Figure 5: Potential Venue Legacy Opportunities



3.3.6 Legacy Opportunities – Non-Competition Facilities

In addition to competition venues, several sites were analysed with respect to providing for the key non-competition facilities (Olympic Village(s) and the IBC / MPC). These sites had been identified during the process of the Pre-Feasibility Study.

As previously noted, these facilities can present significant challenges, due to the size of the required site areas and the importance of ensuring a strong legacy concept exists. Of the sites identified in the Pre-Feasibility Study[54], considerable further analysis was undertaken during this Feasibility Study, including high level engagement with Department of State Development, Manufacturing, Infrastructure and Planning, Department of Transport and Main Roads, Stadiums Queensland and the SEQ Councils, all of whom are pivotal to the future development of these sites.

The following is a summary of the proposed location and legacy strategy for these major non-competition facilities:

Table 4: Legacy Opportunities – Non-competition facilities

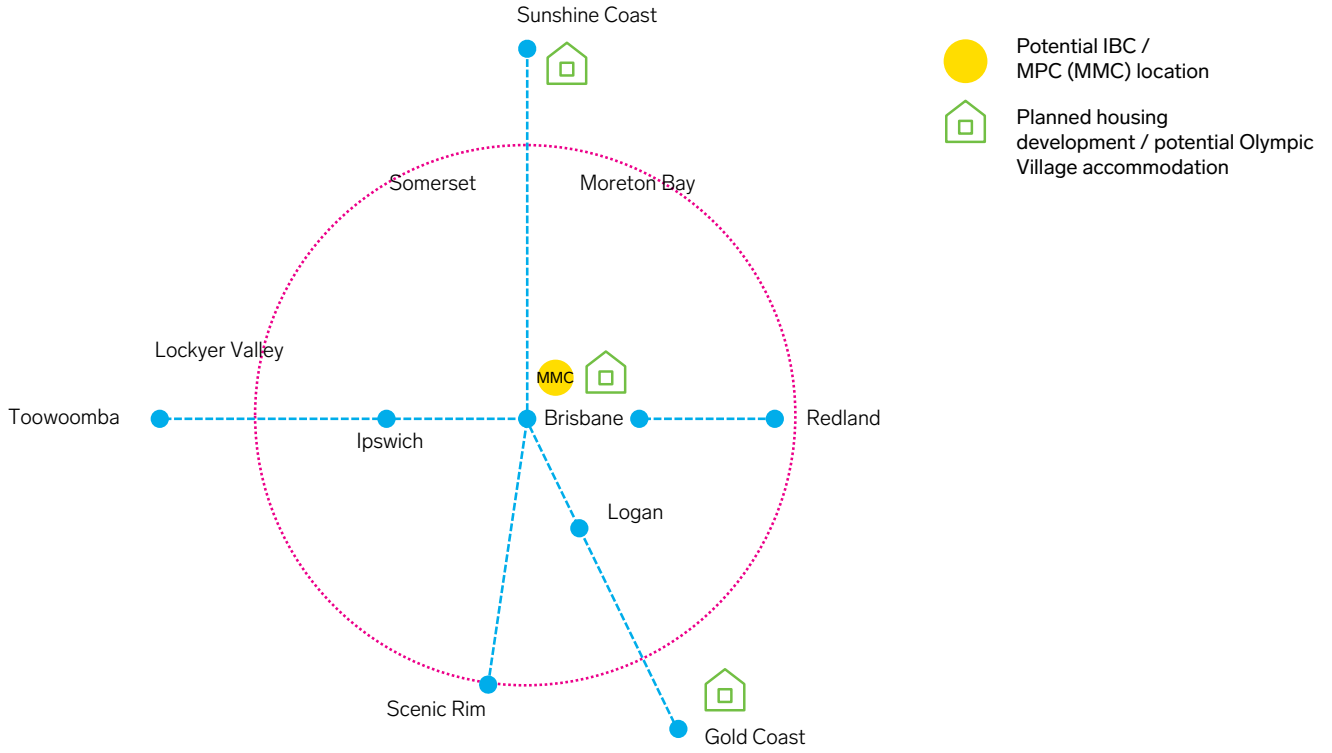
Facility	Proposed location	Proposed Games / legacy strategy
Olympic Village	Brisbane	/ Based on stakeholder consultation, a site of suitable area has been identified for an Olympic Village with a possible legacy use of housing and additional community facilities / Subject to Queensland Government engagement on the development, the required area would need to be secured in a timeframe required for a 2032 Olympic Bid / Games
IBC / MPC	Brisbane	/ Sites have been identified within Brisbane which could accommodate a suitable scale of development / As seen in previous Games, a successful model for this facility would be the provision of a building 'shell' within the 2032 timeframe, which could transition into a major retail and / or cultural facility post-Games to align with legacy needs
Media Villages	Brisbane	/ Two potential sites have been identified within Brisbane which are considered optimal locations for future legacy residential developments, subject to appropriate development timeframes could provide central locations for media accommodation during the Games / The amount of Media Village accommodation required would be based on availability of hotel and serviced apartment accommodation within Brisbane and the Gold Coast

[54] Pre-Feasibility Analysis of a potential South East Queensland Bid for the 2028 Olympic Games - July 2016

In addition, it is likely that one or more satellite villages would be required for an SEQ master plan that involved a regional distribution of venues. Given the likelihood of utilising competition venues in Sunshine Coast and Gold Coast, each of these areas would require satellite village accommodation as the travel times for athletes (by bus) will exceed the threshold 60 minutes from a Brisbane village location. As these are both major growth areas the respective Councils have agreed in principle to housing developments that will facilitate a village solution aligned with and supporting their legacy needs. Further analysis is required to establish accommodation availability in Toowoomba. Dependent on Games requirements, a satellite village may be required to accommodate athletes and team officials.

Figure 6 indicates the proposed location (or opportunities) for the key non-competition venues whose legacy opportunities are aligned with Olympic requirements. These were identified across the region in three Council areas.

Figure 6: Location of key non-competition facilities



3.3.7 Feasibility – venues perspective

Table 5: Summary of feasibility analysis - Master Plan and Venues

Requirement	Satisfaction of requirement	Comment
Capacity to meet competition venue requirements (Existing and planned investments considered)	◔	/ Based on existing and planned venues and selected use of temporary venues for showcasing purposes or where legacy has been identified, SEQ would have the majority of venues in place for a Games. Based on stakeholder engagement, additional venue requirements can be aligned with legacy needs in the region / There are also options to further utilise existing venues in Queensland and potentially interstate should legacy requirements change
Capacity to meet non-competition venue requirements (Existing and planned investments considered)	◑	/ Based on existing, planned and potential development programmes, preferred options have been identified for the key non-competition venues, with a view to supporting optimal legacy outcomes for the city and aligning with city building projects identified by key stakeholders. If the alignment with these long-term developments is not achieved, then alternate solutions could be developed to meet Games requirements

●	Full satisfaction of all Games requirements
◔	Meets the majority of Games requirements
◑ ◔	Meets Games requirements at a basic level / minimal level
○	Not able to meet Games requirements

3.4 Approach to Development of the Indicative Master Plan

For the purposes of this study, a multi-layered approach to a master plan framework has been used, ensuring there is a robust foundation for the future development of the SEQ Games Master Plan. The three components of the master plan framework are as follows:

- **Master plan principles**

The master plan principles articulate the 'pillars' of a successful master plan that ensure a strong legacy foundation (while meeting Games requirements).

- **Regional distribution model**

The regional distribution model defines the concept and approach for a model that achieves appropriate regional distribution across SEQ, ensuring distributed legacy benefits whilst maintaining a strong operational logic from a Games perspective.

- **Indicative Master Plan**

The Indicative Master Plan is a conceptual master plan which demonstrates that SEQ could host the Olympic Games. It interprets the master plan principles and the regional distribution model to deliver an optimal solution for each sport and venue. While this plan is indicative, it identifies venue sites which best meet the Games requirements based on technical criteria, showcasing opportunities and legacy.

3.4.1 Master Plan Principles

The master plan principles include six key 'pillars' which will ensure specific benefits and outcomes for the region:

Table 6: Master Plan Principles

Principles	Outcomes for SEQ
Principle 1 – Existing Facilities: Optimise the use of high quality existing venue infrastructure across the region and support the upgrading of facilities, creating legacy benefits	/ Leverages existing venues across the region / Existing venues with high legacy value have been identified and would be upgraded for the benefit of local communities and high-performance sport
Principle 2 – Transport Alignment: Locate venues and facilities to align with existing and planned transport infrastructure within each Council area and to support major initiatives for regional connectivity	/ All venues are located in close proximity to planned transport projects to ensure alignment for legacy and to support the acceleration of key projects that improve regional connectivity / Legacy venues will be well served by public transport and major roads
Principle 3 - Legacy: For venues and facilities that do not currently exist, ensure full alignment with planned projects and community needs to ensure strong legacy outcomes. Where no legacy can be defined, commit to developing temporary facilities for the Games	/ The Games would deliver much-needed sports infrastructure to communities across the region, including indoor community facilities in multiple Council areas / Minimal cost expenditure on temporary venues with investments focused on legacy
Principle 4 – Urban Development: Ensure alignment with key urban projects across the region to support / accelerate development	/ Alignment and potential acceleration of key SEQ projects
Principle 5 - Housing: Support the need for housing across the region including market housing, 'built to rent' housing, affordable housing and student housing	/ Ability to implement housing developments across the region / Alignment with major housing development and community facilities / Right-sized housing developments for regional centres / Potential to provide a mix of housing types to key growth areas / Support for ShapingSEQ - SEQ Regional Plan 2017 for housing densification
Principle 6 - Showcasing: Showcase the diverse and spectacular features of the SEQ region	/ Global exposure of the region / Tourism benefits

3.4.2 Regional Distribution Model

Building on the master plan principles and the analysis of existing, planned and additional venues, a master plan model emerges that achieves a broad distribution of venues and facilities.

This distribution is desirable not only from a legacy perspective but is essential to delivering the Games. The venue (and related transport) analysis clearly indicates that a Games master plan cannot be consolidated into Brisbane and will depend on regional infrastructure. The benefits of this model include:

- Alignment with priority regional transport projects
- Balancing the Games-time transport load across the proposed systems
- Alignment with existing accommodation hubs (hotel accommodation)
- Distribution of legacy benefits across the region

The resultant footprint for a proposed master plan envisages competition venues and facilities located in eight separate Council areas, while maintaining acceptable travel times and levels of service for athletes and other Games Family constituents.

The regional distribution model envisages three primary hubs as follows:

- Brisbane (main hub) with approximately 53% of competition venues, Olympic Village, IBC / MPC and spectator accommodation
- Sunshine Coast (secondary hub) with approximately 12% of competition venues, satellite Olympic Village and spectator accommodation
- Gold Coast (secondary hub) with approximately 12% of competition venues, satellite Olympic Village and spectator accommodation

Additional competition venues would potentially be located across five SEQ Council areas, with four of these (Logan, Ipswich, Redland and Moreton Bay) accessed from the main Olympic Village in Brisbane (as travel times from the Olympic Village in Brisbane will be within the 60-minute threshold).

As noted in section 3.3.2, it is expected that subject to suitable venues being available, there will be pre-Games training opportunities throughout SEQ, including Scenic Rim and Somerset.

Table 7: Regional distribution of Competition Venues

Location	Competition venues (overall 41)	
	Number of venues	% of overall venues
Brisbane	21	53%
Sunshine Coast	5	12%
Gold Coast	5	12%
Ipswich	2	5%
Toowoomba	2	5%
Redland	1	2%
Moreton Bay	1	2%
Logan	1	2%
Regional Football venues	3	7%

Table 8: Regional distribution of major non-competition facilities

Venue	Location
Olympic Village	Brisbane
IBC / MPC	Brisbane
Satellite Village 1	Gold Coast
Satellite Village 2	Sunshine Coast

3.4.3 Alignment of the Master Plan Regional Distribution Model with Transport

As previously noted, in parallel with the master plan, work has been undertaken on a priority transport infrastructure plan for 2031 and for 2041, the *Strategic Transport Road Map for SEQ*.

The alignment of these two streams of work has been fundamental to the study process and outcomes. The analysis that has underpinned development of the master plan relies on achievement of the 'advanced' 2031 transport scenario detailed in the *Strategic Transport Road Map for SEQ*. The 'advanced' scenario envisages various faster rail projects that contribute to meeting the SEQ Shared Transport Vision, that major centres will be ½ hour Smart Cities connected within a 45 minute Smart Region.

The key features of the Indicative Games Master Plan in respect of alignment with the transport strategy are as follows:

- Connects all venues with suitable public transport solutions
- Facilitates faster regional commute times for spectators and Games Family between major hubs (Brisbane, Gold Coast and Sunshine Coast)
- Supports enhanced road access to all venues and facilities

In these respects, the strategic selection of existing and planned venues and sites envisaged in the master plan regional distribution model responds to all transport infrastructure projects identified in the 'advanced' transport scenario for 2031.

The layering of the proposed locations of venues and facilities with the existing and planned transport infrastructure (in accordance with the 'advanced' scenario envisaged in the transport plan) creates a well-connected regional master plan.

Based on a preliminary concept for the location of athlete accommodation, the average travel time for athletes from the village to competition venues is approximately 19 minutes, as detailed in section 6.5.4. This is highly competitive in the context of recent Olympic bids.

Importantly, it should be noted the proposed siting of approximately 50% of competition venues and the primary non-competition facilities in Brisbane relies on the implementation of key priority transport infrastructure projects within the city including Cross River Rail, Brisbane Metro and the various busway and rail projects. The majority of competition venues and facilities are located along the key corridors serviced by these projects, creating an optimal alignment.

Based on a preliminary concept for the location of athlete accommodation, the average travel time for athletes from the village to competition venues is approximately 19 minutes. This is highly competitive in the context of recent Olympic bids

3.5 An Indicative Master Plan and Master Plan Scenarios

3.5.1 Overview

Based on the analysis of sport / venue requirements and the attributes of the region, the Indicative Master Plan is considered an optimal scenario at this early stage of analysis. However, a number of the proposed sport locations are indicative and could be arranged differently within the master plan footprint. This is particularly the case for indoor venues and some outdoor temporary venues.

3.5.2 Venue and Facility Locations

As defined previously, the venue audit identified existing and planned venues as well as legacy opportunities based on the following criteria:

- Ensuring venues meet IOC / IF requirements (technical and venue capacities)
- Identifying opportunities for new or upgraded facilities only when they are aligned with regional legacy aspirations

In addition, the following further criteria have been applied to enable the definition of venue locations in the Indicative Master Plan:

- Alignment with the six master plan principles and the principles of the regional distribution model
- Operational feasibility of the proposed venue location (in relation to city operations, transport, accommodation, ticket sales)
- Use of regional cities to accommodate preliminary rounds of team sports (Football, Basketball, Volleyball)
- Use of regional cities for shorter duration sports, providing satellite athlete accommodation during the competition period while allowing their return to the main Olympic Village so that all athletes can enjoy this unique experience including to attend the Ceremonies. It is noted that the IOC is currently advising against this as a cost cutting measure, however for now the opportunity is maintained.

3.5.3 Venue Exclusions

It should be noted that the installation of temporary Games overlay can require the exclusive occupation of Games venues for many weeks or months. Therefore, careful consideration needs to be given to the associated business disruptions and loss of revenue. Exclusive use timeframes should be minimised wherever this is a key factor (for example, exhibition centres) and venue rental costs should be budgeted appropriately.

Accordingly, and following consultation with stakeholders, several major venues in the SEQ region have not been included within the Indicative Master Plan to avoid disruption to major sport fixtures.

It should be noted that both football / rugby stadia will require minimal overlay given they are 'fit for purpose' for the proposed sports. Therefore, it should be possible to minimise the timeframe for exclusive use to avoid major disruption to anchor tenants. They would also not be required for the Paralympic Games.

3.5.4 Temporary Venues

The IOC encourages the use of temporary venues where there is no legacy for a permanent facility. This approach involves two primary applications, as follows:

1. Full temporary venues typically developed for outdoor sports including Triathlon, Road Cycling, Mountain Bike, Beach Volleyball, Basketball (3 x 3)
2. Temporary adaptation / expansion of permanent (existing or new) venues to meet the Games requirements (for example temporary seating, temporary structures for additional facilities)

The proposed master plan strategy optimises the implementation of these strategies and as such, it is expected that a significant amount of temporary infrastructure would be required for an SEQ Games, across the majority of venues and facilities, to ensure 'right-sized' venues are provided for the longer-term benefit of the SEQ communities.

The cost of temporary venues and adaptation / expansion of permanent venues is included in the Games operational budget.

In previous Games, there are examples of temporary indoor venues being constructed, at significant cost due to the scale and complexity of these venues. These include a 15,000 seat Basketball stadium and 5,000 seat Aquatic Centre (Water Polo) at London 2012, and a 10,000 seat Boxing venue at Rio 2016. With respect to the SEQ opportunity, it is recommended, wherever possible, to deliver a base legacy project and expand as per point two above, in preference to building a complete temporary indoor venue. This approach will ensure the investment for this type of expandable permanent venue will be maintained delivering a community legacy. The Coomera Indoor Sport Centre is a good example of a basic, cost effective shell which provided an excellent venue for the Gold Coast 2018 Commonwealth Games.

Only in the event that it becomes apparent that there is not a viable legacy or alternately that a specific showcasing strategy is to be served, a full temporary indoor venue would provide the most feasible option.

3.5.5 Venue Validation / Test Fits

A series of 'test fits' has been undertaken for the venue proposals in the Indicative Master Plan to validate that the venue and / or site can accommodate the IF / Games requirements. This has taken place for those venues or sites that appear to have some constraints. In addition, to support future planning, indoor venue templates have been developed to establish the required footprint for an Olympic size field of play and seating bowl. The potential legacy configuration for each has also been included.

3.5.6 Indicative Master Plan Venue Categorisation

The Indicative Master Plan has been assessed against the venue categorisation used by the IOC in its recent evaluations of Games bids. The exception is the category of 'legacy opportunity' which has been added, as the current study is being undertaken well in advance of the commencement of a formal bid process.

It should be noted that the IOC views such legacy opportunities as being inherently higher risk than projects which are planned (and have funding secured). Hence there is an important opportunity prior commencing the formal bid process, to convert these legacy opportunities into 'planned' projects. This would further strengthen the SEQ proposition from a 'win-ability' perspective.

Should it be possible to implement the actual planned projects or convert some or all of the legacy opportunities into planned venues prior to commencing the formal bid process, an SEQ project would compare favourably with other recent bid projects, including the successful bids of Rio 2016, Tokyo 2020 and Paris 2024.

Table 9 provides a summary of the categorisation of the 41 venues included in the Indicative Master Plan:

Table 9: Indicative Master Plan venue categorisation

Venue Category	2019 Venue status (41 venues required)		Recommended 2021 status (start of IOC Bid engagement)	
	Number of venues	% of overall venue footprint	Number of venues	% of overall venue footprint
Existing (including venues requiring upgrades to meet IOC / IF requirements)	25	60%	29	70%
Planned (to be built irrespective of a Games with initial planning underway)	4	10%	8	20%
Legacy opportunity (planning not currently underway but legacy need identified)	8	20%	-	-
Additional (Games dependent)	-	-	-	-
Temporary (venues which would typically be delivered primarily as temporary)	4	10%	4	10%

Table 10 indicates the potential comparative situation of these projects at bid stage:

Table 10: Venue categorisation comparison to recent bids

Venue Category	Rio 2016	Tokyo 2020	Paris 2024	SEQ (current)	SEQ (2021)*
Existing (including venues requiring upgrades to meet IOC / IF requirements)	53%	41%	73%	60%	70%
Planned (to be built irrespective of a Games with initial planning underway)	26%	29%	6%	30%	20%
Additional (Games dependent)					0%
Temporary (venues which would typically be delivered primarily as temporary)	21%	30%	21%	10%	10%**

* Based on implementation of current planned projects prior to the formal bid process commencing

** SEQ plan based on legacy venue priorities rather than temporary venues

3.5.7 Additional Sports

If the IOC continues to offer host cities the opportunity to include additional sports or disciplines (in addition to core programme sports), as is the case for Tokyo 2020, this will create further showcasing opportunities featuring sports which may generate significant interest and appeal for the local communities. In the case of Tokyo 2020, the additional sports include those which have specific youth appeal, including Surfing, Skateboarding and Sport Climbing. It is noted that these sports will be subject to evaluation post-Tokyo 2020. Future consideration should be given to their inclusion in an SEQ 2032 Games concept as either full programme or additional sports.

Within the current Indicative Master Plan, there are opportunities to include these sports without generating significant cost. With respect to Skateboarding and Sport Climbing, these sports could be added to the proposed temporary outdoor Basketball 3 x 3 venue to create an 'Olympic Urban Sports Park', activated throughout the Games with these youth oriented sports. Based on the sports programme used to inform the Indicative Master Plan, this outdoor venue would have spare capacity for these additional sports / events.

With respect to Surfing, there are clearly a range of opportunities to generate a highly accessible and spectacular showcase venue within SEQ at the Gold Coast or Sunshine Coast.

Subject to the IOC's future review these sports represent excellent opportunities for SEQ. Cost effective inclusion and integration could be achieved.

3.5.8 SEQ Indicative Master Plan 'Anchors'

The Indicative Master Plan identifies specific locations for several key facilities, being the Olympic Stadium, IBC / MPC and Olympic Village. As the 'anchor' venues of the Indicative Master Plan, the central location of these three facilities, and the proximity between them, are key to the positive experience for athletes, media and Games Family, particularly in relation to travel times. While these venue affinities do not constitute a formal IOC requirement, it is noted that the proposed locations for these facilities provide an optimal outcome for an SEQ Games Master Plan. Alternative options for these key facilities should ensure travel times and service levels for the key Games clients are maintained at the necessary level.

Clearly, they also provide a strong legacy opportunity as the needs for facilities and housing in these locations has been validated with the key stakeholders.

In other respects, it is noted that there is some flexibility in the location of venues and facilities. This is particularly the case with indoor and temporary venues.

The following table summarises the Indicative Master Plan considering optimal locations for each Olympic sport and discipline, using the current parameters and desired legacy outcomes identified through stakeholder consultation. Whilst clearly a regional master plan, with venues and major facilities in four zones across eight SEQ Council areas, it generates a highly compact plan within each zone, delivering an average athlete travel time of 19 minutes.

The Indicative Master Plan is based on a range of stated criteria and important planning principles, but is subject to further development based on stakeholder engagement. Should a bid proceed, further consultation and engagement with the Queensland Government, existing tenants and landholders would be required before specific sites could be confirmed.

Table 11: Indicative Master Plan

Olympic sport / discipline and / or facility	Venue status	Venue capacity
Brisbane		
Archery (Qualification)	Existing	1,000
Archery (Finals)	Temporary	4,000
Athletics (Track & Field), Ceremonies	Legacy Opportunity	55,000
Aquatics (Swimming, Artistic Swimming)	Planned	15,000
Aquatics (Diving, Water Polo)	Existing with p / w	5,000
Badminton	Existing	5,000
Basketball (prelims / finals)	Legacy Opportunity	15,000
Canoe-Kayak (Sprint)	Legacy Opportunity	14,000
Cycling (BMX)	Existing with p / w	5,000
Cycling (Track)	Existing	5,000
Fencing	Existing	6,000
Football (finals)	Existing	52,000
Gymnastics	Legacy Opportunity	10,000
Hockey	Existing with p / w	18,000
Judo	Legacy Opportunity	8,000
Modern Pentathlon	Existing	20,000
Rowing	Legacy Opportunity	14,000
Rugby	Existing	52,000
Sailing	Existing	5,000
Shooting	Existing with p / w	3000
Table Tennis	Existing	6,000
Taekwondo	Existing	6,000
Tennis	Existing with p / w	7,500 5,000 3,000
Volleyball	Existing	13,000
Wrestling	Legacy Opportunity	8,000
Olympic Village	Legacy Opportunity	
International Broadcast Centre	Legacy Opportunity	
Main Press Centre	Legacy Opportunity	
Media Village 1	Legacy Opportunity	
Media Village 2	Legacy Opportunity	

Olympic sport / discipline and / or facility	Venue status		Venue capacity
Moreton Bay			
Equestrian		Existing with p / w	12,000
Redland			
Canoe-Kayak (Slalom)		Legacy Opportunity	8,000
Gold Coast			
Athletics (Race Walks)		Temporary	2,500
Athletics (Marathon)		Temporary	2,500
Basketball (prelims)		Existing	6,000
Football (prelims)		Existing	27,400
Golf		Existing	15,000
Handball		Existing	10,000
Athlete Satellite Village		Legacy Opportunity	

Olympic sport / discipline and / or facility	Venue status		Venue capacity
Sunshine Coast			
Aquatics (Swimming Marathon)		Existing	2,500
Cycling (Road)		Temporary	2,500
Football (prelims)		Existing with p / w	20,000
Triathlon		Temporary	2,500
Volleyball (prelims)		Planned	6,000
Volleyball (Beach)		Temporary	12,000
Athlete Satellite Village		Legacy Opportunity	

Olympic sport / discipline and / or facility	Venue status		Venue capacity
Ipswich			
Football (prelims)	●	Planned	20,000
Weightlifting	●	Legacy Opportunity	5,000
Toowoomba			
Football (prelims)	●	Planned	20,000
Cycling (Mountain Bike)	●	Existing with p / w	10,000
Logan			
Boxing	●	Legacy Opportunity	8,000
Townsville			
Football (prelims)	●	Existing	25,000
Interstate Football Venues			
Football (prelims)	●	Existing	45,000
Football (prelims)	●	Existing	30,000

3.5.9 Master Plan Scenarios

In addition to the Indicative Master Plan, additional master plan scenarios have been considered to demonstrate alternative approaches which inform the overall feasibility analysis. These scenarios respond to a range of issues and criteria including:

- Increasing state and national engagement through the relocation of competition venues interstate
- Decreasing reliance on venue legacy investments.

Based on the analysis of master plan options, it is clear that the current Indicative Master Plan optimises SEQ legacy outcomes with respect to infrastructure (venues, facilities and transport). A range of alternatives could reduce the venue legacy capital programme and still provide a compelling Games proposition. None of these options are feasible without essential transport infrastructure investment (legacy driven) or accommodation investment (Olympic Village and Media Village(s)).

It is recommended that further analysis be undertaken based on the principles of community and sport legacy to prioritise and validate projects. Adjustments to the Indicative Master Plan should be identified through this process.

Figure 7: Indicative Master Plan

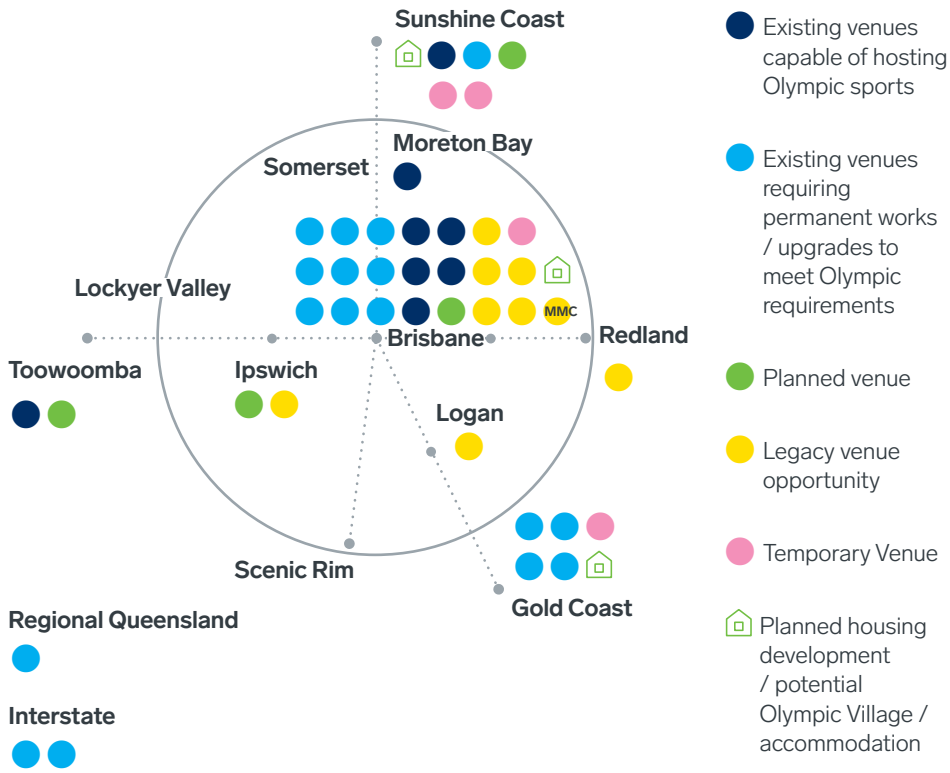


Table 12: Summary of feasibility analysis - Master Plan and Venues

Requirement	Satisfaction of requirement	Comment
Cohesive master plan aligned to long-term needs of the city and supporting excellent Games (Existing and planned investments considered)	●	/ The Indicative Master Plan developed to test feasibility provides a compelling regional Games proposition with opportunities to engage host cities beyond SEQ if this is required. The Indicative Master Plan also reinforces significant legacy urban development / infrastructure investment and development positioning the Games as a positive catalyser / accelerant
Support for ongoing professional sport competition (Existing and planned investments considered)	●	/ The Indicative Master Plan demonstrates that a balanced approach to professional sports, (particularly AFL, Basketball, Cricket, Netball, Rugby League) is achievable which does not unduly disrupt competition arrangements during the preparation for the Games
Alignment of Games venue requirements with long-term needs of the host community (Planned and legacy opportunity investments considered)	●	/ All venue development is aligned with long-term plans and no venue, other than selected temporary venues, will be built for the Games. There is no known Games capital expenditure requirement. There is a need to align upgrade programmes for existing venues with Games scheduling, however, the majority of this investment will be required regardless of the Games

●	Full satisfaction of all Games requirements
◕	Meets the majority of Games requirements
◑ ◔	Meets Games requirements at a basic level / minimal level
◔	Not able to meet Games requirements

3.6 Cost Analysis

Based on the Indicative Master Plan, a high-level analysis has been undertaken to provide benchmark costings for capital projects related to venues and major non-competition facilities (comprising existing venue upgrades, as well as construction costs related to planned venues and potential legacy opportunities).

All required investments in sporting infrastructure and other facilities are aligned with legacy planning and the broader objectives of the region. The principle of the capital programme is to ensure all projects are required irrespective of the Games and as such are considered legacy projects with allocated legacy budget. Further work is required to develop funding and operating models to ensure sustainable venues.

Approximately ten existing venues which require upgrading will leave appropriate legacies for community and high-performance sport.

Additional legacy opportunities have been identified which align with the needs of specific local communities and / or the future needs for major stadia.

Facilities including the Olympic and Media Villages and the IBC / MPC can be aligned with developments and sites, attracting significant private sector funding.

3.7 Next Steps

Based on the development of the Indicative Master Plan and extensive analysis regarding legacy alignment, it is evident that SEQ has the potential to develop a compelling proposition that will generate significant benefits for regional infrastructure and provide a strong SEQ Games Master Plan for an Olympic and Paralympic bid.

In respect of the key questions established at the commencement of the study:

1. **Additional infrastructure requirements and 'order of magnitude' costs**
   Ignoring transport infrastructure investments (which are addressed in a separate report) and assuming all the 'planned' venues identified in this study are developed, SEQ would require the additional development of eight of the total requirement of 41 venues (approximately 20%). These include major stadia and indoor venues, plus the Olympic Village(s) and the IBC / MPC.
2. **SEQ infrastructure capacity to undertake the Olympic Games**
   SEQ would need to develop additional transport, venues, housing and key non-competition facilities in order to conduct the Olympic Games. However, the majority of this is either already in progress or already planned, and all additional developments are aligned with regional priorities and needs.
3. **Feasibility and 'win-ability' of the proposition**
   An SEQ Games Master Plan developed in accordance with the regional distribution model would feature good travel times for athletes, strong regional showcasing and broadcast appeal and, subject to the implementation of all transport infrastructure, convenient movement for Games Family and spectator groups.
4. **Alignment of the Indicative Master Plan with legacy infrastructure requirements**
   Clearly the Indicative Master Plan is legacy driven. The legacy value of each project has been established, resulting in no Games-specific incremental capital spend. It would, however, entail an acceleration of project implementation to meet the 2032 timelines.

While it is acknowledged that a decision to bid has not been taken, there are some key principles that should endure during future stages of the analysis. Although the master plan principles and regional distribution model do not specifically identify venues, there are several 'anchors' to the Indicative Master Plan which are considered essential to a successful plan

The following summarises the master plan anchors:

- **Transport infrastructure**

The implementation of the 'advanced' 2031 scenario presented in the *Strategic Transport Road Map for SEQ* should be considered the baseline requirement to support an Olympic Games bid, aligned with the findings of this report. This will require an acceleration of project delivery and increased spending for transport projects relative to current trends to ensure the necessary infrastructure is delivered by 2031.

- **Olympic Village site**

The study has identified a feasible and optimal proposal for development of the Olympic Village. In the interim, until a clear decision is made, it is recommended that any development plans are implemented in a way which will not preclude the implementation of a 40-hectare village on the site. In addition, the legacy opportunities and alignment with an Olympic Village should be further explored.

- **IBC / MPC and major venue sites**

The study has identified potential locations for the IBC / MPC, the Olympic Stadium and major indoor venues. Additional planning should be undertaken to further define the alignment between the optimal legacy use and Games requirements, potentially allowing for interim development that does not compromise the Games solution.

- **Legacy opportunities and planned projects**

As far as practicable, the current 'planned' projects should be implemented, with adequate provisioning for a potential future Games. The legacy opportunities as defined should be further developed with a view to securing funding commitments and where possible implementation prior to 2025.

Other Enabling Infrastructure

4.1 Technology

4.1.1 Introduction

Technology is a critical component in the successful delivery of the Olympic Games as it:

- enables functional area (FA) operations across all venues
- provides critical services to support all Games stakeholders including athletes and teams, broadcast, press and photographers and international federations
- connects the global Olympic spectator community, in the venues and around the world

Various technology solutions will be required across all competition and non-competition venues – both temporary and permanent – to support the above, comprising elements such as:

- broadcast services (video and audio)
- data services
- fixed and mobile voice services
- radio network

Underpinning the technology solutions for the Olympic Games will be a sophisticated range of fixed and mobile telecommunications networks, with optical fibre cabling infrastructure being the key component effectively connecting everything together (particularly venues and the 'outside world').

The most critical technology solutions are required at the competition venues, as well as key non-competition venues such as the IBC / MPC and the Olympic Village.

In the case of the London 2012 Olympic Games, more than 5,500 km of optical fibre was installed across 94 venues. For the Gold Coast 2018 Commonwealth Games, it is estimated that over 430 km of optical fibre was installed specifically to service Games venues.

The provision and use of technology and telecommunications solutions for events such as the Olympic Games and Commonwealth Games have evolved significantly over the past 20 years. For some events the solutions have been based on the standard products provided by the telecommunications provider, while in other cases custom / bespoke services dedicated to the needs of the event have been utilised.

It is also increasingly common for integrated private networks to be implemented to meet the needs of the event, including broadcast services (video and audio), data and voice (telephony) services. Most recently during the Gold Coast 2018 Commonwealth Games, the approach adopted by Optus involved a private fibre network effectively installed across SEQ. As a result, there were no third parties or carrier exchanges between venues or key points of interconnect. This design meant the network was isolated from outside influences and disruptions, except for the necessary external connectivity (internet).

Notwithstanding this, the constant in recent events has been the dependency on optical fibre cabling to deliver the services ultimately required.

It is difficult to predict the technology and telecommunications solutions that will be used in 2030-2032 given that the technology and telecommunications landscape continues to evolve at a rapid rate. It can be anticipated that there will be an increased use of wireless telecommunications services, particularly given the increasing capacity and speed that 5G and its subsequent iterations will offer. For now, however, it can be assumed that fixed line telecommunications services will continue to be used for critical services (including broadcast services) given its higher level of guaranteed service, resilience and capacity.

The core component required in the provision of the telecommunications infrastructure to each of the venues is optical fibre cabling

4.1.2 Telecommunications Infrastructure

Key design principles will be necessary to support the technology and telecommunications solutions for the Olympic Games. Each key venue will need to be serviced by at least two fully geographically diverse and fully redundant optical fibre cables installed in underground conduits. These cables should follow fully geographically diverse paths from their origin to the final destination(s) in the venue. Preferably the geographical diversity will also include different telecommunications exchanges servicing each venue wherever possible.

Other venues will typically not require the same level of infrastructure, and many of the 'smaller' non-competition venues will be unlikely to require optical fibre cabling infrastructure to support technology solutions, perhaps relying upon broadband internet or wireless internet services delivered over a 4G / 5G mobile network.

It is difficult to provide specifications in relation to optical fibre cabling within each venue at this point in time. The actual requirements can vary depending on the technology and telecommunications services ultimately used and will therefore be guided by the applicable telecommunications provider and approach taken by the Organising Committee. However, it is important to note that the cost differential between the different capacities of optical fibre cabling is only a small portion of the total cost of installing the optical fibre cabling; hence, where early decisions might be required, higher capacity cabling will provide more resilience going forward.

The following commentary does not consider the implementation of 'disruptive technologies' which could obviate the need for cable connections.

4.1.3 Types of Services Required

This section outlines, at a high level, the key technology solutions needed to support the successful delivery of the Olympic Games.

4.1.3.1 Host Broadcast Services

The services required to support the broadcasting of the Olympic Games are a critical component of the technology solution.

For previous Olympic Games, Olympic Broadcasting Services (OBS) have required the Organising Committee to provide a dark / passive optical fibre solution (consistent with the resilient design principles identified above), effectively connecting each of the venues to the IBC. OBS have then used this network solution to deploy their own broadcast transmission services.

Given the ongoing evolution of technologies used to transmit broadcast services, it is not clear how OBS may evolve the transmission of broadcast services for future Olympic Games however one initiative which OBS is now developing is to retain significant host broadcast facilities in its Madrid headquarters thereby reducing the host city demands including the size of the IBC. This will yield significant venue related and operational savings for future host cities and may be evidenced in Tokyo 2020 requiring further evaluation for SEQ. With more and more broadcasters seeking to have remote operations at the Olympic Games (increased production of their programming in their home country), OBS is moving its network towards IP-based technology for the transport of broadcast services (as was the case for the PyeongChang 2018 Olympic Winter Games). It can be expected that broadcasters will continue to undertake more remote operations given the reduced costs involved, greater flexibility and technologies available.

It can therefore be assumed that optical fibre cabling will be required to support the transmission of broadcast services from venues to the IBC. Satellite transmissions are very unlikely to replace fixed line solutions given the large number of feeds generated and risks involved in satellite transmissions.

It should be noted that if there is a requirement for a dark / passive optical fibre network to be provided to OBS for the 2032 event, particularly in the Australian context (as it was for the UK), these arrangements will need to be negotiated as telecommunications providers typically do not offer dark / passive optical fibre solutions. Again, this is an evolving area.

It should also be noted that some types of broadcast services (such as uncompressed services typically preferred by OBS) are impacted by distance limitations. That is, certain direct fibre services can only be provided over a maximum main link (exchange to exchange) distance. IP based services can remove this issue, which will be an important consideration for Olympic Games in SEQ given the geographical spread of venues.

In addition to the broadcast services for the key venues, there will be a number of additional locations where consideration will need to be given to broadcast solutions, for example:

- Locations determined by broadcasters to support their own programming and coverage production requirements (such as host studios or team specific venues)
- Feeds for 'beauty cameras'. That is scenic background locations used by OBS and broadcasters
- Feeds to potentially support the transmission of long-range broadcast feeds for road-based venues (marathon, road cycling)

It is also worth noting that for the PyeongChang 2018 Olympic Winter Games, OBS established an International Transport Network connecting the IBC to six international points-of-presence (PoPs), located in Seoul, Singapore, Los Angeles, New York, London and Frankfurt, to enable faster and more reliable distribution of broadcast signals to broadcasters. Each PoP was connected to the IBC using both terrestrial and submarine cables around the globe. The network had an overall capacity of 400 Gbps. Given the expected increased dependency on such services, it will be critical to ensure there are sufficient international traffic gateways to support the content generated by the Olympic Games.

It is noted that from 2020 there will be an international broadband submarine cable in Sunshine Coast.

4.1.3.2 Data Services

To support a range of Olympic Games operations, data services will need to be provided to each venue. The critical nature of some of the services, such as the transmission of results, data and timing, commentary information services (CIS) and remote CIS, means that a highly resilient and secure networking solution will be required.

In addition, there is a range of internet services (cabled and wireless) required to support broadcasters, written and photographic press, as well as a variety of other stakeholders operating at venues.

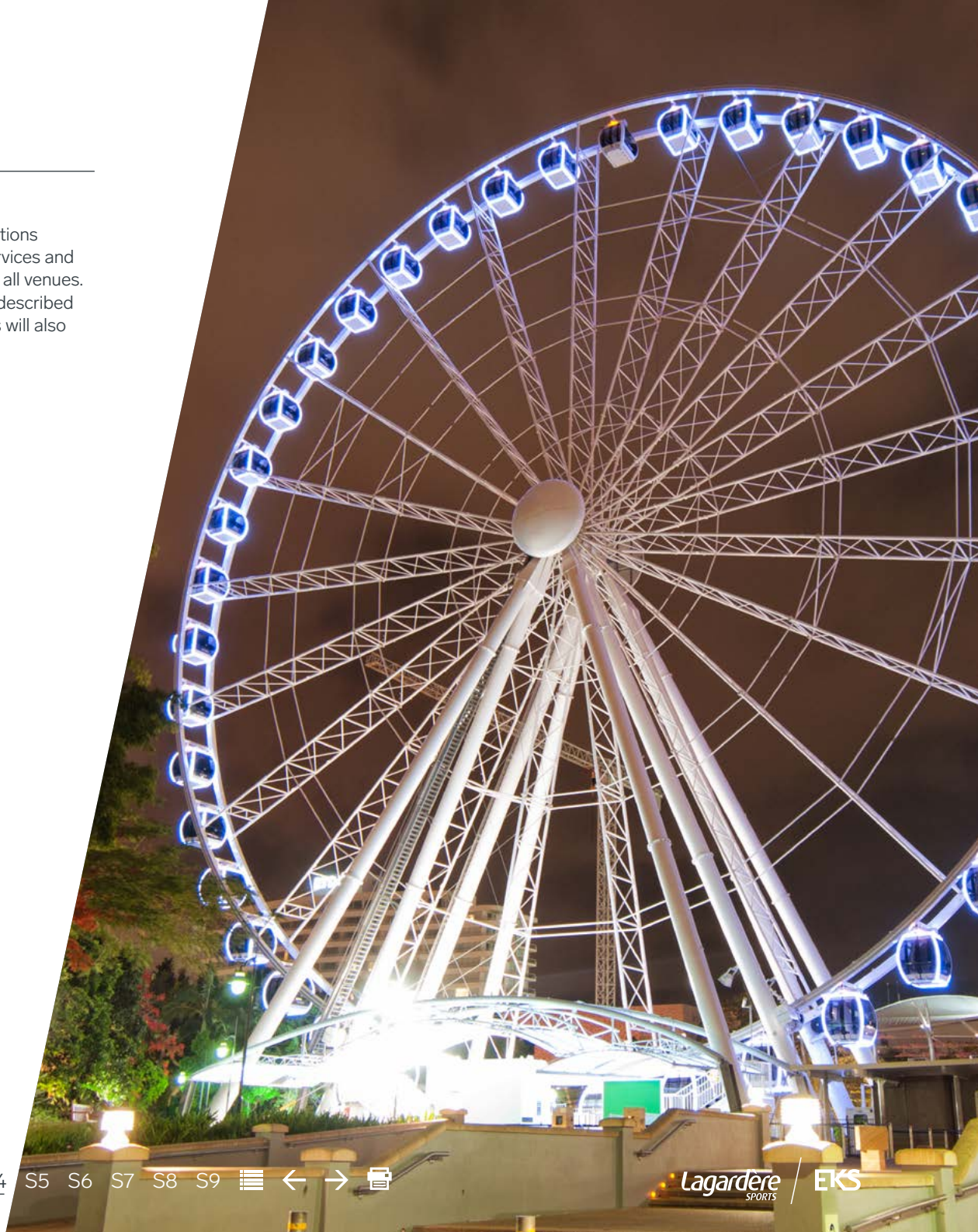
Services such as CCTV security vision, audio visual systems and two-way radio networks may also have a dependency on connectivity provided by data services.

The nature of the data services will vary between venues, from sophisticated networks at venues such as the IBC and MPC or main stadium, through to more basic services at training venues and minor non-competition facilities.

The provision of data services will utilise optical fibre cabling infrastructure provided to each of the venues (particularly the key venues).

4.1.3.3 Voice Services

A range of general telecommunications needs, such as fixed telephone services and mobile will also be required across all venues. Consistent with the data services described above, the nature of voice services will also vary between venues.



4.1.4 Assessment of SEQ Venues

Based on a desktop review of the SEQ Indicative Master Plan and the proposed location for each of the key venues, it is likely that the vast majority of existing venues will require additional fibre infrastructure to meet the requirements of the Olympic Games. Potentially the only exceptions will be those venues used for Gold Coast 2018 Commonwealth Games.

Without a detailed feasibility study (which would involve engagement with telecommunications providers, who are often not in a position to provide or share information) into the existing services provided at each venue, it is not possible to accurately determine the level of infrastructure that may be required.

In an Australian context, for the Sydney 2000 Olympic Games and both Gold Coast 2018 Commonwealth Games and the Melbourne 2006 Commonwealth Games, virtually all venues were required to have some level of infrastructure upgrade. In the case of Melbourne 2006 this included the Melbourne Cricket Ground (despite having hosted the Sydney 2000 Olympic football preliminaries and regular international events) and the newly constructed Docklands Stadium which was the Melbourne base for the Seven Network.

However, the cost of the optical fibre infrastructure upgrades is relatively low. The cost of upgrades for Melbourne 2006 was approximately AUD1.2 million and for Gold Coast 2018 Commonwealth Games was AUD2.3 million. Further analysis is required to ascertain the likely Games related costs, however, the benchmarks of the Gold Coast 2018 Commonwealth Games are proportionately relevant and have been assumed in Games operating budgeting.

It is worth noting that the above costs were the approximate amounts paid by the Organising Committee to the telecommunications provider responsible for the infrastructure upgrading works. It is understood that the telecommunications providers for both events would have expended additional costs on top of the contribution from the Organising Committees (from which an ongoing commercial benefit could be derived). The same principle should apply in the case of any works required for the 2032 Olympic Games.

4.1.5 Key Considerations for an SEQ Bid

The Olympic Games does provide the host city a unique opportunity to build a lasting legacy in new and improved fixed and mobile telecommunications infrastructure and services.

As part of the provision of technology and telecommunications services for the Olympic Games, there may be legacy opportunities for individual venues, whereby part (or whole) of a solution provided for the event can remain in place following the completion of the event.

As part of the initial planning for the provision of the telecommunications services, the appointed telecommunications partner (and any other telecommunications service providers) would be expected to work closely with the Organising Committee to determine the specific requirements of each venue and the potential solutions that can be provided.

The following are issues to consider in the planning or development of any venues that might be used for the Games:

- In the development of any new venues or refurbishment of existing venues, consideration should always be given to the provision of telecommunications infrastructure. As a minimum, diverse cable pathways should be installed in accordance with Australian telecommunication standards to enable the future provision of optical fibre cabling. The cost of introducing such infrastructure during the design and construction phase will be significantly less than retrospectively installing it.
  It should be noted that the location of the services for an Olympic Games event may be different to the 'business as usual' location. This is due to the extensive overlay that is required to support the event, usually necessitating alternate or out of venue spaces to be used. Therefore, optical fibre services would be extended on a temporary basis to meet the specific requirements of the event (to spaces such as the Telecommunications or Technology Equipment Room (TER) and the Broadcast Technology Operations Centre (BTOC) within the broadcast compound)
- In the case of any property development to be used for the Olympic Village, NBN fibre access should be provisioned into each apartment as part of the base development works, similar to the approach adopted for the property development used for Gold Coast 2018 Commonwealth Games. In the case of Gold Coast 2018 Commonwealth Games the NBN services were used to provide internet services to athletes and team officials, with additional optical fibre cabling installed to support operational and broadcast requirements

4.1.6 Mobile Telecommunications Coverage

It is difficult to predict exactly how mobile telecommunications might be used in 2032, however, it is safe to assume that reliance on mobile telecommunications will continue to grow.

Therefore, it will be critical that the mobile telecommunications network at all Olympic venues and other key urban and public domain areas is capable of meeting the anticipated demand generated by the Olympic Games.

For previous Olympic Games, the Organising Committee has facilitated the formation of a 'joint operators group' comprising all local mobile service operators. The purpose of this group has been to secure the cooperation of the operators with the objective of enhancing coverage and capacity of the public mobile networks within and around the sites and venues to be used for the Olympic Games. To a large degree, it is understood that the majority of enhancements made in support of the Olympic Games, whether temporary or permanent, have been undertaken at the cost of the mobile network operators rather than the Organising Committee or host government. The official telecommunications partner plays a key role in supporting this, particularly given the enhanced reputational issues that exist for them as a sponsor and key service provider.

Where temporary or permanent mobile telecommunications infrastructure is required, it is likely that there may be a dependency on the optical fibre network to the venue in order to provide the connectivity to the broader mobile network.

Given the one-off demands that the Olympic Games will generate, it can be expected that existing networks will need some level of upgrading. Notwithstanding this, consideration to 'future-proofing' of venues by the mobile telephony providers can be factored into the new development or refurbishment of venues (should they elect to do so, which would be dependent on the known future use of venues).

It will be critical that the mobile telecommunications network at all Olympic venues and other key urban and public domain areas is capable of meeting the anticipated demand generated by the Olympic Games

Energy is a critical element in delivering a successful Olympic and Paralympic Games, requiring suitable capacity, resiliency and redundancy at all Olympic facilities

4.2 Energy

4.2.1 Introduction

For every facility, including competition venues and key non-competition facilities, the demands generated by the Olympic and Paralympic Games will likely exceed normal operations due to the expanded overlay of Broadcast, Technology and other technical facilities unique to a Games, along with an expanded spectator capacity in the case of many sport facilities.

In addition, there are specific issues related to energy redundancy, primarily driven by the need for event continuation in the case of an outage, to ensure the completion of events and continuation of global broadcasting. These unique requirements and policies may not be relevant in the course of normal sporting events within the city / region or at a specific venue, and as such there is potential reinforcement of the infrastructure, and supplementary temporary systems which may be required.

With respect to the provision of a suitable energy solution, the IOC outlines the following in the Host City Contract Contractual obligations:

"A secure, reliable and resilient energy supply is required to protect against any disruptions that would negatively impact the athletes and competitions and / or the operations of major stakeholders (broadcast, press, technology) as well as the spectators, the viewing audiences and the global image of the Games and the Host City.

Legacy and sustainability should be integral to any consideration for new energy infrastructure projects at the outset of Games planning and preparation, to ensure that any upgrades provide lasting benefits.

For the energy area, key success factors include:

- *A dedicated OCOG energy area to manage technical implementation and operational planning;*
- *A Games Energy Council composed of all relevant stakeholders, including Host Country Authorities and energy agency representatives;*
- *Risk mitigation and redundancy measures that meet energy supply reliability criteria; and*
- *Temporary power overlay and event continuation solutions to agreed service levels and to the required 'power on' dates"*

It is critical that the government energy agencies and / or energy providers within the city / region are fully engaged (in recent Games these entities have become sponsors and partners to the Games Organising Committee). As noted by the IOC, legacy and sustainability is a key element in delivering an appropriate outcome. This may include the development of infrastructure which can generate long-term legacies to improve the local network and reliability of energy supply to the city / region, as has been the case in previous Games.

Where no legacy can be identified, solutions can be provided through a balance of permanent and temporary energy sources, though consideration should be given to environmental sustainability issues in providing generated power.

4.2.2 Energy Planning Assumptions

In providing an initial analysis of the Games project, a number of assumptions have been made to establish a baseline from which to measure capability and potential infrastructure development. These assumptions are based on information developed through the 2024 Olympic and Paralympic Bid process, precedents from previous Games, and liaison with the IOC and temporary energy suppliers.

It is noted that the Games energy requirements, in the spirit of the New Norms, are being analysed through the planning processes for Tokyo 2020 and Paris 2024, and as such the expected standards may change through the outcomes from these Games.

4.2.2.1 Energy Policy

An Energy Policy will need to be developed and agreed between the Host City / Region and the IOC. This policy will determine the requirement for energy provisions and policies relating to redundancy and resiliency within the utility network and / or temporary power solutions. The policies will also be shaped by a number of factors including the agreements with key stakeholders including Host Broadcast (OBS).

For the purposes of this study, policies have been assumed based on precedents from recent Games (particularly London 2012) where data has been provided and is aligned with IOC expectations for service levels to key stakeholders.

Assumed policies for both utility and temporary power are outlined as follows:

4.2.2.2 Utility Power

For the purposes of this study, assumptions have been made related to the supply of high quality, filtered utility power for Games-critical broadcast, technology and sport functions, as follows:

General

- Utility power would be the primary source of broadcast, technical and domestic power
- The utility feed would be distributed as a dual feed with Feed A (domestic power) and Feed B (broadcast and technical power)
- A separate transformer would be provided at or near the venue to allow for a dedicated power feed to broadcast areas
- Single generators will act as redundant power source for domestic power

Broadcast Areas

- Utility power would be the primary source of broadcast power. Twin generators will act as redundant power source (UPS will provide security to broadcast power during changeover from utility to generator)
- A separate transformer would be provided at or near the venue to allow for a dedicated power feed to broadcast areas

Technology, Timing and Scoring (TSR) and On-Venue results (OVR)

- Utility power would be the primary source of technology power
- A single generator would act as redundant power source for technology and technology associated functional areas
- UPS would provide protection to technology power during changeover from utility to generator

Field of Play (FOP) Lighting

- Utility power would be the primary source for FOP lighting
- A single generator would act as redundant power source for 50% of FOP lightning
- UPS would provide protection to FOP lightning power during changeover from utility to generator

IBC

- For the IBC, two separate utility feeds would be provided for the entire load of the facility
- Back-up generators would be provided for the full power load of the facility
- UPS units would be provided for all Games -critical OBS equipment and RHB areas as required

In the case of utility power the demand will be significant. As a benchmark from previous Games, the utility power provisions for the Vancouver 2010 Olympic Winter Games was approximately 150 MVA and for the London 2012 Olympic Games approximately 220 MVA, with almost 150 MVA at the London Olympic Park alone.

In both of the aforementioned Games, significant investments were made in the existing networks including additional feeders and distribution systems around key facilities, in order to meet the IOC requirements for resiliency and redundancy.

4.2.2.3 Temporary Power

Temporary power is generally used to supplement the provision of utility power at a venue or site though in some cases may act as the prime source of energy, usually in the case of remote sites where suitable utility power is not available.

Temporary power is a significant component of any Games and is generally delivered through the Venue Overlay department. The utilisation of temporary generated power will be based on the following principles:

- Generators would be the prime power source at temporary venues or at sites where sufficient permanent power does not exist and there is no legacy requirement for additional permanent infrastructure
- Generators would be used as prime power source for Opening and Closing Ceremonies
- Generators (with UPS) would be used as back-up to Games-critical systems related to the FOP including broadcast, technology and FOP lighting at all competition venues
- Generators would be used as back-up for other event-critical systems including security, doping control and accreditation at competition venues and key non-competition facilities
- Generators would be used as back-up for the entire power load at the IBC / MPC and Olympic Village

As a benchmark, for the London 2012 Olympic Games approximately 170 MVA of temporary power was provided across the Games footprint, with over 300 generators installed. The majority of these generators were on stand-by providing redundancy as indicated above. Approximately 50 MVA of this overall capacity was servicing the IBC / MPC and the Olympic Stadium at London Olympic Park.

4.2.3 Energy Demand and SEQ Capacity / Infrastructure Requirements

An assumed energy demand has been developed based on data from London 2012, including original design capacity for each venue and facility and rationalised based on utilisation. It should be noted that these figures are high level estimates and based on available data, and provide a guide to overall consumption. On this basis, it has been estimated that approximately 150 – 200 MVA of energy would be required across the venue footprint. Of this total capacity, approximately 30% will be required for the three primary facilities which constitute the highest demand as follows:

- Olympic Stadium
- Olympic and Paralympic Village
- IBC / MPC

It is noted that in addition to the overall gross demand, these facilities also require the most significant amount of redundancy and resiliency, impacting both the provision of utility power and the space required at the venues / facilities for temporary power.

With the support of Energy Queensland Limited (Energex network distribution area), an analysis of all competition venues and major non-competition venues has been undertaken, using the estimated power demands. This has been evaluated against current supply at proposed venue locations, and proximity / ability to achieve suitable capacity through incremental infrastructure development, including additional substations and power distribution. Through this initial analysis, the following has been surmised:

- SEQ has excess power plant capacity, and is connected to the national grid, enabling suitable capacity for the Games
- The existing power systems in SEQ will require incremental infrastructure development in some locations, primarily related to feeders and localised distribution system

Specifically, and based on the Indicative Master Plan with proposed venue locations, Energex has noted the following:

Energy Queensland has a ten-year load forecast for each substation in the SEQ network. Using this forecast, the three major loads of the Olympic Stadium, the Athletes Village and IBC / MPC can be supplied from the existing substations in the vicinity, albeit with some network upgrades required to deliver the level of anticipated network redundancy. There will be some logistical difficulties in constructing the volume of 11kV feeders through existing roadways. Projected load growth may change over time, meaning that further upstream network augmentation to connect loads of this magnitude could be required if significant load growth were to occur in the proposed areas prior to the connection of the Games venues.

It is noted that the proposed location of these three key facilities in the Indicative Master Plan is well aligned with major infrastructure and as such limits the need for excessive incremental works. In assessing alternative master plan proposals, the availability of infrastructure and proximity to major distribution facilities should be considered and potential costs for additional infrastructure should be fully analysed to ensure feasibility and legacy value.

4.3 Feasibility – Enabling Infrastructure Perspective

Table 13: Summary of feasibility analysis - Other Enabling Infrastructure

Requirement	Satisfaction of requirement	Comment
Provision of an up-to-date technology backbone connecting all venues (Existing investments considered – no confirmed planned information available at this time due to market / commercial sensitivity)	◑	/ Based on the existing telecommunications industry framework and likely future investments by the private sector, the telecommunications backbone required for the Games will be met. Beyond this base level, some enhancement to the fibre optic network may be required and if this is achieved then this feasibility factor could be upgraded to full satisfaction of Games requirements
Provision of resilient energy supply (Existing and planned investments considered along with Games specific temporary and back-up power augmentation)	●	/ With the usual Games-specific temporary and back-up power augmentation, the SEQ energy infrastructure will meet Games requirements

●	Full satisfaction of all Games requirements
◕	Meets the majority of Games requirements
◑ ◔	Meets Games requirements at a basic level / minimal level
◔	Not able to meet Games requirements

Legacy and Sustainability

The Games have been used by previous hosts to substantially upgrade regulation, legislation and practices and to change behaviours in host communities to align with sustainability objectives. These factors will be considered in the Queensland Government led economic assessment

This report has focused on long-term strategic urban and infrastructure initiatives which the Games can accelerate and which, in turn, could reinforce a Games bid and enable the ultimate hosting of the Games. The legacy and sustainability focus is therefore centred on these two elements, although the Games presents a significantly broader range of opportunities as has been documented in other reports, for example: Inspired by 2012: the legacy from the London 2012 Olympic and Paralympic Games: a joint UK Government and Mayor of London report: third annual report, Summer 2015; Local Plan 2015 to 2031 (London Legacy Development Corporation); London 2012 legacy: creating a more sustainable future for London and beyond (Jennifer Daothong and David Stubbs); London 2012 Post Games Sustainability Report (LOCOG).

5.1 Legacy – Infrastructure and Urban Development

The proposed master plan framework for a potential Games bid has been carefully aligned with the long-term planning objectives of the SEQ region with respect to the following:

- Transport and mobility infrastructure and systems
- Housing
- Sporting venues and facilities
- Urban regeneration opportunities

The approach has included a thorough analysis of the local and regional planning documents which define the proposed vision for the region, and specifically identify the key infrastructure projects which support the delivery of this vision.

A master plan model has been developed which ensures that any proposed sporting venue or facility is aligned with a defined legacy need and located on designated priority transport corridors, irrespective of the Games. This delivers a legacy-driven approach, ensuring investments in infrastructure are not simply diverted into Games-specific projects; rather, planned infrastructure is potentially accelerated to meet the timeline of the Games.

In addition to the established regional infrastructure priorities and projects, a number of 'city-building' projects have also been identified. These include sites within SEQ with opportunities for high impact urban developments that could enhance the environment and support community building, employment, public amenity, housing and other long-term economic benefits.

Historically, Olympic and Paralympic Games host cities have used the Games to deliver city-changing projects which have contributed to economic growth and provided extensive social benefits. These projects can be the most complex to deliver, but can also provide the most impactful and transformational legacy benefits.

Barcelona 1992

The 1992 Olympic and Paralympic Games delivered significant urban legacies to the city of Barcelona, most notably the redevelopment of the waterfront district, a largely dilapidated industrial precinct characterised by industry, warehousing and rail corridors. The Games project involved the complete regeneration of the waterfront, including the development of the Olympic Village, three kilometres of public beaches and promenades and a revitalised port / marina district. This waterfront district remains one of the most attractive and popular tourist destinations in Barcelona.

In addition to the waterfront, Barcelona leveraged the Games to deliver a ring road, improved airport amenities and various other urban enhancements and capacity building initiatives. Perhaps the most significant consequence of the transformational projects was the repositioning of Barcelona as a highly attractive visitor destination.

Sydney 2000

The Olympic and Paralympic Games in Sydney 2000 were a driving force in dealing with one of the most polluted and problematic sites in the city. Homebush Bay was an industrial wasteland comprising heavy industrial plants and factories, abattoirs and brick manufacturing. It had become a dumping ground for much of Sydney's household and industrial waste. Whilst some areas surrounding Homebush Bay had been remediated, the Sydney Olympic Games was the catalyst for what became one of the largest urban remediation projects in Australian history. The legacy of community sporting facilities, residential, parklands and retail / commercial facilities continues to grow and Homebush Bay is now a vibrant and successful city precinct. It is now considered one of the primary urban centres in the city and continues to attract significant investment.

London 2012

The Olympic Games of 2012 were a vehicle for the regeneration of East London. The Queen Elizabeth Park project involved the remediation of approximately 100 hectares of land at Stratford and the development of sporting facilities, a transport hub, housing, institutional and retail / commercial facilities. The direct impact of this, beyond the urban remediation and creation of public green space, has been job creation in and around the Park and much-needed affordable housing.

SEQ Urban Development Opportunities

The venue audit undertaken during this study revealed legacy development opportunities with the potential to provide facilities including the Main Stadium (Ceremonies and Athletics), Olympic Village, media village(s) and IBC / MPC. An assessment of opportunities, centred around the alignment with key urban development strategies, revealed a number of specific sites preferred by key stakeholders in the Queensland Government and / or Councils.

Potential sites have been identified and the Games provide an opportunity to unlock the potential of these sites, reform existing land use where desirable and provide increased public space and amenity; and deliver a significant housing development such as an Olympic Village to provide further opportunities to meet SEQ's increasing accommodation requirements.

5.2 Transport

Some of the more recent Olympic and Paralympic Games have generated remarkable transport legacies, in particular the implementation of public transport systems which have transformed the way people live, work and play, and are connected to their cities and regions. These impacts have been most profound in cities which had poor existing public transport infrastructure, and where the Games concept required the implementation of much-needed legacy projects which otherwise would not have attracted sufficient public funding without the Olympic imperative.

Athens 2004

The Olympic and Paralympic Games in Athens in 2004 completely transformed the transport situation in the city. Through the implementation of an extensive public transport network (23 km of new metro, new suburban rail network, new tram system) and the construction of a 65 km city ring road, finalisation of a vital motorway and upgrade of key arterials, there is now a high level of public transport utilisation by the residents of Athens (35%) and a significant decrease in the traffic congestion within the city limits. In addition to these benefits, a new international airport was constructed, allowing the previous airport on the waterfront to be developed into housing and parklands.

Rio 2016

The Olympic and Paralympic Games in Rio in 2016 also left a significant transport legacy, with over 50 km of Bus Rapid Transit (BRT) and nearly doubling the capacity of the metro implemented by the time of the Games. Previously, the city had minimal public transport, with a low percentage of the city's 11 million people having access to affordable, safe and clean public transport. Previously, the city had minimal public transport, with a low percentage of the city's 11 million people having access to affordable, safe and clean public transport. The Games master plan strategically linked four distinct areas of the city to ensure long-term connectivity through the development of a 'ring' of public transport (BRT, rail, metro) connecting the city's major zones. For the large majority of residents who live in the outer suburbs, their ability to work in the city has vastly improved because of the Games.

The road map outlined in the CoMSEQ *Strategic Transport Road Map for SEQ* report defines a strategy which, if catalysed through the Games, would leave a profound and trans-generational legacy. The impacts are discussed in the associated *Strategic Transport Road Map for SEQ* .

5.3 Sport Facilities

A key challenge with any Games project is the ability to determine the most compelling legacy strategy for the sport competition and training venues. If considered properly, this can leave a powerful legacy for all generations and can encourage healthy and active lifestyles through access to sport facilities.

The venue footprint for the Olympic and Paralympic Games is 41 venues across 28 sports, many with multiple disciplines. These venues include outdoor stadia, indoor arenas and a range of sport-specific venues.

The successful delivery of the venue programme requires a clear understanding of legacy and sustainability, as well as creative implementation of the venue programme.

Development options for venues include:

- The construction of major sports stadia / arenas based on the needs of professional sports and other major event aspirations
- The upgrading / renovation of established and successful sport facilities
- The development of new community-based facilities which can be temporarily adapted to meet the requirements of an Olympic and Paralympic Games
- The development of venues for high performance sport, linked to regional or national sporting bodies
- Use of temporary venues where no legacy is defined
- Re-purposing facilities such as exhibition centres or film studios to provide Games venues

Each venue should be considered with respect to the above to ensure a positive and sustainable venue concept.

In addition to optimising the use of existing facilities, the master plan framework intentionally looks to deliver a number of legacies across the region with respect to sport facilities, as discussed in section 3 of this report. The objective is to ensure that any permanent venue development is founded in meeting long-term community needs, avoiding any development of permanent venues specifically for the Games. The analysis to date indicates that SEQ should be able to meet this objective.

Based on the venue audit review and discussions with stakeholders, it is apparent that SEQ faces challenges with respect to sporting infrastructure, including:

- SEQ's status as a key destination for major events and professional sporting clubs, requiring further investments in the renewal of major sporting infrastructure
- Rapid growth and changing demographics requiring investments in community sport facilities (indoor and outdoor)
- Ageing infrastructure from previous major events requiring re-purposing or upgrading based on current trends and demands of the sport community, including Queensland high performance athletes

The Olympic and Paralympic Games could provide the catalyst to address these issues and deliver positive outcomes.

Community Sport Facilities and Legacies

The venue audit identified a deficit of indoor facilities and gymnasiums in SEQ, particularly community facilities. This represents an opportunity to enhance the availability of recreational space for youth and grass roots level sport, as well as developing venues capable of hosting more significant sporting events.

As a relevant benchmark, two major indoor community facilities were developed at Coomera and Carrara for the Gold Coast 2018 Commonwealth Games. These facilities were designed primarily as community centres with open court space for a range of sports, whilst allowing for the temporary bump-in of seating and other installations to meet the needs of the Games. The impact of constructing these facilities has been significant with City of Gold Coast advising that use of the facilities has exceeded patronage targets. As a model which delivers the most appropriate legacy, whilst still providing an excellent Games venue, this appears to be an optimal solution to consider. In assessing the needs for additional indoor space, it is estimated that approximately 40 multi-sport court spaces could be delivered across multiple SEQ Councils where there is a need for such facilities based on a growing population and youth activation across a broad range of indoor sports such as Basketball, Netball, Volleyball, Gymnastics and Badminton.

Whilst further business planning is required to ensure sustainability, the two recent developments at the Gold Coast delivered excellent Games venues and are highly utilised by local communities and also hosting regional and international events post-Games. During the six months of post-Games operations until the end of 2018, the venues hosted more than 100 events, and functions with over 300,000 patronage visits have been recorded.[55]

Major Facility Investments and Legacies

With respect to major facilities, SEQ and particularly Brisbane, has several excellent major sport facilities. These include the Gabba and Suncorp Stadium, both of which are receiving investment to ensure their currency and ability to attract major national and international events can be sustained. As with other major capital cities, Brisbane is also conducting facility gap analysis and developing plans for new major venues, including a world class downtown arena.

It is becoming more common to see major venues being used as engines for economic growth, cultural and urban development. A local example of this is the Brisbane Live proposal. Brisbane Live proposes a new entertainment precinct, including a 17,000-seat arena built above the existing Roma Street rail lines. The project would spur the creation of a new urban development within the precinct with prime public transport connectivity.

The Indicative Master Plan recognises these initiatives and proposes major stadia developments as advised by key stakeholders. These focus on a new downtown arena project and a new 'boutique' stadium which could be temporarily expanded for an Olympic and Paralympic Games. On the basis of feedback received by stakeholders during extensive consultations, both of these projects are consistent with the legacy requirements for future inner-city venues to support professional sport and entertainment. A broader strategy of civic integration and alignment with community needs is important in ensuring these facilities provide valid community assets.

[55] City of Gold Coast provisional data

5.4 Legacy – Regional Stadiums

A number of regional Councils identified the need for smaller regional stadiums which provide for local or state sporting competitions, and also provide a venue for concerts and entertainment events in regional centres. These venues may also allow for effective integration of community level outdoor fields and spaces.

With respect to the Olympic Games, these facilities would provide appropriate venues for Football (preliminaries) using temporary seats to deliver capacities of up to 20,000 (to satisfy FIFA expectations). The use of distributed Football competition to incorporate regional and national centres is a common and successful model from previous Olympic Games. Ultimately the use of these venues for the Games will depend entirely on their legacy development plan. If not available, alternate master plan scenarios will accommodate sports identified for these venues.

5.5 Temporary Expansion and Games Overlay

There is a perception that the Olympic and Paralympic Games require large permanent stadia to be built across a city or region, resulting in under-utilised facilities post Games. The IOC is acutely aware of the requirement for legacy and strongly promotes the notion of building 'right-sized' facilities.

The key is to design legacy facilities in a way that allows for a temporary expansion and post-Games contraction, particularly through the use of temporary seating, but also through devices such as temporary spaces and lighting. This is known as Games overlay, drawing on an industry that has become increasingly sophisticated in being able to deliver cost-effective solutions for expansion of modest legacy facilities into major event venues, or even to provide full temporary solutions if necessary. When properly considered, the strategic use of Games overlay can effectively close the gap between the legacy needs and Games requirements, yielding positive and sustainable venue stock.

5.6 Legacy – Environment

Environment is a key pillar of the Olympic Movement and it is critical that the Games project does not adversely impact the natural environment and is fully aligned with policies and projects designed to protect and enhance the natural environment. Many previous Olympic Games have had a profound and positive impact on the natural environment, and there are key areas where the Games project can deliver measurable environmental outcomes, including:

- Remediation of brownfields sites
- Increase in public green space
- Establishing new benchmarks in environmental design
- Increased public transport utilisation

The Indicative Master Plan attempts to minimise the environmental footprint, with key projects which can deliver positive outcomes and are aligned with city projects which are already planned or envisaged irrespective of the Games. Alignment with these projects could potentially support the delivery of revitalised urban green space across key strategic projects.

Green Building Standards

Environmentally Sustainable Design (ESD) and the implementation of green building standards for Olympic projects at the Sydney 2000 Games was an important initiative. The environmental features embedded into the designs through legislation became the new benchmark for public projects post Sydney 2000 and has left a generation of buildings which reflect world-leading thinking in this area.

The ability to take this to another level, showcasing a response to climate and environment with an entirely new generation of public projects would develop expertise and thought leadership in the sustainable design and construction industry. This in turn will provide long-term benefits for the state and region, showcasing world-leading design and technology. With its sub-tropical / tropical environment, Queensland has developed a unique and effective methodology to respond to the climatic extremes, mostly through passive techniques, which could have worldwide relevance.

5.7 Legacy - Sport Tourism

The Olympic and Paralympic Games would further enhance Queensland's reputation as a host for high-level sport competition, improving its ability to attract future events with significant tourism benefits to the local economy. Tourism and Events Queensland has identified the following priorities in relation to the hosting of events:

- Maintain an events calendar that is a high value sustainable asset for Queensland that drives superior returns against investment objectives
- Attract and secure major events to grow the Queensland economy and support jobs
- Support Queensland destinations through the Queensland Destination Events Program
- Support the Queensland business events sector through the Business Events Program
- Event value optimisation to drive incremental event and tourism outcomes
- Ensure the value of event legacy benefits from the Gold Coast 2018 Commonwealth Games are maximised

The hosting of the Olympic and Paralympic Games would support the delivery of these outcomes, particularly when assessing the precedents of other host cities. The associated benefits include exposure to world leaders and the substantial media contingent in the event sector.

5.8 Legacy – IOC-Defined Areas

5.8.1 Athletes, Sport and Active Society

The Olympic and Paralympic Games will provide new and upgraded sport and training venues throughout Queensland. Rigorous legacy planning by all levels of government and the private sector will ensure venues have clear business plans that articulate the ongoing sporting and other uses for the venue, including high performance sport, development and grass roots sports and community needs.

Staging the Olympic and Paralympic Games in Queensland will help develop and promote all Olympic and Paralympic sports. Properly managed, the opportunity created by the Olympic and Paralympic Games can promote sport participation and healthy lifestyle through increased facility access and other related programmes.

Hosting the Games in Australia will showcase Australian athletes on their 'home turf' in the lead-up to and during the Games, reinforcing effective role models and Australia's sporting heritage.

5.8.2 Human Talent and Innovation

Through training and apprenticeship programmes, Games-related projects can contribute not only to job creation, but also to upskilling of the workforce, particularly young workers. The Games can therefore assist in attracting a new generation of youth to careers in trades, engineering, architecture, sports operations and planning.

There is the opportunity to build on the legacy of the Gold Coast 2018 Commonwealth Games university partnership to provide internships and apprenticeships to local students, potentially expanding the programme to more universities and across more projects.

The Olympic and Paralympic Games would showcase Queensland's major project delivery capability on the global stage, demonstrating best practices in project management, sustainable design and construction, and encouraging investment in Queensland and Queensland companies.

Building on Queensland's strong culture of volunteerism, the Games will allow the community to introduce a new generation to the benefits of volunteer service, increasing the rates of volunteerism and community engagement.

Games reporting and communications could increase public awareness and support for environmental and sustainability programmes throughout the region.

5.8.3 Economic Development and Governance

The direct economic benefits of the infrastructure projects identified to support the Games are profound, particularly in respect of job creation in the construction and tourism industries. Promotion of entrepreneurship through the Organising Committee and government procurement programmes will inform and encourage local suppliers and resources, building on the successful Gold Coast 2018 Commonwealth Games programme.

Good governance and procurement practices that incorporate sustainability and efficiency will be advanced. Queensland could also utilise the opportunity to showcase equal opportunity and progressive labour diversity practices in the Games Organising Committee.

5.8.4 Culture and Identity

The global mass media opportunity presented by the Games will promote Queensland's destination appeal, showcasing the richness of the state's natural beauty and the talent of its inhabitants.

The Torch Relay, volunteer programme and countless other community participation activities present opportunities to share the Games throughout the region, building unity, defining what it means to be a Queenslander and binding the Queensland and Olympic values.

Building on Queensland's strong culture of volunteerism, the Games will allow the community to introduce a new generation to the benefits of volunteer service, increasing the rates of volunteerism and community engagement

5.8.5 Social Development Through Sport

A broad range of social policies can be reinforced through the Games with tangible and effective deliverables through parallel legacy programmes. Examples of such initiatives delivered by other host cities and which are relevant to SEQ include:

- The opportunity to enhance the region's stock of affordable housing through Games catalysing initiatives including in relation to the Olympic / Paralympic Village and Media Village(s)
- New transport infrastructure will improve accessibility, enabling more of the Queensland population to participate more fully in life in the region
- A commitment to inclusive design principles for all new and upgraded venues and urban domains will open up sport participation to a wider population
- The growing impact of the Paralympic Games to remove barriers and create opportunity is a broadly defined and proven development direction for SEQ and Queensland

5.8.6 Feasibility – Legacy and Sustainability Perspective

Requirement	Satisfaction of requirement	Comment
Games contribute to SEQ long-term development	●	/ The Games present a significant opportunity to catalyse and accelerate established urban development and infrastructure investment requirements needed to accommodate future population growth in SEQ. If appropriately programmed and funded in the near term, an SEQ Games could redefine the relationship between the Games and legacy as did Barcelona in 1992
Reinforce broad based sustainability policies, practices and specific initiatives	●	/ The current sustainability framework in SEQ can be manifestly reinforced by the Games through showcasing and establishing new standards. Priority precinct development could result in significant regeneration and provision of enhanced public amenity and public spaces including helping reverse greenspace reduction trends. Housing development is another specific area where inclusive policies could deliver affordable housing solutions / The alignment of the Games with investment in public transport infrastructure across the region and a modal shift from car to public transport would be of major environmental and lifestyle benefit to all in SEQ and beyond
Enhanced sport, recreation, wellness and culture opportunity	●	/ The Indicative Master Plan reinforces the development of community sport and recreation facilities across the region. Likewise, the initial outline planning for a new entertainment and cultural precinct in central Brisbane would provide SEQ with the next 'Expo 88' effect, something which is highly regarded and sought after across a broad range of stakeholders and the community
Promotion of Brisbane as a world city and SEQ as a globally competitive region	●	/ Managed effectively, the alignment of SEQ's development agenda, driven by population growth and the promotional impacts of the Olympic and Paralympic Games, will accelerate / global recognition and competitiveness like few other initiatives can. It is anticipated that this will result in short and long term benefits

Olympic Games Transport Concept

A primary focus of this report is on technical analysis to determine if SEQ 'can' host an Olympic Games, assessing Games requirements against current or future capacities

Within this context the Olympic Games Transport Concept has been developed with close reference to the parallel People Mass Movement Study and subsequent *SEQ Regional Strategic Transport Road Map* report that identifies key projects, some of which are planned and funded; some are included within existing local, state or national government plans or strategies but not yet committed; and some 'advanced' projects that are have been identified to deliver CoMSEQ's Regional Transport vision of a '½ hour Smart City' and a 45 minute region. The projects are collectively intended to achieve CoMSEQ's plan for SEQ to have world class connectivity that will promote liveability, and to ensure SEQ remains resilient over the next 25 years.

As noted throughout this Transport Concept, many of the projects in the *SEQ Regional Strategic Transport Road Map* are required to meet Games requirements, and / or to respond to the transport demand that is created by the Games, providing acceptable service levels.

Additionally, the Olympic Games Transport Concept has intentionally and extensively detailed the requirements and recommended governance and operational considerations for the delivery of an Olympic Games transport operation. The objective has been to not only assess SEQ's capacity to host an Olympic Games, but also to inform the proposed future Queensland Government economic assessment, by providing Department of Transport and Main Roads (TMR) sufficient detail to inform their expected analysis of the operation of the Games transport system detailed in this report.

6.1 Games Transport Strategy

Games transport is a complex and costly task, which delivers highly demanding services and service levels prescribed in considerable detail by the International Olympic Committee (IOC) for each group of clients. The client groups may be broadly classified in two sets:

- Games Family (GF), which includes athletes (TA), technical officials (TF), media and broadcasters (TM), Olympic Family (T1, T2, T3) and marketing partners (MP)
- Spectators and workforce (SW)

Mobility of the general public (GP) is also affected by Games transport operations, which generate considerable traffic in the road network of the host city / region and increase demand significantly in the related public transport systems. Thus, the general public may also be considered as a client group.

The level of detail used by the IOC to define the service levels for each client group reflects the critical role of Games transport in successful Games delivery. While the delivery model for Games transport may be unique for each host city / region, it leverages the significant experience and practices accumulated from previous Games adjusted to the characteristics of the particular city / region.

To optimise the Games transport solutions, it is necessary to define a clear and robust Olympic Games transport strategy with agreed principals among all involved clients, including the IOC, the city's / region's transport authorities and operators, and the Olympic Games Organising Committee (OC).

A set of strategic principles for the Games transport is proposed below. In addition to targeting service excellence in full compliance with the IOC requirements, a key motivation in defining these principles is feasibility of delivery within SEQ's transport environment and within a reasonable level of expenditure. It is noted that service levels, including transport service levels, are currently under revision by the IOC as noted in section 6.5.2 as part of the New Norm. Substantial revisions may result in changes of the strategic principles proposed below.

During the Games, all Games and non-Games clients will benefit from safe, reliable, efficient and comfortable transport services. All clients will enjoy an overall premium client experience that will be delivered under the highest sustainability standards

Proposed Games Transport strategic principles for SEQ

This Games transport vision will leverage the Games Indicative Master Plan, which was developed in tandem with the Games transport solution, placing particular emphasis on alignment of the venue footprint with the SEQ's existing and planned transport infrastructure for 2032. The alignment of the Indicative Master Plan, and its associated regional approach to the distribution of the venues, is critical in the development of the transport principles. As detailed in the following analysis there are system capacity challenges that need to be addressed, and the regional distribution is necessary to manage the transport demands. The strategy assumes terms of transport infrastructure and a number of projects included in the advanced scenario of the *SEQ Regional Strategic Transport Road Map* for the period 2018 – 2031 will be critical in delivering the Games. These include new road projects in the Brisbane area, upgrades of significant regional road corridors, the new Brisbane Metro, Cross River Rail, the light rail in Sunshine Coast, the extension of the light rail in Gold Coast and the faster rail system to Ipswich, Sunshine Coast and Gold Coast.

All Brisbane venues may be accessed by major road links, and most by comfortable cycleways and pedestrian footpaths. Furthermore, most Brisbane venues are served by one or more sustainable public transport modes (Brisbane Metro, faster rail, Queensland Rail Citytrain). Given the proximity of the venues to the city centre, walking and cycling will also be promoted as key modes for accessing the venues. Similar transport connectivity will be available by 2032 within the other Games-related Council areas: The venues located in these Council areas will be accessed by major road links, cycleways, pedestrian footpaths and mass transport systems (Queensland Rail, faster rail and light rail; the latter for the Sunshine Coast and Gold Coast venues). Concerning intra-Council travel, by 2032 the transport corridors connecting the Games-related Council areas to the west, north coast, south coast and east, will feature upgraded roads and faster rail connectivity. Therefore, Games Family and spectators and workforce will enjoy comfortable travel times and service levels.

Based on the Indicative Master Plan and the SEQ transport environment in year 2032, Games-specific transport systems and services will be developed to achieve the objectives presented in Table 15. The mobility concepts also presented in this table may set the foundation for achieving these objectives.

Table 15: Proposed Games transport strategic principles and general mobility concepts

Proposed transport strategic principles (What to achieve)		General mobility concepts (How to achieve it)	Applicable to		
			GF[1]	SW[2]	GP[3]
For all transport users	Frequent, reliable, safe and secure, comfortable, accessible, innovative, user friendly	Short travel times for all Games clients	✓	✓	
		Zero car access to venues		✓	
		Deliver targeted demand management campaigns, provide effective transport information	✓	✓	✓
		Enhance client experience	✓	✓	✓
		Design dedicated, client-focused systems	✓		
		Adopt innovative mobility solutions (shared mobility, Mobility as a Service (MaaS))	✓		
		Design special traffic and parking measures to streamline access to venues	✓	✓	
		Enhance accessibility in all facilities and modes	✓	✓	✓
		Minimise impact on business as usual			✓

Proposed transport strategic principles (What to achieve)		General mobility concepts (How to achieve it)	Applicable to		
			GF[1]	SW[2]	GP[3]
For infrastructure and transport systems	Integrated, cost-effective, innovative, resilient	Zero additional transport infrastructure beyond the proposed investments for 2032	✓	✓	
		Facilitate convenient inter-modal interchanges to minimise transfer times		✓	✓
		Leverage Intelligent Management Systems for improved traffic and fleet management	✓	✓	✓
		Develop robust contingency plans to address emergency situations	✓	✓	✓
For the environment	Sustainable	Promote walking and cycling as significant transport modes for the Games		✓	✓
		Minimise carbon emissions related to transport infrastructure construction	✓	✓	✓
		Maximise green transport for Games Family, spectators and workforce, leveraging Queensland's plans to promote electromobility	✓	✓	

1 GF – Games Family

2 SW – Spectators and workforce

3 GP – General public

Many of the strategic principles of Table 15 were applied successfully during the 2018 Gold Coast Commonwealth Games. This supports the feasibility of adopting the related principles and their fit in the SEQ environment.

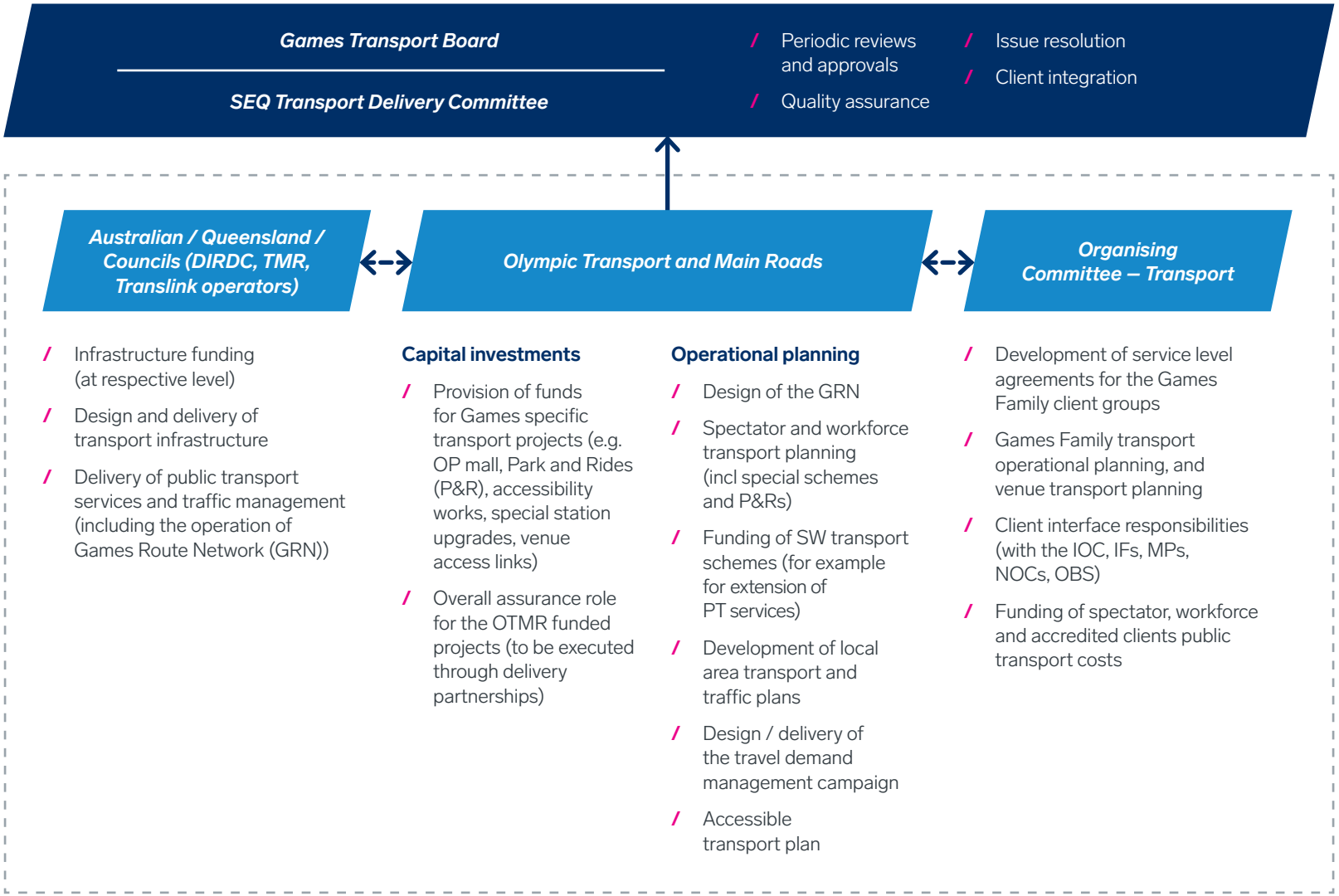
6.2 SEQ Olympic Games Transport Governance

To address the challenges of Games transport planning and delivery, it will be necessary to develop an effective and efficient transport governance scheme that leverages the strengths and established mechanisms of the local transport environment, as well as the valuable experience from the 2018 Gold Coast Commonwealth Games and lessons learnt from previous Olympic Games, including Sydney 2000.

This governance scheme should capitalise on core competencies and proven business practices of existing state authorities and Councils. However, the specialised transport related tasks, which require a focused approach and particular expertise, may be assigned to a special purpose state delivery authority (Olympic TMR or OTMR) led by TMR (Department of Transport and Main Roads), and to the Transport Division of the Organising Committee. Integration both at decision-making and at planning / implementation levels should be built into the governance scheme through dedicated structures and other appropriate arrangements.

The effective transport governance arrangements for the Gold Coast 2018 Commonwealth Games provide strong evidence that it is feasible for SEQ to manage this complex project successfully. This section contains initial proposals for Games transport governance that meet all the requirements identified above. These proposals may serve as the basis for further development of a governance scheme that could achieve Games transport excellence.

Figure 8: Initial concept for Games transport governance



The role of the existing transport authorities

TMR and the Commonwealth Department of Infrastructure, Regional Development and Cities (DIRDC) may be the main clients responsible for planning and delivery of the majority of transport infrastructure projects of section 6.4 with well-defined roles and responsibilities. Typically, DIRDC is responsible for federal road and rail funding and development, while TMR assumes a leading role for project delivery of all state-related infrastructure, including state roads, rail, light rail and transport facilities.

TransLink may assume the responsibility of delivering workforce and spectator (public) transport by bus, ferry, light rail and rail, the latter in close collaboration with Queensland Rail. Special bus services (Park and Ride shuttles and venue shuttles) may also be delivered by TransLink as required. Service planning, however, may be performed by OTMR, based on the forecasted spectator and workforce demand, taking into account the estimated background demand. Appropriate contractual arrangements will be put in place between OTMR, TMR and the delivery partners.

TMR will also deliver traffic management along state-controlled roads, in close collaboration with local councils. Councils will be responsible for planning and delivering traffic and parking management in the council-controlled local road network, as well as planning and delivery of Local Area Traffic and Transport Plans (LATTP) in collaboration with OTMR.

The Olympic Transport and Main Roads (OTMR) authority

Since Olympic transport is of much higher complexity than transport for the Gold Coast 2018 Commonwealth Games, it is likely to be necessary to establish a special agency, to provide leadership in carrying out specialised transport tasks that are mostly state-related. A somewhat similar agency (Olympic Road and Transport Authority (ORTA)) was set up for Sydney 2000, although ORTA had more far-reaching responsibilities than those proposed below. The Transport Division of the Olympic Delivery Authority (ODA) of London 2012 is another successful benchmark and may be more relevant.

OTMR may ensure the delivery of the transport strategy for the Games (see section 6.1), and the development of the Olympic Transport Plan in collaboration with all relevant clients. It may also safeguard the legacy of all Games transport projects and ensure the inclusion of sustainability and accessibility requirements in all aspects of Games transport.

The potential tasks to be allocated to OTMR comprise delivery of targeted transport infrastructure, as well as significant operational planning tasks. In terms of special infrastructure, OTMR may be responsible for funding and project assurance of special Games transport projects. These projects will be detailed upon OTMR's establishment. In terms of operational planning, OTMR's responsibilities may include:

- Design of the Games Route Network (GRN) within Brisbane and in the SEQ region
- Spectator and workforce transport planning, ranging from demand and transport modelling to the design of special transport systems
- Development of integrated public transport and traffic plans in close collaboration with local councils for the local area around venues, including the design of 'last mile' routes
- Design of the Travel Demand Management strategy
- Design and delivery of the Transport Coordination Centre (TCC)
- Development of the accessibility transport plan

The OTMR could be a special division of TMR. The alternative option of an independent authority (much like ODA in London 2012 or ORTA in Sydney 2000) should also be examined, taking into consideration the broader Games governance scheme.

The Transport Division of the OC

The Transport Division of the OC will be responsible for the provision of safe, reliable, efficient and comfortable transport services to the Games Family. It will also act as the key client liaison with the IOC, IFs, NOCs, OBS and MPs. The Games Family transport services will be based on robust and inclusive service level agreements to be developed for all constituent groups. In addition to the operational planning of Games Family bus and fleet transport services, the Transport Division of the OC will play a key role in the design of transport arrangements within and in the immediate vicinity of venue secure perimeters, while it will liaise with OTMR and the councils for the broader area.

Integration mechanisms

Dedicated structures are necessary to ensure integration both at decision making and at planning and implementation levels (see Figure 8). The successful experience from the Gold Coast 2018 Commonwealth Games, with the TrESC (Transport Executive Steering Committee) and ITT (Integrated Transport Task force) may be leveraged for the Olympic Games.

At the decision-making level, the transport governance scheme should ensure oversight from the Australian Government, the Queensland Government, and the SEQ Councils. Thus, the establishment of two integration and coordination structures may be considered:

- The Games Transport Board will guarantee the delivery of all elements of the transport programme. It will set the vision and provide direction and assurance, approve plans and milestones and examine funding requests
- The SEQ Transport Delivery Committee will integrate transport clients delivering infrastructure or planning operations in SEQ. It will ensure the provision of resources for the execution of the transport programme, validate operational planning, and resolve escalated issues

At the planning / implementation level, customised integration schemes for capital investments and for operational planning may be developed. For capital investments that are not funded by OTMR, OTMR may appoint project coordinators to participate in the project boards and monitor progress. For projects that are funded by OTMR, project leaders will be appointed responsible for developing project specifications, ensuring project approval and managing clients, including selected delivery partners.

For operational planning related tasks, Technical Working Groups (TWGs) with appropriate client representation may be established. TWG will be responsible for delivering the technical scope of the related tasks, ensuring interface management and client buy-in.

The Transport Division of the OC will be responsible for the provision of safe, reliable, efficient and comfortable transport services to the Games Family

Figure 9: Concepts for ensuring integration of transport governance

Integration at decision making level

Games Transport Board

- Comprises all relevant Australian, Queensland and Council agencies and key delivery partners
- Provides assurance for the delivery of transport programme
- Ensures integration at the highest level
- Examines funding requests and approves plans
- Resolves escalated issues

SEQ Transport Delivery Committee

- Integrates all transport clients delivering infrastructure or planning Olympic operations in SEQ
- Validates operational planning for all transport services
- Resolves issues escalated at its level
- Ensures risk mitigation for transport planning and delivery

Integration at planning / delivery level

Capital Investments

OTMR funded projects

- Project leader from OTMR will be responsible for project development, approval, client management
- Management of project delivery by transport delivery partner(s)
- Standard project management practices implemented for the infrastructure projects

Projects not funded by OTMR

- OTMR will appoint project coordinators to participate in project boards ensuring full OTMR updates of project delivery and any issues that may affect Olympic Transport

Operational Planning

- Establishment of Technical Working Groups (TWGs) with representation of:
  - OTMR
  - SEQ2032 OC Transport Division
  - Councils
  - Transport delivery partners
- TWGs will be responsible for delivering technical scope
- Indicative TWGs to be established are:
  - Spectator and workforce transport
  - Games Family transport
  - Venue transport
  - GRN
  - Modelling
  - Local Area Traffic and Transport Plans (LATTP)
  - Travel Demand Management (TDM)
  - TCC

6.3 Airport

The feasibility of serving Games arrivals and departures as per IOC requirements depends on:

- The ability of SEQ airport(s) to serve the surge of Games demand, considering key airport infrastructure elements (such as passenger terminal, runways, apron)
- The extent of the airport international and national flight connectivity
- The connectivity to the region and the SEQ cities via efficient public transport and road networks

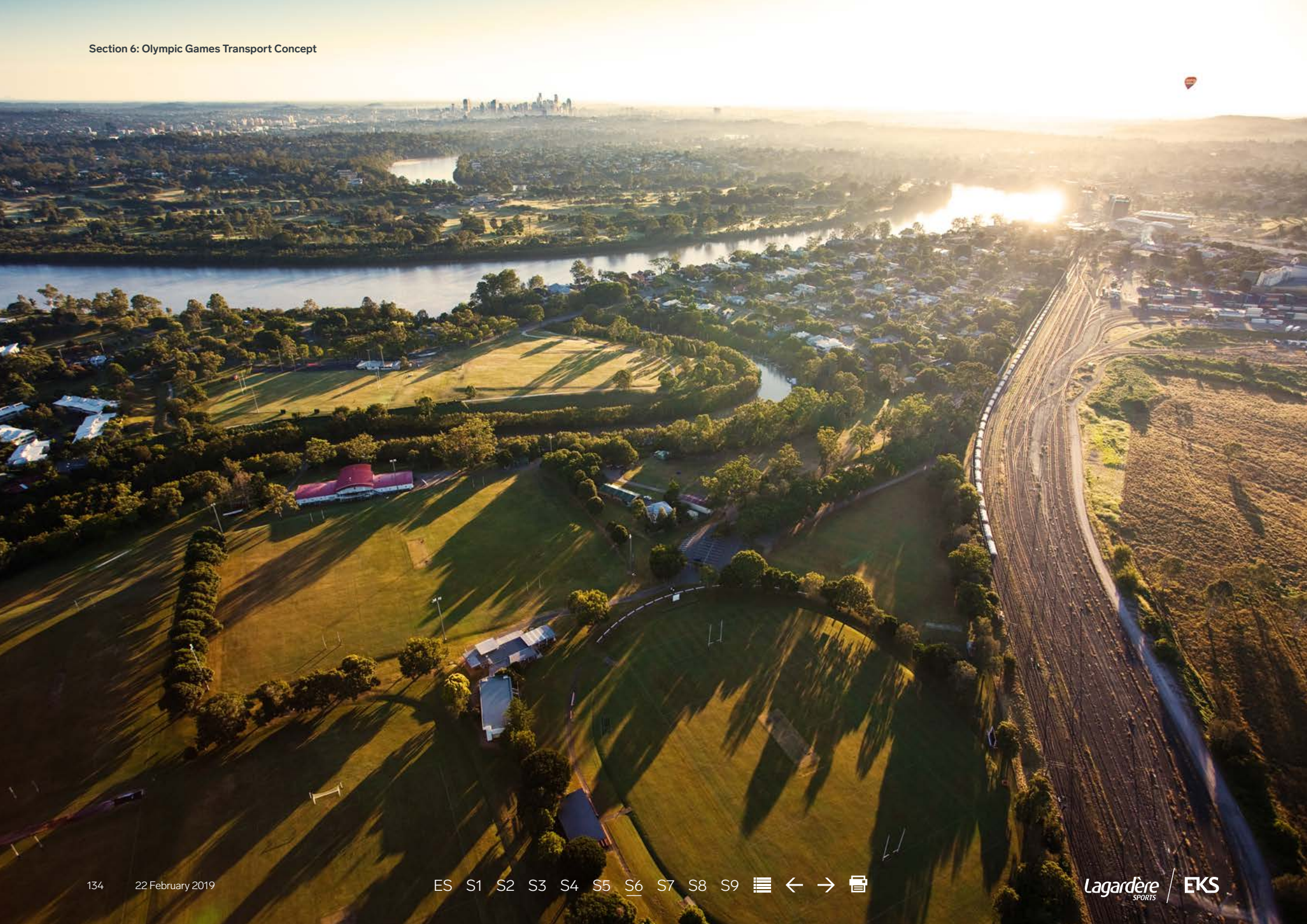
SEQ is currently served by four international airports, Brisbane Airport (BNE), Gold Coast Airport (OOL), Sunshine Coast Airport (MCY), and the Wellcamp Airport (WTB) in Toowoomba. Naturally, BNE is considered in this study as the main gateway airport for the Games, while OOL and MCY will serve as additional airports supporting those Games clients with accommodation in the Gold Coast and Sunshine Coast respectively.

The following sections present key information about the current and future capacity, international connectivity and public transport connectivity of BNE and the additional airports. Based on this information, the feasibility of the SEQ airports to serve the Olympic Games is examined by comparing the related demand with BNE's capacity in 2032.

6.3.1 BNE as the Gateway International Airport

For the majority of Games Family, spectators and other visitors, Brisbane Airport (BNE) will be the gateway to SEQ, and hence BNE should deliver enhanced service levels and customer experience. BNE is located on the east side of Brisbane 12 km from the CBD and is bordered by the Brisbane River to the east, the Kedron Brook floodway to the west, Moreton Bay to the north and the Gateway Motorway to the south. The close proximity to Brisbane will enable athletes and other members of the Games Family, as well as spectators to enjoy short travel times to / from the airport. In terms of regional placement, BNE is the primary international airport in SEQ and, in addition to serving the Brisbane local government area, will also serve accommodation areas in Moreton Bay, Logan and Ipswich.

SEQ is currently served by four international airports, Brisbane Airport, Gold Coast Airport, Sunshine Coast Airport, and the Wellcamp Airport in Toowoomba



6.3.2 Other Airports

The airports in Gold Coast (OOL) and Sunshine Coast (MCY) may serve as additional access airports for Games Family and spectators residing in Gold Coast and Sunshine Coast.

Both airports, and especially MCY, currently have limited connectivity to international destinations, however, domestic connections are frequent. OOL currently operates direct international routes to five cities in Asia and Oceania, as well as to ten main cities in Australia. MCY operates flights to New Zealand as well as domestic flights to Sydney, Melbourne and Adelaide.

Strong expansion plans for flight connectivity are projected for both airports. OOL has already started the expansion of its international flight network with special focus on Asian and Middle East destinations. In MCY, the completion of the new runway, aircraft facilities, the expected growth in the local economy and a rapidly-growing tourism industry are expected to lead to strong and sustained growth in both domestic and international passenger numbers. This, in turn, is expected to enhance the connectivity of the Sunshine Coast Airport to Perth, Darwin, Hobart, as well as to international services to New Zealand, South East Asia, China and India.

It is noted that the Gold Coast Airport may provide significant support to arrivals and departures of Games clients that plan to stay in the Gold Coast area. This was the case for the Gold Coast 2018 Commonwealth Games, during which a significant number of Games Family and spectators / workforce used this airport. Its role is also expected to increase based on the airport's significant expansion plans. The Sunshine Coast Airport may serve those Games clients who will seek accommodation in Sunshine Coast. However, direct access to Sunshine Coast from domestic and international destinations will provide significant enhancement of client experience for the relevant client groups.

6.3.3 Demand and Capacity Discussion

This section drills down on the capacity of BNE to handle the demand surge related to the Olympic Games. Based on experience from previous Games, the peak of arrivals and departures is expected to occur just ahead of the Opening Ceremony (Day -1) and immediately following the Closing Ceremony (Day +1), respectively. To validate effective 2032 Games delivery, expected Games traffic has been analysed using benchmarks from three previous and relevant Olympic Games (Sydney 2000, Athens 2004 and Rio 2016). Note that this analysis assumes that all Games traffic will arrive / depart using BNE - the worst-case scenario. Table 16 and 17 provide the estimates of total arrivals and departures in BNE on Day -1 and Day +1 respectively.

Table 16: Day - 1: Estimated daily arrivals and departures in BNE based on previous Games benchmarks

	Increase in arriving passenger traffic	BNE 2018 daily arrivals*	Expected BNE 2032 daily arrivals **	Expected BNE 2032 daily arrivals + Games surge
Based on Sydney 2000 airport data	8,000	32,700	61,500	69,500
Based on Athens 2004 airport data	12,600			74,100
Based on Rio 2016 airport data	3,700			65,200

	Increase in departing passenger traffic	BNE 2018 daily departures *	Expected BNE 2032 daily departures **	Expected BNE 2032 daily departures + Games surge
Based on Sydney 2000 airport data	0	33,300	62,700	62,700
Based on Athens 2004 airport data	4,300			67,000
Based on Rio 2016 airport data	2,500			65,200

* Average number calculated based on BNE 2018 August monthly data included in the official 'airport traffic data' of the Department of Infrastructure, Regional Development and Cities (https://bitre.gov.au/publications/ongoing/airport_traffic_data.aspx)

** BNE has estimated an average annual increase of approximately 4% in domestic and 4.5% in international passenger traffic for the years up to 2032

Table 17: Day +1: Estimated daily arrivals and departures in BNE based on previous Games benchmarks

	Increase in departing passenger traffic	BNE 2018 daily departures*	Expected BNE 2032 daily departures **	Expected BNE 2032 daily departures + Games surge
Based on Sydney 2000 airport data	21,700	33,300	62,700	84,400
Based on Athens 2004 airport data	14,800			77,500
Based on Rio 2016 airport data	7,000			69,700

	Increase in arriving passenger traffic	BNE 2018 daily arrivals*	Expected BNE 2032 daily arrivals **	Expected BNE 2032 daily arrivals + Games surge
Based on Sydney 2000 airport data	0	32,700	61,500	61,500
Based on Athens 2004 airport data	0			61,500
Based on Rio 2016 airport data	5,700			67,200

* Average number calculated based on BNE 2018 August monthly data included in the official 'airport traffic data' of the Department of Infrastructure, Regional Development and Cities (https://bitre.gov.au/publications/ongoing/airport_traffic_data.aspx)

** BNE has estimated an average annual increase of approximately 4% in domestic and 4.5% in international passenger traffic for the years up to 2032

Based on these benchmarks, and the location of SEQ in the world, the surge in Games demand is estimated to be less than 15,000 arriving passengers in Day -1 and 25,000 departing passengers in Day +1. Consequently, during the peak arrivals day BNE is expected to serve about 140,000 passengers, of whom 70,000 will be arriving. During the peak departures day following the Closing Ceremony, the airport is expected to experience the highest traffic of about 150,000 passengers in total, of whom 90,000 passengers will be departing. Based on BNE's capacity of serving 16.000 pax / hour in 2032, it seems that this airport alone will be fully capable to satisfy the surge in the Games demand. The support offered by OOL and MCY is expected to ease this surge and make Olympic arrivals and departures even more comfortable.

6.3.4 Recommendations for Streamlining Games Arrivals and Departures

Special arrangements are recommended for BNE, and possibly for the other two airports, in order to support effective arrival and departure processes for all Games clients.

Upon the arrival of Games Family, preferential lanes at passport control and at customs clearance, as well as baggage assistance are recommended. Upon departure, appropriate departure services should be made available at key official accommodation sites. These should include remote check-in services and baggage collection at the Olympic and Paralympic Village, the media villages and the IBC / MPC (if necessary). Secure luggage transport from remote check-in to aircraft should also be provided. At BNE, directional guidance to check-in and preferential lanes at passport control may also be made available.

Dedicated coach systems for each client group should be available at BNE to transport athletes, team officials, technical officials and accredited media to the Olympic and Paralympic Village, technical officials accommodation sites, IBC / MPC and the media villages. Depending on volume and demand, shuttle or T3 services should be provided to T1 – T3 accredited clients to / from the IOC hotel and other official accommodation sites. Special arrangements should be made for transporting oversized baggage and accompanying equipment. All destinations will be reached using the GRN, thus providing for comfortable travel.

All required parking and holding areas at BNE, as well as the dedicated load zones, should be carefully designed. Specifically, the transport facilities that are required are:

- TA, TM, TF and MP load zones
- T1-T3 fleet load zones
- T1-T2 fleet limited parking and T3 fleet staging
- Bus staging area
- Parking spaces for broadcasters and NOCs

The provision of similar services and facilities may be examined for OOL and MCY airports.

In addition to the required arrangements at BNE, and possibly the other SEQ airports, special arrangements should also be made to assist the transfer of Games-related international passengers at Sydney, Melbourne and Perth to SEQ airports. These arrangements may include:

- **Increased customer service level:** special transit waiting areas (lounges) may be established for international Games-related passengers arriving in these airports and transferring to SEQ. Dedicated personnel, appropriately trained, may provide guidance and support to connecting passengers
- **Appropriate customs clearance and baggage handling processes:** if possible the baggage of arriving international passengers at these airports may be transferred directly and securely to the appropriate flight to Brisbane and clear customs in the latter.

6.3.5 Feasibility - Gateway Airport Perspective

The existing characteristics and future plans for the gateway airport of Brisbane (BNE) and the other supporting airports (OOL and MCY), provide a robust foundation for the SEQ Games arrivals and departures.

All airports will achieve significant capacity enhancements (almost double their capacity by 2032). For BNE enhancements are also expected in international connectivity to Europe and North America. In addition to satisfactory international connectivity, BNE (and the other airports) have strong domestic connectivity to the major airports in Sydney Melbourne and Perth, and through them to the rest of the world.

Excellent public transport connectivity exists for BNE. Airtrain services link the airport to Brisbane CBD and, by 2032, to faster rail services to Gold Coast and Sunshine Coast. The planned light rail (LRT) systems will also connect OOL and MCY to the respective city centres. Excellent road connectivity exists for all airports. BNE is connected to Brisbane CBD by a signal-free road and to other regions of SEQ by multiple motorways. The M1 Motorway provides direct access to the Gold Coast Airport, linking it to the Gold Coast and the rest of SEQ, while Sunshine Coast Motorway connects to Sunshine Coast Airport.

The feasibility of SEQ airports to deliver efficient Games arrivals and departures is summarised in Table 18. This analysis is based on the requirements, recommendations, and findings of the previous sections 6.3.1 to 6.3.4. The key parameters for the analysis include airport capacity to serve expected demand while delivering the required passenger service levels, flight connectivity to meet origins of domestic and international visitors and airport public transport and road connectivity.

Table 18: Feasibility analysis of Games arrivals and departures in SEQ

Requirement	Satisfaction of requirement	Comment
Capacity of BNE to serve Games demand	◔	/ Adequate capacity to address total demand of 140,000 for Day -1, and 150,000 for Day +1 / Significant airside (runway and apron) and landside upgrades currently underway as well as planned till 2032 / Technology adoption will further enhance capacity / 24 hour operation
Flight connectivity of BNE	◑	/ BNE's international connectivity is moderate. However, BNE will benefit from strong connectivity with Sydney, Melbourne and Perth airports, which in turn are connected to the world
Public transport connectivity of BNE	●	/ Excellent connectivity by Airtrain that will be further enhanced (doubling service frequencies) / Convenient connection to the future faster rail services towards Gold Coast, Sunshine Coast and Ipswich
Road connectivity of BNE	●	/ Excellent highway connections to potential Olympic Village site to city centre / Connection to Gold Coast and Sunshine Coast through M1 Motorway to be further upgraded by 2032
Gold Coast and Sunshine Coast Airports (as supporting airports)	◔	/ Capacity enhancements planned (airside and landside) / Strong connections to Sydney and Melbourne Airports / Good public transport (LRT) and road connectivity between city centre and OLL / Limited planned international network expansion in major destinations such as Europe and North America

● Full satisfaction of all Games requirements

◔ Meets the majority of Games requirements

◑ ◔ Meets Games requirements at a basic level / minimal level

◔ Not able to meet Games requirements

Based on the above analysis, it is clear that the major upgrade and expansion plans for BNE, as well as for OOL and MCY, will ensure convenient and comfortable arrivals and departures for the Games. It is also expected that the adoption and expansion of modern and efficient procedures, such as automatic bag drops, advanced check-in and passenger screening will deliver service levels on par with best practices in 2032.

6.4 Transport Infrastructure

SEQ enjoys a continuously expanding transport infrastructure that currently supports 8.3 million motorised trips per day. It has a significant network of motorways and arterial roads managed by TMR, and council roads managed by the local councils. The public transport network currently includes the suburban rail network (810 km), an advanced system of busways (27 km in Brisbane), the Gold Coast light rail system (20 km) and long-distance rail lines in the north-south and east-west corridors.

As indicated in the *SEQ Regional Strategic Transport Road Map* for the period 2018 – 2041, the current transport strategies and infrastructure will not be able to cope with the mobility demand along key road and public transport corridors, which will operate beyond capacity. Additional transport infrastructure and systems are required to support the rate of growth in SEQ. Thus, the *SEQ Regional Strategic Transport Road Map* has taken into full consideration the existing strategies and plans of the Queensland Government and the local government areas (LGAs), and has supplemented the existing plans with new transport initiatives intended to strengthen both local and regional transport connectivity.

Some of the *SEQ Regional Strategic Transport Road Map*'s transport infrastructure, existing and planned, is expected to play a significant role in the Games.

The following section relates to transport infrastructure and the alignment with the Indicative Master Plan in this report. It should be noted that any variations to the Indicative Master Plan would need to be analysed to ensure optimal alignment with existing and planned transport infrastructure.

6.4.1 Games-related Existing and Planned Road Infrastructure

In terms of the Games-related road network, most of the road infrastructure already exists and provides connectivity to all Games venues, based on the Indicative Master Plan.

Within the Brisbane metropolitan area, the existing network of motorways, urban arterials, local roads and tunnels will form part of the Games Route Network to connect to Games venues. Access to the venues in the east, north and south will be through M1 Motorway.

For inter-LGA road connectivity, M1 Motorway connects Gold Coast, Brisbane and Sunshine Coast and will form the key north-south road corridor during the Games. The Warrego Highway forms the east-west Games-related road corridor and connects to the venues in Ipswich and Toowoomba.

Gold Coast and Sunshine Coast also enjoy an existing network of roads connecting the Games venues. In Gold Coast, the Games venues will mainly be accessed using the ring formed by Smith Street, Gold Coast Highway, Ross Street, Nerang-Broadbeach Road and Hooker Boulevard. In Sunshine Coast, Sunshine Motorway and Nicklin Way will form the linear corridor connecting the Games venues.

Even though the existing road network meets the connectivity requirements of the Games, some of the road projects that are part of the *SEQ Regional Strategic Transport Road Map* will directly or indirectly benefit the Games road infrastructure. Key road projects related to the Games include the following:

- As indicated above, the M1 Motorway will form a key north-south corridor during the Games. The motorway currently experiences congestion along multiple sections and, as part of the upgrade project, it will be enhanced to eight lanes along most of its length between Gold Coast and Brisbane and to six lanes along most of its length between Brisbane and Sunshine Coast. These upgrades will provide increased capacity and improve Games travel times
- The upgrades of Centenary Motorway between Moggill Road and the Ipswich Motorway to the Warrego Highway through to Toowoomba will directly benefit the Games Route Network and improve the travel times from Brisbane to the venues in Ipswich and Toowoomba
- The upgrades of Ipswich Motorway from Darra to Rocklea will enhance the alternative access (alternative to Centenary Motorway discussed above) between Brisbane and the venues in Ipswich and Toowoomba
- The new motorway projects of the north-west transport corridor from Bald Hills to Stafford Road and north-south link between Legacy Way and the north-west transport corridor will complete the missing links between the western and north-western corridor ultimately forming the outer ring of Brisbane city

6.4.2 Games-related Existing and Planned Public Transport Infrastructure and Systems

As highlighted in the introductory part of this section, public transport in SEQ is currently provided by the extensive network of suburban rail, with Brisbane CBD being the central hub for all lines. The suburban rail network connects to areas within Brisbane, as well as to Ipswich, Caboolture, Redcliffe, Redland, Logan, Moreton Bay, Gold Coast and Sunshine Coast. Within Brisbane, the network of busways / Metro provides additional mass transport modes, while in Gold Coast, the existing light rail supports intracity public transport.

The *SEQ Regional Strategic Transport Road Map* includes multiple projects that will directly benefit the Games, based on the Indicative Master Plan. By 2032, the new Brisbane Metro, the Cross River rail project, a new light rail in Sunshine Coast, extension of the light rail in Gold Coast and faster rail lines to Ipswich, Sunshine Coast and Gold Coast will significantly enhance public transport and support the Games. More detailed information related to the key public transport infrastructure benefiting SEQ follows:

- The new Brisbane Metro will comprise 33.5 km of high frequency and high capacity bus service along the busways in Brisbane. During the Games, Metro lines will serve about half of the venues in Brisbane
- Busway extensions will be completed before the Games and will add more than 34.5 km to the existing network. In addition to supplementing the capacity of Metro and suburban rail at some Games venues, the busways will provide critical mass transport options including to Redland
- The Cross River Rail project in Brisbane will provide a second inner-city river crossing, significantly enhancing the capacity of the suburban rail network, and as a consequence, the network's role in spectator and workforce transport for the Games. The suburban rail network will serve more than two thirds of the Brisbane venues and more than half of all venues in SEQ
- For inter-LGA transport, the faster rail projects to Sunshine Coast, Gold Coast and Ipswich will provide for high quality and fast regional public transport connectivity. Faster rail will provide direct access for spectators, and perhaps media and the IOC to one third of the Games venues, including all venues in Sunshine Coast and Ipswich. It will also benefit spectators that choose accommodation locations outside Brisbane. The planned Toowoomba to Ipswich passenger bus / rail service will enhance public transport connectivity to Toowoomba, while local access to the two venues will be provided by city buses
- The new light rail line in Sunshine Coast will provide much-needed public transport connectivity for the area; for the Games, light rail will serve all venues in Sunshine Coast
- The extension of the Gold Coast light rail line will provide public transport connectivity to Gold Coast areas, including the airport

6.5 Games Family Transport

The feasibility of delivering Games Family transport in a way that meets or exceeds IOC requirements depends on:

- the travel times between key competition origins / destinations ranging within acceptable levels (below 45 minutes) – the most critical requirement
- the capabilities and systems for managing traffic efficiently
- the availability of key service enablers, such as resources (vehicles, technology, drivers, staff) and key facilities such as vehicle depots
- the capabilities and experience of the local transport industry

All this is underpinned by charting a robust transport strategy that is based on a clear understanding of all IOC requirements.

6.5.1 Games Family Transport Strategy

The Games is required to deliver superior transport services that will meet all expectations of Olympic and Paralympic athletes, team officials and all other Games Family clients. Thus, all client groups should benefit from safe, secure, reliable, efficient and comfortable transport services. They should also enjoy a premium overall client experience delivered under the highest sustainability standards using smart systems and innovative, but proven, mobility solutions.

It is recommended that successful delivery of the above vision be underpinned by clear objectives, such as:

- To develop a client focused organisation, with client representatives setting the service levels in collaboration with the Games Family clients, and ensuring that these service levels will be delivered as agreed
- To develop client-focused, independent transport systems which will have their own staff, their own resources and their own depots / facilities; in this way, service delivery will be dedicated to the particular client needs
- To use appropriate resources: depots and facilities (all strategically located), vehicles and drivers, management systems
- To incorporate lessons learned and best practices from previous Games
- To use innovative but proven technology to provide information to all clients, to support client service and client experience, as well as system operations
- To implement robust planning, continuous risk mitigation, early mobilisation and extensive testing
- To integrate environmental and sustainability prerequisites
- To ensure fully accessible and inclusive Games for people with restricted mobility

6.5.2 Client Groups and Service Requirements

The IOC requires transport services by client group be detailed in service level agreements to be agreed with internal and external clients. A summary of the dedicated transport services for each client group is provided to inform the feasibility discussion, as well as possible next steps towards an SEQ Olympic Games bid.

NOCs: Athletes and team officials

Athletes, team officials and National Olympic Committees (NOCs) should be provided with transport of the highest priority using dedicated resources (buses and cars / minivans) and facilities (bus malls, load zones, car parking areas).

It is a requirement for athletes and team officials of individual sports to be provided with access to shared scheduled shuttle bus services to competition and training venues, while for team sports dedicated buses should be allocated to teams based on competition and training schedules. Provision to manage changes to bus schedules requested by NOCs in advance is also required. It is recommended a 'clean-to-clean' ('bubble-to-bubble') concept be implemented for athlete buses to maximise convenience and security and minimise end-to-end travel times. The underlying athlete bus network may be based on a hub and spoke configuration connecting the Olympic Village mall to all venues in Brisbane, Ipswich, Redland, Logan and Moreton Bay. For the venues in Council areas with athlete accommodation sites (Gold Coast, Sunshine Coast and Toowoomba), regular (scheduled) services between the satellite village and the respective accommodation sites, as well as services from the accommodation sites to the respective venues, will be required.

It is required that transport services be available from Olympic Village opening until its closing date and include the following:

- Arrivals and departures (only at official ports of entry)
- Training and competition
- Opening and Closing Ceremonies
- Internal Village Transport System (IVTS) on a 24 / 7 basis with peak headways of five to ten minutes
- Special services for spectating athletes (from the Olympic Village and from the accommodation sites to the related venues)
- Olympic Village to IBC / MPC (upon request)
- Tourist services

In addition, it is recommended that athletes and team officials receive free access to public transport.

Schedules are to be planned based on competition and training schedules and requirements of the OC Sports Department, taking into account client volumes and travel patterns, and should be approved by NOCs. Bus routes (for competition and training) are to be planned along the Games Route Network considering one athlete per seat (no standing).

For the Paralympic Games, a number of athlete buses are typically converted in order to accommodate multiple wheelchairs per vehicle.

It is also required that car services equipped with VAPPs (Vehicle Access and / or Parking Permits) be made available to NOCs based on the size of their team. Drivers for NOC cars may be provided through the volunteer programme of the OC, fostering SEQ citizen engagement in the Games. Finally, rate card[56] vehicles should be also available to NOCs.

[56] Rate Card vehicles are arranged by the OC for the eligible client groups, but paid for by the user.

International Federations: Technical Officials

International Federations require tailored and flexible transport services to / from competition, meetings and other key events. The TF transport system needs to offer scheduled bus or mini-van services operating from technical official accommodation sites. This system is required to serve:

- Arrivals and departures (only to / from official ports of entry)
- Competition events
- Training (depending on sport requirements)
- Opening and Closing Ceremonies
- Uniform and accreditation pick-up
- Official weigh-in (as per sport requirements) and official meetings

In addition, all technical officials receive free access to public transport.

For technical officials residing in Gold Coast, Sunshine Coast and Toowoomba, buses or mini-vans may be made available locally and schedules may be customised to serve transport requirements between accommodation sites and competition venues, as well as for scheduled transfers to Brisbane.

The TF transport system is required to be available from three days prior to the start of competition to one day after the end of competition. It should have the flexibility to accommodate changes in session timings or late departures due to appeals and meetings. Also, service levels may vary depending on the client group including international technical officials, national technical officials, IF staff, IF senior staff and guests.

Vehicle schedules should be planned based on competition schedule and requirements of the Sports Department (for client volumes and travel patterns), to be approved by IFs. Vehicle routes should be planned along the GRN as much as possible to deliver most reliable travel times.

Media

For the dedicated media transport system, it is recommended a hub and spoke network is used from the IBC / MPC to all official media accommodation sites and to all competition venues, ports of entry and the Olympic Village. Frequent services are required to connect the media accommodation sites in and around Brisbane to the IBC / MPC. Direct connections between accommodation sites and key venues, as well as between venues may be considered. For media residing in Gold Coast and Sunshine Coast, buses or mini-vans may be made available locally and schedules may be customised to transport requirements between media accommodation sites and competition venues. It is recommended that regular connections be provided between the IBC / MPC and central Venue Media Centres in Ipswich, Gold Coast, Sunshine Coast and Toowoomba (sites to be decided). Faster rail may be used to provide this connectivity for example Brisbane Central to Maroochydore, Southport, Ipswich Central with appropriate last mile connectivity.

It is required media transport be made available from IBC / MPC opening until its closing and serve:

- Arrivals and departures (only to / from official ports of entry)
- Connectivity between official media accommodation sites and IBC / MPC in Brisbane and Ipswich (on a 24 / 7 basis) – appropriate services are required for the accommodation sites in other LGAs as described above
- Competition and training
- Inter-LGA connectivity as described above
- Connectivity between IBC / MPC and Olympic Village
- Opening and Closing Ceremonies

All accredited media should also receive free access to public transport.

It is recommended that bus schedules be planned based on the competition and training schedules and requirements of the OC Press Operations functional area (for client volumes and travel patterns). The media system should cater for the peak periods of media travel, recognising working shifts according to world time zones. Appropriate room should be made available for the transfer of media equipment. Media routes should be planned along the GRN as much as possible and load zones should be located at short distances from media entries.

In addition to the above, Direct and Dedicated Services (DDS) are required to link the assigned to broadcasters' accommodation sites to corresponding competition venues. Bus schedules may be planned based on each broadcast production team, to be approved by the Olympic Broadcasting Service (OBS). A pool of vehicles is also required for the exclusive use of OBS and the International Olympic Photo Pool (IOPP) as per the IOC requirements.

Finally, required parking spaces as well as rate card parking at venues should be made available to media.

International Olympic Committee

As per current IOC requirements, transport services for the IOC will include dedicated cars and drivers for the T1 and T2 accredited clients, as well as a pool of cars and drivers for the T3 service. It is noted, however, that all these requirements are currently under review, which may lead to significant changes in service levels. The OC should seize the opportunity offered by these changes to offer outstanding service at reduced costs, taking full advantage of technology and innovation (for example Mobility as a Service (MaaS) or Shared Mobility services).

It is required that transport services be available from Olympic Village opening until three days after the Closing Ceremony. IOC transport should serve:

- Arrivals and departures (arrivals with T3 service)
- Competition and training
- Non-competition venues
- Opening and Closing Ceremonies (special services – by coach)

Under current requirements, which are currently being reviewed by the IOC and are subject to change, T1 and T2 clients should be able to travel anywhere within the Games-relevant region, including the cities involved. For this purpose, they may liaise directly with their drivers, or through their protocol assistants, to allow for flexibility. Efficient distribution processes should ensure that vehicles are delivered upon the arrival of IOC guests in SEQ. T1 and T2 services may be available up to 12 consecutive hours per day; outside this period clients may access the T3 transport system. Close integration is required with the Accommodation and Protocol functional areas (FAs) to construct accurate databases for these clients (contact, accreditation, protocol assistant contact details).

Under current IOC requirements, T3 transport services must be delivered on demand or through request-for-transport (reservations or pre-booking) using a 24-hour reservation system. The OC should also seek to utilise smart technologies in vehicle telematics, vehicle booking, ride sharing and trip chaining to enhance the experience of T3 clients. Sedans and mini-vans may be used. Mini-vans are ideal to maximise productivity, especially upon departure from venues. If possible, buses may service the transport needs of T3-accredited clients along some popular routes, streamlining operations. For regional (inter-LGA) travel, it is recommended frequent services be offered using faster rail (preferably) or dedicated bus-based transport. The design of the T3 system should address the intrinsic uncertainty of demand, building on previous Games experience. T3 car ranks may be established at popular locations. In addition, just-in-time services may be provided at venues, especially upon departure.

All T1-T3 accredited clients should be provided with free access to public transport.

Marketing Partners

The marketing partner coach system is typically specified by the OC, but it is managed and paid for by the clients. Specifically, marketing partners may be supported in hiring coaches and drivers for their hospitality programmes on the basis of guaranteed rates, payment schedules and at agreed quality levels. The coaches should be permitted to access the GRN to ensure convenient and consistent travel times.

Provisions may be made for providing parking and load zone facilities for marketing partner coaches at the airport, accommodation sites, hospitality facilities and competition venues (front-of-house). The front-of-house load zones should be provided as per space availability and other operational constraints.

Under current IOC requirements, dedicated cars and drivers are required to be made available to The Olympic Partners (TOP). All marketing partners should be able to access rate card services, and will be responsible for managing their fleet of vehicles, while the OC should assist in driver training and provision of information as appropriate.

IOC New Norms Opportunities

The IOC New Norm Report[57]issued in February 2018 notes that there are opportunities to explore in the delivery of transport services, notably:

- Candidate Cities and OCs to propose transport plans which combine the use of OC-dedicated resources and public transport, while maintaining an integrated and effective end-to-end transport service[58]

However, the IOC report advises, 'reliance on public transport in the host city and co-host cities must be based on the robustness and availability of an existing network'[59].

The proposed location of the Games IBC / MPC, adjacent to a public transport hub, for example, provides an excellent opportunity for an SEQ Games to deliver a public transport-based Games and reduce media bus services (given that media accommodation is planned to be primarily in the CBD area, an area well serviced by public transport).

The proposed location of the Games IBC / MPC, adjacent to a public transport hub, for example, provides an excellent opportunity for an SEQ Games to deliver a public transport-based Games

[57] Olympic Agenda 2020 — Olympic Games: the New Norm - Report by the Executive Steering Committee for Olympic Games Delivery, February 2018

[58] Page 35 - New Norm - Report by the Executive Steering Committee for Olympic Games Delivery, February 2018

[59] Page 35 - New Norm - Report by the Executive Steering Committee for Olympic Games Delivery, February 2018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6.5.3 Operational Enablers

Key enablers for Games Family transport service levels include vehicle and driver resources, facilities, technology and management systems.

6.5.3.1 Vehicle And Driver Resources

The OC should optimise the resources necessary to deliver the transport programme by using thorough modelling and leveraging experience from previous Games. Table 19 provides estimates of the resources required to deliver superior transport services to Games Family clients, under current IOC requirements. Should these requirements change, the estimates of Table 19 may be affected. These initial estimates are based on previous Games experience.

The OC needs to source bus resources and bus drivers from Queensland, NSW and other Australian states. The positive experience of the Gold Coast 2018 Commonwealth Games in contracting more than 1,000 buses along with the appropriate number of drivers, as well as other resources required to deliver integrated services, may serve as a guide. However, double this number may be required for the Olympic Games (taking also into consideration the needs for special bus shuttle services), requiring significant out-of-state bus procurement.

In terms of the car / minivan fleet, sponsorship through a manufacturer, or a vehicle leasing / rental company may be sought. Again, the positive experience gained from Gold Coast 2018 Commonwealth Games should be fully utilised. Volunteers may be used as car fleet drivers, thus increasing local participation in the Games while enhancing the Games Family experience. The fact that 2,300 volunteer drivers were recruited for Gold Coast 2018 Commonwealth Games provides a strong indication that the goal of using only volunteers for the T1-T3 fleet is easily achievable.

The OC should also take full advantage of technology developments such as electric vehicles, autonomous vehicles, car sharing applications And MaaS to maximise service, optimise costs and minimise the environmental impacts of Games transport.

6.5.3.2 Depot Considerations

In planning for bus and fleet depots, it is recommended full consideration be given to the Games footprint and to the following principles:

- Each system may have its own depot(s), with dedicated facilities, resources, staff and management. This will support the strategy of decoupling transport systems in order to achieve better client service and to streamline operations
- Based on the proposed Games footprint, Games Family depots may be planned in Brisbane, Gold Coast and Sunshine Coast, and each depot should be located close to the principal source of demand in order to minimise 'dead kilometres' and improve responsiveness
- The depot locations should also be planned considering easy access to and from the GRN and proximity to public transport stations / stops to facilitate workforce access. Efforts should be made to provide driver accommodation, as necessary, within depots or in close proximity to these depots
- In designing depot operational facilities, key depot processes must be considered, including driver check-in and check-out, rostering, dispatching and driver management. All depots should be equipped with excellent driver facilities; high quality catering is essential to driver and staff satisfaction
- Depot fuelling / charging, vehicle cleaning and maintenance facilities should be proportional to needs. Only inspections or light maintenance may be performed at the depots

Table 19: System resources: Initial estimates

Client group	Group size	System resources	System drivers
Athletes and team officials	17,000	300 buses / coaches	450
National Olympic Committees	More than 200 nations	750 cars / minivans	1,500 (Protocol assistants / volunteers)
IF Technical Officials	4,500	150 buses / minibuses	225
Media[60]	26,000	500 buses	750
• **IOC** • **WADA** • **CAS** • **NOC (not including athletes and team officials)** • **IF (not including technical officials)** • **Candidate City** • **Future OC** • **TOP representative**	5,000	1,300 cars / minivans	2,800 (volunteers)
Marketing Partners	30,000 (in waves)	(based on MP needs)	(based on MP needs)

[60] Media system assumes previous system requirements, of a dedicated bus-based system, which will be required but are expected to be supplemented by use of the public transport network; therefore the assumptions are the worst case scenario

Table 20: Depot characteristics and location criteria

System	Depot	Recommended capacity	Area (m²)	Location criteria
Athletes	TA1	230 buses	35,000	Close to Olympic Village in Brisbane
	TA2	40 buses	6,000	Close to athlete accommodation in Gold Coast
	TA3	30 buses	4,500	Close to athlete accommodation in Sunshine Coast
	TA4	15 buses	2,300	Close to athlete accommodation in Toowoomba
NOC fleet	NOC	600 cars / minivans	15,000 (for OLV only)	In Olympic Village Close to athlete accommodation at the Gold Coast, Sunshine Coast and Toowoomba
Technical Officials	TF	150 buses / minibuses	20,000 (for Brisbane facility only)	Close to Technical Officials accommodation sites in Brisbane, Gold Coast, Sunshine Coast and Toowoomba
Media	TM	500 buses	60,000 (for the Brisbane facility)	Close to IBC / MPC for Brisbane. Appropriate facilities in Gold Coast, Sunshine Coast and Toowoomba
T1-T3	Fleet - 1	600 cars / minivans	15,000	Close to main hotel area in Brisbane
	Fleet - 2	600 cars / minivans	15,000	Close to main hotel area in Brisbane
	Fleet - 3	100	3,000	Close to hotel area in Gold Coast
	Fleet - 4	80	2,500	Close to hotel area in Sunshine Coast
	Fleet - 5	40	1,200	Close to hotel area in Toowoomba

Table 20 provides the essential characteristics of system depots and location criteria. The information in Table 20 may be used to examine alternative facility locations and select the most appropriate ones in the event of a successful bid by SEQ.

6.5.3.3 System management supported by technology

It is recommended that each of the Games Family transport systems be managed independently, allowing for effective decision-making and increased responsiveness. Experienced professionals should be recruited for the top management positions in the Organising Committee with significant expertise in their respective systems. Possible outsourcing of operations for the bus systems (following the Gold Coast 2018 Commonwealth Games experience) may be carefully studied and any outsourcing should be managed in a way that service and performance specifications are met or exceeded. For the fleet systems, insourcing and outsourcing options and final option selection will be strongly affected by prevailing best practice in shared mobility, MaaS and other technologies.

For the most essential system management processes, the significant experience of public and private fleet operators in SEQ and the rest of Australia should be leveraged. Furthermore, tested and smart technologies in vehicle telematics, fleet management and user communication need to be employed.

The Games-time C3 structure needs to provide a framework for delivering strategic, tactical or operational responses to Games Family fleet operations and related incidents. While all Games Family transport systems may be managed independently, the Games Family Transport Operations Centre should oversee all fleet operations as a whole and should act as the link with the Games Main Operations Centre (MOC) to ensure adherence to Games Family service levels, facilitate any unplanned changes, as well as ensure coordination with the Public Transport and Traffic Coordination Centre (see section 6.7.2).

6.5.4 Travel times, the Games Route Network and Traffic Management

Games Family travel times depend on the selected routes of travel and the traffic conditions along these routes. Thus, in order to estimate and assess these travel times an initial proposal for the Games Route Network (GRN) has been developed, based on the Indicative Master Plan. Traffic management initiatives have been recommended using available Intelligent Traffic Management Systems (ITMS). Subsequently travel time estimates have been developed from the critical origins and destinations of the Games. Since this exercise is performed based on the Indicative Master Plan, any changes to that plan will cause changes in the GRN. However, it is expected that many elements of the GRN will remain unchanged.

6.5.4.1 Games Route Network

The Games Route Network connects all Games origins and destinations in order to enable reliable and convenient travel for the Games Family, capitalising on SEQ's existing road infrastructure and planned projects.

The GRN designer should consider the following:

- Identify the most critical routes of travel between Games venues by taking into account 2032 road capacities and expected traffic volumes
- Define the GRN and its types
- Plan the configuration of lanes along the GRN and identify the lane types
- Identify alternative Games Family routes during road events and Torch Relay, or as a contingency against GRN disruption
- Study the impacts of overlapping Games lanes with other public transport systems, as well as the impacts on background traffic that may require traffic diversion

Specifically, in developing the initial GRN concept for the Games, GRN types and lane types have been considered and designated. The first two of the four GRN types have been specifically considered:

- **Core GRN** is active for the full duration of the Games and includes main roads between the Olympic Village, other Games Family accommodation sites and the main venues in Brisbane. In the Gold Coast and Sunshine Coast, the Core GRN connects the athlete accommodation and the key venues within these two cities
- **Venue-specific GRN** provides access to venues located outside the city of Brisbane, Gold Coast and Sunshine Coast, as well as to the venues in Ipswich, Logan, Redland, Moreton Bay and Toowoomba. This network is active during the days the corresponding venues are operational
- **Training venue GRN** comprises the road links that are not included in the core and venue-specific GRN, but are important for ensuring unimpeded access of athletes to training venues
- **Alternative GRN** includes road links to be used only if there is a disruption in the core or venue-specific GRN or in case of road events. It is active only as required

Along the first two GRN types, three lane types have been considered as follows:

- **Exclusive lanes** to be used exclusively by Games Family vehicles and Games public transport buses. The exclusive lanes are implemented along multi-lane roads with at least two lanes per direction occupying mostly the right lanes of circulation
- **Shared lanes with public transport:** Along these lanes, Games Family vehicles and public transport buses use existing public transport (PT) exclusive lanes (such as bus lanes)
- **Mixed lanes** are implemented along key Games-related roads with one lane per direction, as well as along the highways / motorways that serve inter-LGA traffic. In the first instance, these lanes may be used by all other vehicles subject to appropriate traffic regulations such as no stopping, or possible limited access by heavy vehicles. A different set of restrictions may be enacted along highways / motorways. In this case, for example, heavy vehicles may be prevented from entering the mixed Games lanes

It is recommended that the Games capitalises on the advanced modelling tools of TMR to identify hot spots, for both Games Family and background traffic, and selects the most appropriate measures in the context of the 2032 scenario.

6.5.4.2 Games-time traffic management

To ensure efficient and reliable travel times along the Games Route Network, while keeping SEQ moving, a two-pronged strategy may be followed:

- implement appropriate traffic measures to manage the Games and background traffic
- support the implementation of traffic measures by robust ITS, capitalising on the existing and planned capabilities of SEQ Councils and Transport and Main Roads (TMR)

These two strategies are discussed below.

Recommendation: Implement traffic measures to manage GRN

The possible traffic measures to deliver reliable travel times along the GRN (also based on previous Games experience) may include the following:

- Identification and communication of alternative traffic routes for background traffic to minimise traffic volume along certain sensitive GRN sections
- Restrictions of right turns and temporary suspension of certain intersections along the GRN to prevent delays
- Relocation or suspension of bus stops (for those bus stops that are not recessed), as well as pedestrian crossings along the GRN
- Prohibition of non-critical road works during the Games
- Clear traffic signs for Games vehicles, as well as for background traffic, including signs for route diversions
- Modifications in traffic and pedestrian access and parking at venue vicinity and development of Local Area Transport and Traffic plans (LATTPs)
- Priority, including 'green waves[61]', for Games Family vehicles along certain sensitive sections of the GRN
- Deployment of traffic management staff at critical locations along the GRN
- Overall Travel Demand Management (TDM) measures planned for the Games to encourage public transport use and reduce road traffic. This may include school holidays, home working, staggered shifts and restrictions regarding delivery vehicles. This is further discussed in section 6.7

It is recommended that the Games capitalises on the advanced modelling tools of TMR to identify hot spots, for both Games Family and background traffic, and selects the most appropriate measures in the context of the 2032 scenario. It is strongly recommended TMR develop a special Olympics Strategic Transport Model in order to estimate traffic demand for the Games period. This demand needs to be analysed against the capacity of the 2032 road network across the entire SEQ Games-relevant area (including the LGAs of Brisbane, Gold Coast, Sunshine Coast, Ipswich, Logan and Toowoomba). The analysis should also take advantage of the extensive experience acquired during planning for the Gold Coast 2018 Commonwealth Games. In areas for which a more detailed analysis is necessary such as traffic bottlenecks, TMR's existing (and future) mesoscopic and microscopic tools may be employed.

[61] Green Wave traffic light sequences are when a series of traffic lights are coordinated to allow continuous traffic flow over several intersections in one main direction.

Support traffic management measures by ITS

ITS, with the region's traffic management centres at its backbone, may be used effectively to support GRN operations, as well as traffic management along SEQ's road network. The key areas in which ITS may provide support include the following:

- Monitoring of traffic conditions along the GRN and other roads in order to identify congestion build-up and incidents that may affect smooth flow of traffic
- Real-time management of hotspots such as traffic light adjustments and green waves for critical Games Family flows such as athlete buses
- Provision of information to road users about road closures, incidents, traffic conditions, TDM information
- Management of incidents, including incident identification, provision of information to police and the Games-time Transport Coordination Centre
- Enforcement of traffic and parking regulations, including Games lanes, traffic and parking-controlled areas / zones around Games venues
- Re-adjustment of plans based on ITS analytics

Feasibility of delivering efficient traffic management during the Games

The delivery of efficient traffic management during the Games will depend on two prerequisites:

- the existing and planned capabilities of ITS infrastructure and corresponding traffic control centres
- the coordination between multiple clients responsible for traffic management

In terms of the first prerequisite related to the availability of ITS systems, the councils of Brisbane, Gold Coast and Sunshine Coast (for the roads under their responsibility) as well as TMR (for the state-controlled roads in SEQ) use advanced ITS systems supported by existing (TMR, Brisbane and Sunshine Coast) traffic control centres.

The local road network in SEQ is managed by traffic management centres (TMC) located in Brisbane, Sunshine Coast and Toowoomba. The State-wide Traffic Management Centre (STMC) located in Nerang (Gold Coast) is the heart of traffic management in SEQ and is jointly managed by TMR and Gold Coast City Council. The centre manages all state-controlled roads in Queensland, as well as the Council roads in Gold Coast. It monitors, collects, coordinates and distributes real-time traffic information to provide an efficient response to actual road conditions. Through its real-time web application (qldtraffic.qld.gov.au), road users can access information about live traffic, traffic alerts including accidents, road works and advisories.

Games-related travel along SEQ highways / motorways may also benefit from the Managed Motorways initiative of TMR that uses state-of-the-art smart technology to allow proactive, real-time management of the SEQ network. Managed Motorways technologies will help to reduce traffic delays, improve safety and provide more predictable travel times. Related technologies under the Managed Motorway initiative include variable speed limit signs, flexible lane control, ramp signalling, travel time signs, electronic message signs and roadside data systems. In SEQ, management of incidents is further supported by seven Incident Response Satellite Depots and a fleet of Traffic Response Units (TRUs) that provide first response and quick clearance solutions for road incidents. It is imperative that this response system, appropriately strengthened, fully supports the traffic management strategy for the Games.

Since 2006, the state-of-the -art Brisbane Metropolitan Traffic Management Centre (BMTMC) has managed congestion and ensured safety in Brisbane, including Ipswich and Redland

Historically TMR is at the forefront of incorporating innovative technologies into its operations, thus enhancing its ability to deal with the challenging Games traffic environment

The centre, jointly managed by TMR and Brisbane City Council, provides 24 / 7 incident management on all Brisbane City Council roads and state-owned roads in the area. It is supported by advanced Intelligent Traffic Management Systems (ITMS) infrastructure including 1,000 bluetooth traffic monitoring receivers, 456 traffic cameras, 115 variable message signs and 320 motorway help phones. From its operations room located in the Brisbane City Council, the centre monitors and optimises the traffic network, coordinates real-time incident management and provides live traffic information to motorists.

In Sunshine Coast, the Main Roads Transport Management Centre at Maroochydore is the hub for traffic management along the north coast state-controlled roads and the council roads and has the capability to remotely control all 50 traffic signals of the city. Traffic management in the western corridor of SEQ will also be supported by the TMR centre in Toowoomba.

SEQ should also utilise new technologies that are currently under testing, development, or may be developed over the next 15 years. Historically TMR is at the forefront of incorporating innovative technologies into its operations, thus enhancing its ability to deal with the challenging Games traffic environment.

In terms of the second prerequisite related to coordination between the traffic management clients during the Games, traffic management in SEQ is currently delivered in a collaborative manner by TMR and the local council agencies as described above.

A prime example of successful collaboration is the Brisbane Metropolitan Transport Management Centre (BMTMC) jointly established by the Brisbane City Council and the Queensland Department of Transport and Main Roads to manage traffic signals on council roads, as well as the state-controlled roads in Brisbane, from a single centre. The centre currently collaborates closely with police, emergency services, RACQ road assistance services, public transport operators, private motorway companies and maintenance contractors. The centre also manages the busways, provides real-time incident management and supports the dissemination of information to the public.

This coordination model for traffic management is part of SEQ's long-term strategy and will be implemented to other councils in SEQ. It will certainly benefit client integration for the Games. Specifically, during Games time, special requirements for operations and coordination will exist that will require all transport clients to partake to Games transport C3 (see also section 6.7.2). This is clearly feasible taking into account the experience described above.

In conclusion, based on the information summarised, key prerequisites will be met by SEQ, allowing successful management of GRN, as well as of background traffic in the region.

6.5.4.3 Travel time estimates for competition and non-competition venues

Initial travel time estimates between all key destinations (competition and major non-competition venues) and all key origins (major non-competition venues and some competition venues) have been developed based on the following:

- The Indicative Master Plan for the Olympic Games
- The Games Route Network of section 6.5.4.1
- Average bus speeds per GRN link that range from 30 - 80 kilometres per hour based on road characteristics, including number of lanes, road category type (inner-city road, motorway), density of intersections and density of intersections. The related assumptions are provided in Table 21
- Athletes competing in the venues in Brisbane, Ipswich, Logan, Redland and Moreton Bay will reside in the Olympic Village, while athletes competing in the venues in Gold Coast, Sunshine Coast and Toowoomba will reside in local athlete accommodations in the respective cities

Based on the results of the analysis of travel times, the Games Indicative Master Plan delivers athlete travel times on par with previous Games. The average travel time to competition venues from athlete accommodations will be 19 minutes (refer to Figures 10 and 12).

Table 21: Average bus speeds considered for travel time analysis

Type of road	Average speed (km / hr)
Inner city traffic (with low intersection spacing)	30
Inner city traffic (with moderate intersection spacing)	45
Minor urban arterials	50
Major urban arterials	60
Motorways	80

Figure 10: Distribution of athlete travel time between athlete accommodation and competition venues (weighted by the number of athletes)

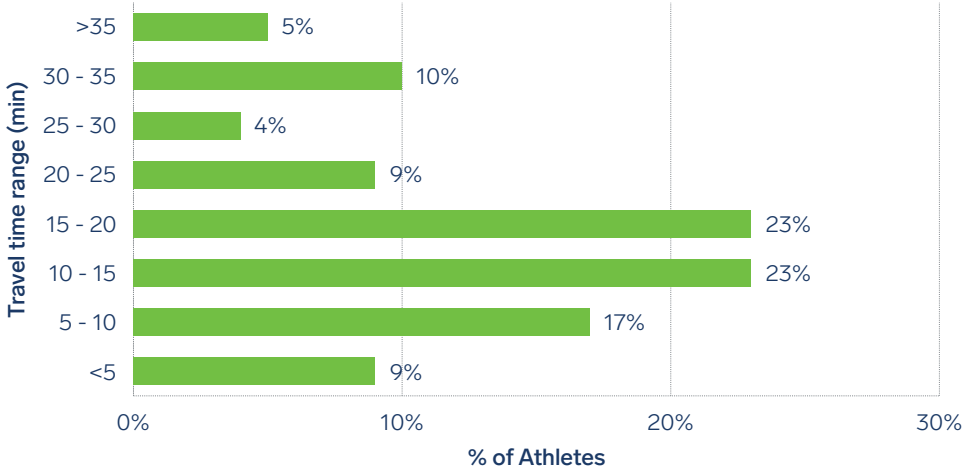


Figure 11: Distribution of travel time between athlete accommodation and the venues (not weighted by the number of athletes)

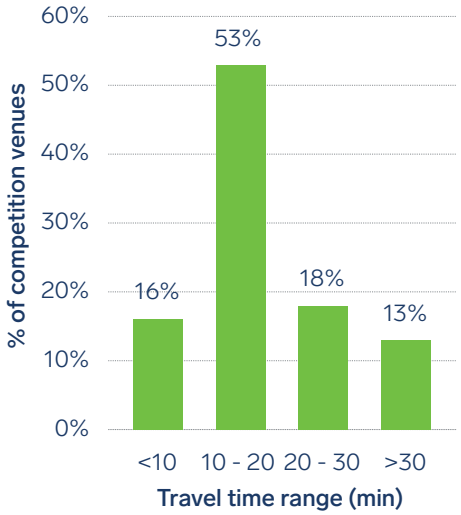
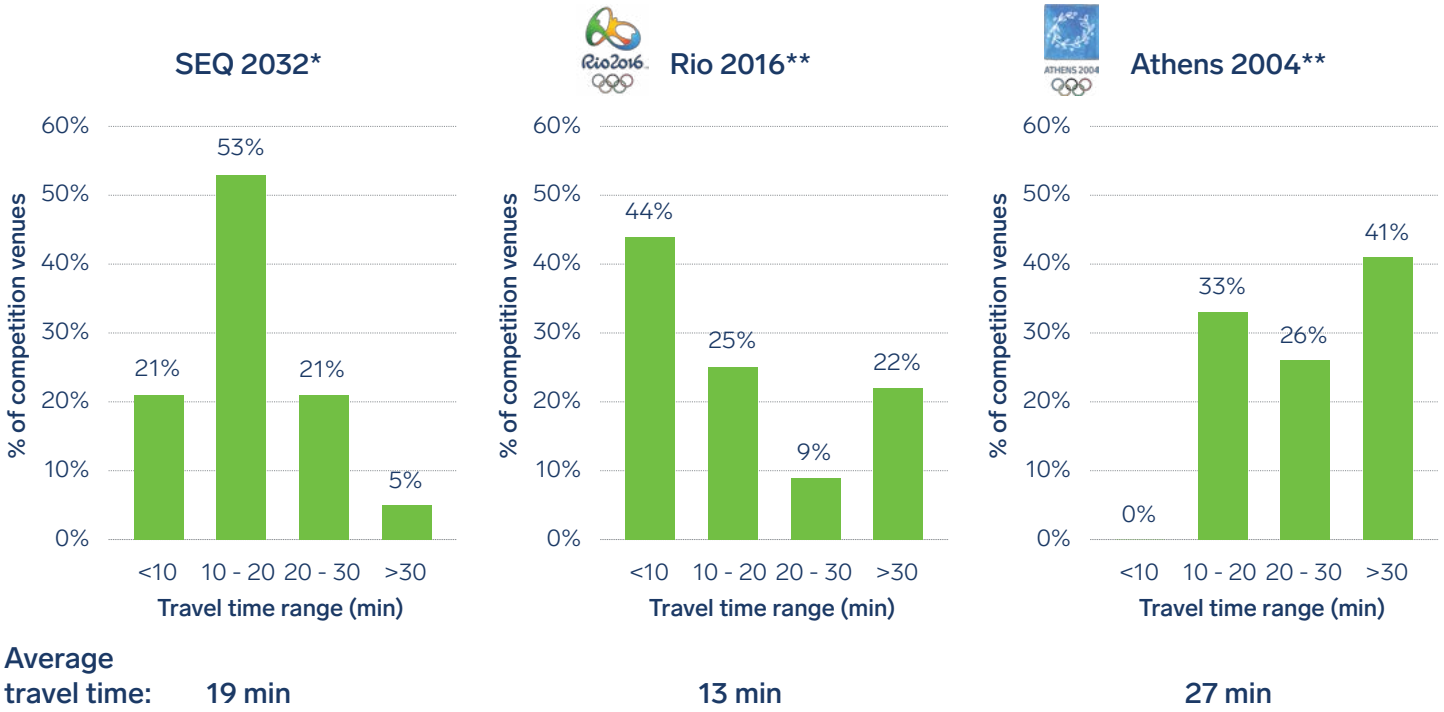


Figure 12: Comparison of SEQ average athlete travel times with previous Games



* Assuming Athletes' satellite accommodations ** Based on actual travel time data

Figure 12 indicates that the athlete travel times compare well with previous Games. This is very encouraging, especially considering that the SEQ Games have a regional footprint.

Media clients will also experience a superior service during their travel between media villages, the IBC / MPC and the venues, with an average travel time of 23 minutes from the IBC / MPC to competition venues in Brisbane, Ipswich, Redland, Moreton Bay and Logan. Almost 40 % of venues in Brisbane, Ipswich, Redland, Moreton Bay and Logan will be within 20 minutes of the IBC / MPC. Short travel times can also be achieved in Gold Coast and Sunshine Coast with the appropriate media transport network design and the location of media accommodation.

Games Family clients residing in the main hotel area will enjoy an average travel time of 23 minutes to the venues in Brisbane, Ipswich, Redland, Moreton Bay and Logan, with more than 40 % of venues within a 20 minute journey.

Based on the above initial findings on travel times, the most significant feasibility criterion in terms of Games Family transport is fully met by the Games Indicative Master Plan and transport plan.

6.5.5 Feasibility - Games Family Transport Perspective

Based on the Indicative Master Plan, the feasibility of delivering Games Family transport in a way that meets or surpasses IOC requirements is reviewed in Table 22. This analysis is based on the requirements, recommendations and findings of the previous Sections 6.5.1 to 6.5.4. Changes to the Indicative Master Plan may cause changes in the feasibility analysis.

- Full satisfaction of all Games requirements
- Meets the majority of Games requirements
- Meets Games requirements at a basic level / minimal level
- Not able to meet Games requirements

Table 22: Feasibility analysis of hosting 2032 Olympic Games from the Games Family Transport perspective

Requirement	Satisfaction of requirement	Comment
Road infrastructure		/ It appears that the GRN can be implemented to meet Games requirements / The GRN seems to provide residual capacity for background traffic, and alternative routes
ITS systems		/ Advanced traffic management centres already in operation in SEQ, Brisbane, Gold Coast and Sunshine Coast / Existing ITS infrastructure is in an advanced state and is continuously expanding
Transport modelling ability		/ TMR has very advanced modelling capabilities at the macro, meso and micro levels / Excellent experience for modelling Games demand and Games traffic and transport following extensive planning process for the Gold Coast 2018 Commonwealth Games
Experience with special traffic measures		/ Experience from Gold Coast 2018 Commonwealth Games and multiple events in Brisbane and Gold Coast (G20, supercar racing)
Public tolerance with measures		/ Car-based culture / Public generally follows instructions in events
Transport industry strength and maturity (bus)		/ Mature industry / Limited bus resources in Queensland
Transport industry strength and maturity (fleet)		/ Mature industry / Significant car rental / leasing industry / Some resource limitations

Requirement	Satisfaction of requirement	Comment
Ability to meet service levels	●	/ Outstanding based on the Gold Coast 2018 Commonwealth Games record
Travel times	◕	/ The average travel time to competition venues from athlete accommodations will be 19 minutes

Based on the above analysis, it is clear that SEQ is fully capable of delivering a very strong Games Family transport solution that meets or surpasses all related requirements. This is substantiated by the fact that, in most cases, the region exceeds the prerequisite levels of infrastructure, systems, experience and industry strength.

6.6 Spectators and Workforce Transport

The Games should be a zero-car Games. This principle has been used in all Olympic Summer Games since Sydney 2000 and is considered absolutely necessary (but not sufficient) for the feasibility of spectator and workforce transport in SEQ

Based on the zero-car access principle, public transport will be the only motorised mode for spectators and workforce to reach Olympic venues. Access by active transport will also be encouraged, as discussed in section 6.6.3. During the Games, public transport will also be used by regular SEQ commuters and visitors, as well as by those car users who will shift to public transport as a result of Travel Demand Management (TDM) (refer also to section 6.7.1). Thus, public transport systems are expected to serve the transport requirements of spectators and workforce, as well the background city / SEQ demand.

The feasibility of delivering spectator and workforce transport needs to be analysed considering the following aspects:

- Access to all venues by sustainable public transport
- Access to venues by active transport (cycling and walking)
- Adequate capacity of public transport versus Games and background demand
- Client experience including comfort and convenience (for spectators, but more so for workforce)
- Communication and passenger information systems capable of disseminating the transport plan to all spectators and workforce

6.6.1 Spectator And Workforce Demand Estimates

To estimate the spectator and workforce demand for the Games, a special demand model has been used that incorporates experience from multiple previous Olympic Games. It is noted that the current analysis is based on the Indicative Master Plan. Changes in the Indicative Master Plan will necessitate a revised analysis. It is estimated, however, that many of the conclusions of the current analysis will still be valid and may guide future planning.

A set of inputs and assumptions drive the demand estimation, as follows:

Key inputs

- The Indicative Master Plan (should this change, the estimates may change)
- An Olympic Games competition schedule that regulates the timing of arrivals and departures to / from venues
- The type of sessions per sport (F: Final, SF: Semi Final, QF: Quarter Final, P: Preliminary) for all competition days
- The available seats for spectators in each competition venue
- The workforce population for each competition and non-competition venue
- Shift times and workforce per shift for each competition / non-competition venue and Games day

Key assumptions

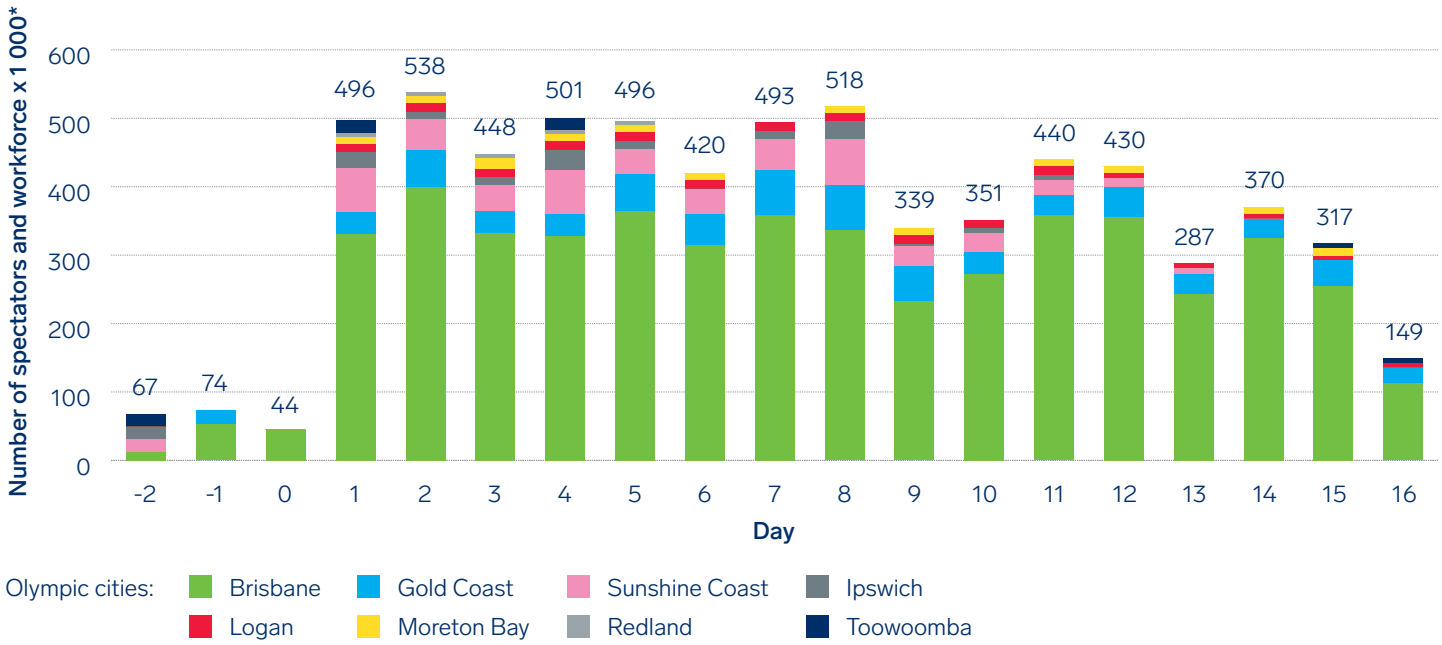
- The competition schedule used for the Games is very similar to the one implemented in Rio 2016. This was selected since the Rio Games are the latest Olympic Games and were held in the southern hemisphere. It is noted that Tokyo 2020 is a similar time zone (minus 2 hours) to SEQ and therefore this programme is also relevant and should be considered in any future and more detailed Games planning. In regard to Tokyo 2020 it is noted that in some sports, to support broadcast rights holders (particularly in North American time zones) morning finals sessions have increased and this will have an impact on travel demand
- The arrival and departure profiles of spectators and workforce define the patterns of accessing the competition and non-competition venue gates
  - Before / after an event
  - During an event (for sessions with multiple games such as Tennis, Basketball and Water Polo)

  In this study the profiles are based on the experience of Athens 2004, London 2012 and Rio2016
- For the expected spectator attendance per sport and type of session 100% ticket sales have been assumed. This is clearly the worst case for transport demand, which is considered appropriate for a feasibility study. Furthermore, it fits the great Australian sports culture
- For the workforce shifts at competition venues a maximum duration of 10 hours per shift has been used. The model automatically generates the number of shifts (10 hours or less) required in a competition venue in order to meet the needs of the competition schedule. For the non-competition venues such as Olympic Village, IBC / MPC and media villages it is assumed there are three eight-hour shifts per Games day
- In sports with multiple games within a session such as basketball, volleyball and water polo, there will be simultaneous spectator arrivals and departures. For these sessions, it is assumed that a portion of spectators will arrive and leave at the start / end of each game. The duration of the game depends on the sport and determines the total number of games within a session

The results of the model based on the above inputs / assumptions yield the spectator and workforce arrivals and departures per city, cluster and venue, Games day and by time of day (15-minute intervals). Peaks are also provided for any combination of facilities for arrivals, departures and crossover (by day and globally for the Games). Key results are further discussed below.

Figure 13 presents the total spectator and workforce attendance per day in SEQ venues during the Games based on the Indicative Master Plan. Under the 100% attendance assumption, Day 2 will be the peak day of the Games with about 538,000 spectators and workforce at venues (excluding Football cities). The distribution across the region is as follows: 400,000 (74% of total demand), in Brisbane, 53,000 (10%) in Gold Coast, 46,000 (9%) in Sunshine Coast, 11,400 (2%) in Ipswich, 11,900 (2%) in Logan, 10,500 (2%) in Moreton Bay and 6,300 (1%) in Redland.

Figure 13: Spectator and workforce attendance per competition day and SEQ Olympics-related cities / areas – based on the Indicative Master Plan

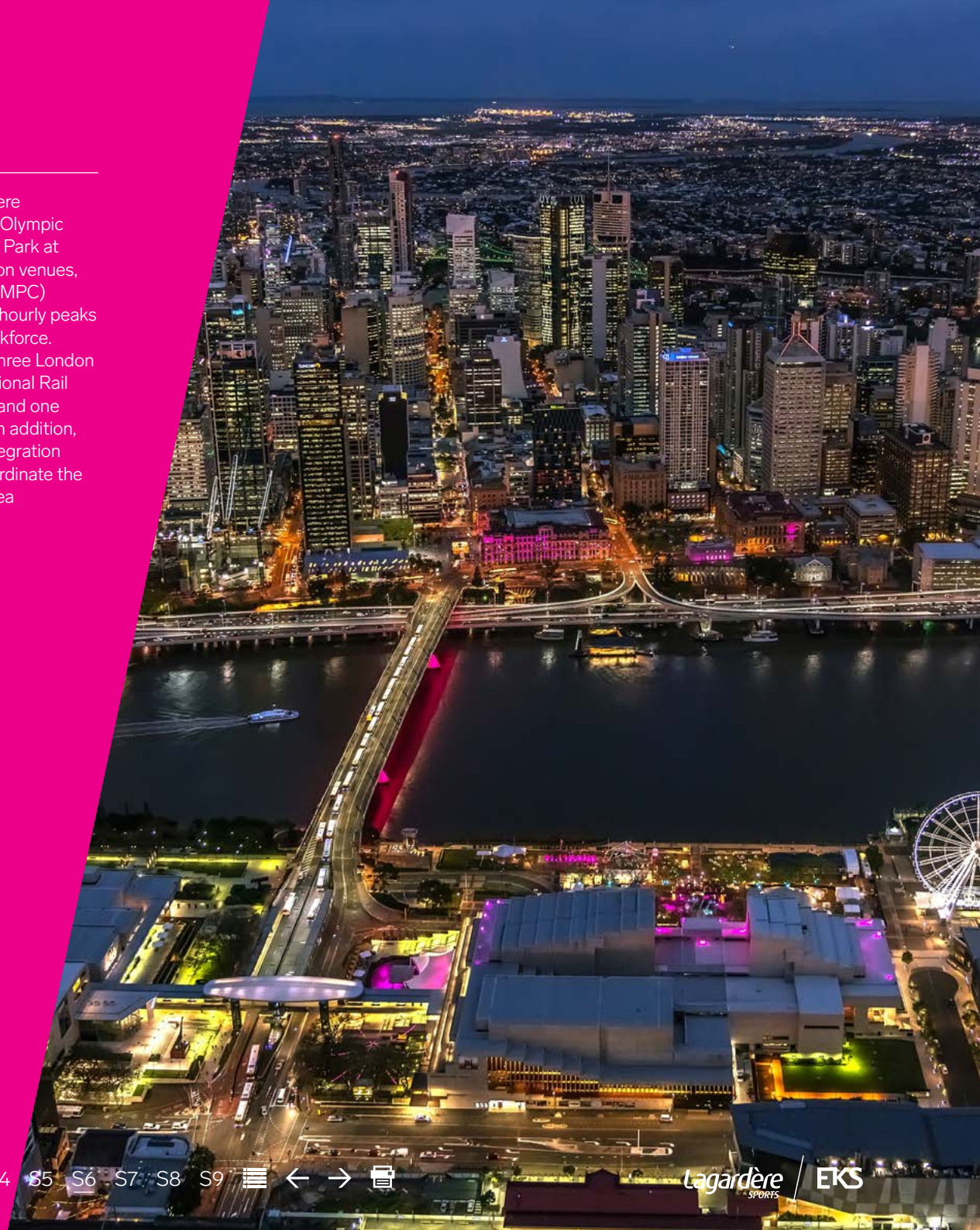


* Marketing Partners are not included

Compared with recent Olympic Games, the hourly peak demands are considered moderate. This is due to the distributed Indicative Master Plan among Brisbane and seven other SEQ Councils, which leads to a balanced spectator and workforce load across the Games footprint (a key criteria in developing the Indicative Master Plan). Lower peaks reduce the extent of the special transport systems required to address the Games demand. In addition, they allow for improved client experience and more effective transport and last mile operations.

Indicative examples from the last two Olympic Games include:

- In Rio 2016 Olympic Games, the highest hourly peaks were between 40,000 and 60,000 in multiple locations, such as the Olympic Park cluster in Barra (with eight competition venues, multiple training venues, the Olympic Village and the IBC / MPC), Maracanã Stadium and João Havelange Olympic Stadium for Athletics (Track and Field). Multiple metro, BRT and suburban rail services played a key role in serving the Games and city demand in these locations
- Even higher demand peaks were observed in the London 2012 Olympic Games. For example, Olympic Park at Stratford (with nine competition venues, Olympic Village and the IBC / MPC) exhibited considerably higher hourly peaks of 80,000 spectators and workforce. Olympic Park was served by three London Underground services, 12 National Rail services, one light rail service and one London Overground service. In addition, a special Games transport integration centre was established to coordinate the crowd flows in the last mile area



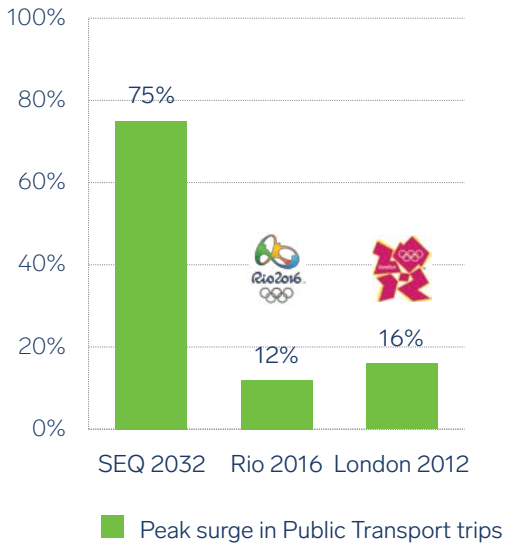
6.6.2 Public Transport for Spectators and Workforce

The following sections present an analysis of the capability of the existing and planned public transport network to address the spectator and workforce demand presented in section 6.6.1 above.

Note that the task of serving the workforce and spectator transport demand exclusively by public transport for the SEQ Games is a very challenging one. This is due to the proportionately very high surge in daily Games demand relative to the daily background load of the SEQ public transport system.

Figure 14 presents the ratio of the daily Games surge over the daily public transport background demand for SEQ, Rio 2016 and London 2012, along with the daily demand values. This figure displays clearly the size of the SEQ challenge: the SEQ public transport system is required to serve a surge of 75% of its daily load, that is a total of 3,040,000 trips (1,300,000 Games trips) versus a daily load of 1,740,000 million trips. In contrast in both Rio and London the Olympic surge was in the order of 10% - 15% of the daily public transport load.

Figure 14: Ratio of Games peak daily demand Public Transport background demand for SEQ and recent host cities



To address this challenge, several levers need to be considered, including:

- maximising the capacity of all public transport systems within related constraints such as signalling, power supply, rolling stock and vehicle fleets available
- tuning the Games schedule to avoid daily peak demand
- developing special Games transport systems (Games shuttles, park and ride shuttles)
- developing significant Travel Demand Management (TDM) initiatives to manage background demand, especially along the network routes that serve Games venues

The right combination of these levers needs to be capitalised upon to effectively deliver spectator and workforce demand for the Games.

6.6.2.1 Existing And Planned Public Transport To Serve Spectators And Workforce

During the Games, spectator and workforce transport will be provided by mass transport modes including the suburban rail, Brisbane Metro, Brisbane busways, Gold Coast and Sunshine Coast light rail, and the future faster rail system.

Suburban rail and faster rail will serve as primary transport modes for the Games. These two modes offer direct access to more than two thirds of the competition venues in Brisbane, as well as to the venues in Moreton Bay, Sunshine Coast and some of the venues in Gold Coast. Through the airport line, the network also provides direct access to Brisbane International Airport, supporting spectator arrivals and departures. Faster rail to Gold Coast, Sunshine Coast and Ipswich with limited stations along the route, will provide fast intercity transport connections for spectators, workforce and some Games Family client groups, such as media and T1-T3. Faster rail will also facilitate direct public transport access to competition venues located walking distance from its stations.

In Brisbane, the introduction of two high frequency Metro lines and extension of busways along north, east and south east will further enhance the reliability and capacity of public transport to serve the Games venues. The busways and Metro lines will also provide access to more than two thirds of the venues in Brisbane, including the cluster of venues in Chandler where no alternative mass transit system exists.

Spectators and workforce in Brisbane will also benefit from the dense network of city buses, including the high-frequency BUZ and CityGlider services in the inner city area.

In Gold Coast, the light rail line will connect two of the five venues, while suburban rail and faster rail will provide access to the balance of venues. Public transport access will be supported by local bus routes, some of them strengthened significantly, and will be supplemented by park and ride facilities and bus shuttles, much like the system developed for the Gold Coast 2018 Commonwealth Games. The light rail, after the planned extension, will also connect to Gold Coast Airport and will support spectator arrivals and departures.

In Sunshine Coast, all venues and the airport will be served by the planned light rail line supported by the network of local bus routes. Park and Ride facilities and services should also be considered.

The proposed passenger bus / rail service to Toowoomba will provide alternative access to Toowoomba venues, supplementing the long-distance service along the main rail line that currently operates with limited capacity. Park and ride services should be considered to supplement capacity shortfalls.

6.6.2.2 Capability of existing and planned Public Transport systems to serve spectator and workforce transport demand

Currently, SEQ residents depend heavily on their private vehicles for all types of trips. In Brisbane, only 10% of daily trips are performed using public transport, and the modal share of public transport is even less in Gold Coast (<7%) and Sunshine Coast (<2%). As per early modelling results (refer to SEQ Strategic Transport Roadmap) this picture will not change considerably by 2032 unless the bold changes proposed in the advanced scenario of the Roadmap are implemented. As noted in the introductory paragraph of this section, the low public transport demand in SEQ results in low business as usualcapacities of public transport, and the Games surge will stress the system much beyond the Olympic stress experienced by other hosts to date.

The capacities of those public transport systems that would serve Games venues in 2032 (based on the Indicative Master Plan) have been analysed against the expected spectators and workforce peak demand. Based on the analysis and planned alignment of public transport connections with the competition venues, key venues in Brisbane will benefit from excellent connections from hub stations such as Roma Street Station and South Brisbane Station as well as from existing experience of holding frequent sporting and non-sporting events in those venues.

In Gold Coast, public transport connectivity is either provided by light rail or the Gold Coast suburban rail line. This connectivity will be supplemented by strengthening key local bus routes, and, possibly, providing park and ride or direct shuttle services.

In Sunshine Coast, venues will benefit from the future light rail line, as well as from the proposed faster rail line. Adequate capacity exists in the public transport modes to serve Games spectator and workforce demand.

For some venues special systems including park and ride shuttles, or direct shuttles will be required. The experience of the Gold Coast 2018 Commonwealth Games indicates that this is feasible for SEQ. However, care needs to be taken to optimise the number of required resources (buses and drivers), since the state has limited resources and costs need to be limited.

6.6.3 Active Travel Options

Active transport is the most sustainable mode to access the Games venues. Maximising the use of active transport will also help reduce the load on the stressed public transport system of SEQ during the Games.

Brisbane has an extensive network of on-road and off-road bikeways and shared pathways across the city that connect to schools, local facilities, parks, public transport hubs and major employment centres. Key bicycle routes include the Bicentennial Bikeway, Kedron Brook Bikeway and Bulimba Creek Bikeway, as well as Veloways that run parallel to the Pacific Motorway and the Western Freeway and the Moreton Bay Bikeway linking Redcliffe, Brisbane and Redland Bay along the Moreton Bay coastline.

Brisbane City Council also operates the CityCycle bike hire scheme with 2,000 bikes and 150 stations linking bus, train and ferry terminals. Bicycle use is also supported with infrastructure such as park-and-lock bike racks, bike shelters, cyclepods and bike repair stations. A dedicated journey planner for bicycles is available from Brisbane City Council and provides information related to bikeways for desired journeys, location of bicycle parking and bike-share docks. Provisions also exist to integrate bicycle transport with public transport. Bikes are permitted on Brisbane trains and facilities to park the bikes securely are provided at many stations. Brisbane City Council invested AUD220 million between 2008 and 2016, and is investing AUD100 million over four years from July 2016 into the 'Better Bikeways 4 Brisbane' programme, which will extend Brisbane's network of bikeways and improve access to local destinations and the CBD.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As per the TMR strategic transport model, which takes into account many planned active transport projects, more than 12% of trips in Brisbane in 2031 will be performed using active transport modes.

For the Games, the existing network of cycle lanes and walkways maybe enhanced and integrated to form an Active Route Network (ARN) that will further facilitate and promote active transport during the Games.

6.6.4 Inter-urban Spectators and Workforce Transport

Inter-urban transport services will play a key role during the Games, given the Indicative Master Plan, which activates the entire SEQ region and the existence of significant accommodation facilities in Gold Cost and Sunshine Coast (in addition to Brisbane). By 2032, the inter-urban transport modes between the key Games origins / destinations will be strengthened due to the proposed faster rail project. However, it is critical to analyse whether this 2032 strengthened public transport network will be able to meet the transport requirements of spectators and workforce, as well as the background city / SEQ demand.

A similar analysis to the one presented in section 6.6.2 has been undertaken for inter-urban / regional transport. Specifically, the capacity of the regional rail systems that connect the key SEQ Olympic-related cities / areas has been compared against the expected peak demand during the Games. In this analysis, the peak daily demand for the major Games centres is considered, since it is not expected that regional spectators and workforce will travel just in time for a single session, arriving shortly before the start of the session and returning shortly after its conclusion. Furthermore, it is assumed that the daily travel demand from one urban centre to the other should be served within a four-hour window, typically during the morning hours for the first leg of the trip (origin city to venue city) and during the evening hours for the second leg (in the reverse direction).

Further to the above, certain assumptions have been taken into consideration for this analysis regarding the origins of spectator inter-urban trips:

- The spectator demand for the venues located in Brisbane that originates from other SEQ cities / areas (Gold Coast, Sunshine Coast and Western areas – Ipswich, Toowoomba) was estimated by a simple gravity model. The model takes into account the population of the relevant SEQ cities and areas, accommodation capacity, as well as distance, and provided the following:
  - 13% of Brisbane venues demand will originate from Gold Coast
  - 10% of Brisbane venues demand will originate from Sunshine Coast
  - 5% of Brisbane venues demand will originate from the western SEQ areas
- The spectator demand for venues located in the other three SEQ Olympic-related cities / areas (Gold Coast, Sunshine Coast and Ipswich / Toowoomba) originating from Brisbane was also estimated using similar gravity considerations. The following were estimated:
  - 31% of Gold Coast venue demand will originate from the other SEQ major urban centres and will use the M1 corridor (Brisbane – Gold Coast)
  - 34% of Sunshine Coast venue demand will originate from the other major SEQ urban centres and will use the M1 corridor (Brisbane – Sunshine Coast)
  - 59% of Ipswich / Toowoomba venue demand will originate from the other SEQ major urban centres and will use the Brisbane – Ipswich corridor

These inter-urban trips may be made by the following modes: private car, suburban rail and faster rail. The results below are based on the assumption that significant TDM initiatives will urge spectators to use the rail services in order to minimise the need for special Games systems (park and ride, park and rail, park and Brisbane Metro facilities and shuttles). Under this assumption only those spectators who may not use rail due to limited capacity will opt to use private cars. For those using cars, and under the principle of zero car access to venues, park and ride / rail / Metro services are necessary.

The capacity of the inter-urban rail services is presented in Table 23, under assumed Games-time strengthened schedules (headways) by corridor and system. The table provides the total capacity in passengers per hour per direction, as well as the capacity available for Games clients. It is also assumed that:

- Background demand will occupy about one third of the available capacity in the four hour period. Obviously this is an average occupancy; background occupancy may be considerably higher in the peak hour and lower in the off peak hours within the said period (under the strengthened headways)
- Games demand for Brisbane venues will occupy a fraction of the available capacity (approximately 10%) of the rail (faster and suburban) services that serve the inter-urban corridors. This has been assumed since these services will serve important city stations, however, those stations are served by multiple other services

At a later stage, and using Games transport modelling, the above percentages will be refined.

Table 23: 2032 Rail capacity per key corridor

Corridor	Rail line	Total capacity per train (pax)	Peak headway / direction (minutes)	Capacity / hour / direction (pax)	Games available capacity / hour / direction (pax) *	Games available capacity / direction in four hours (pax)
Brisbane - Gold Coast	Faster rail	750	7.5	6,000	3,600	**28,800**
	Gold Coast line / Airport line	750	7.5	6,000	3,600	
Brisbane - Sunshine Coast	Faster rail	750	7.5	6,000	3,600	**25,200**
	Sunshine Coast / Caboolture / Ipswich / Rosewood line	750	10	4,500	2,700	
Brisbane - Ipswich / Toowoomba	Faster rail	750	15	3,000	1,800	**14,400**
	Caboolture / Ipswich / Rosewood line	750	15	3,000	1,800	

* 30% of four hour rail capacity has been reserved for background intercity demand and 10% for other Games demand

Table 24: Peak intercity demand for Brisbane venues vs capacity*

From	To	Peak daily spectators and workforce	Demand from SEQ Olympic-related cities / areas to Brisbane		Games available capacity / direction in four hours**	Passengers who cannot be served by rail	Number of cars to be served in special facilities***
			% of total demand	actual demand			
Gold Coast	**Brisbane**	399.700	13%	50,200	28,800	**21,400**	**7,100**
Sunshine Coast			10%	38,900	25,200	**13,700**	**4,600**
Ipswich / Toowoomba			5%	21,100	14,400	**6,700**	**2,200**
						TOTAL	**13,900**

* All numbers are rounded to the nearest 100

** Capacity as per Table 23.

*** Special facilities: Park-and-Ride, Park-and-Rail, Park-and-Metro facilities
Average car occupancy (people): 3

Table 24 presents the requirements for interurban travel from Gold Coast, Sunshine Coast and Ipswich / Toowoomba to Brisbane venues, while Table 25 presents the respective requirements for trips from Brisbane to Gold Coast, Sunshine Coast and Ipswich / Toowoomba venues. In addition, these Tables compare the four hour demand values to the rail capacity that is available for the Games

The overdemand (if any) needs to be served by private cars and Park and Ride / Rail / Metro services. To estimate the number of private cars we have used an average occupancy of three persons per vehicle.

Table 25: Peak intercity demand for Gold Coast, Sunshine Coast and Ipswich / Toowoomba venues vs capacity*

From	To	Peak daily spectators and workforce	Demand from Brisbane to SEQ Olympics-related cities / areas		Games available capacity / direction in four hours**	Passengers that cannot be served by rail	Number of cars to be served in special facilities***
			% of total demand	actual demand			
SEQ region	**Gold Coast**	66,300	31%	20,500	28,800	**0**	**0**
	Sunshine Coast	67,200	34%	23,100	25,200	**0**	**0**
	Ipswich / Toowoomba	29,800	59%	17,600	14,400	**3,200**	**1,100**
						TOTAL	**1,100**

* All numbers are rounded to the nearest 100

** Capacity as per Table 23.

*** Special facilities: Park-and-Ride, Park-and-Rail, Park-and-Metro facilities
Average car occupancy (people): 3

Based on the analysis presented in Tables 24 and 25, it seems that 2032 rail services may not have adequate capacity to serve all interurban trips during the peak Games days. Consequently, the connectivity between the major Olympic-related SEQ cities should be strengthened.

Strategic park and ride, park and rail (using a service other than the designated ones for Olympic service) and park and Metro sites should be made available at carefully selected locations outside the respective cities, so that spectators and workforce can use them to park their cars and then take a bus shuttle, rail or a Metro to continue their journey towards the venues.

These locations should be carefully chosen, taking into account a wide range of factors, including the expected demand on the road network, the vicinity to mass transit systems, the availability of spaces and the cost effectiveness of the infrastructure and the work required.

6.6.5 Spectator and Workforce Transport Policies

On the day of their event, ticketed spectators should be provided with free access to all public transport (PT) modes in Brisbane, Gold Coast and Sunshine Coast, as well as selected PT modes connecting to venues in Toowoomba, Ipswich, Redland, Logan and Moreton Bay. This measure may be implemented by using Translink's GoCard system, or any other future ticketing systems / applications. Workforce and all accredited Games Family members should also be provided with free access to PT systems.

For regional (inter-city) transport special rates may apply to ticketed spectators and Games Family.

It is recommended that OTMR develops an Olympic journey planner to support all Games users and steer demand appropriately. The journey planner, accessible across mediums such as phone application and website, may incorporate personalised daily itineraries of spectators. Personalised messaging to ticketed spectators may also be provided based on origin information. In this case, the experience from the Gold Coast 2018 Commonwealth Games should be leveraged.

Policies should be enacted to prevent spectators parking in the vicinity of venues. Appropriate parking and traffic exclusion zones should be defined at each venue to streamline Games Family traffic flow. Parking for spectators with a disability should be provided at all venues, if this is feasible. For blue badge parking, and also for all park and ride / rail / Metro sites, advance web-based booking may be implemented, with priority to multi-ticketed spectator groups.

6.6.6 Feasibility - Spectator and Workforce Transport Perspective

The feasibility of delivering spectator and workforce transport for the Games is summarised in Table 26. This analysis is based on the requirements, recommendations, and findings of the previous Sections 6.1 to 6.5 and on the Indicative Master Plan. Any changes in the Indicative Master Plan may necessitate changes in the feasibility analysis.

On the day of their event, ticketed spectators should be provided with free access to all public transport (PT) modes in Brisbane, Gold Coast and Sunshine Coast, as well as selected PT modes connecting to venues in Toowoomba, Ipswich, Redland, Logan and Moreton Bay

Table 26: Feasibility analysis of hosting 2032 Olympic Games from spectator and workforce transport perspective

Requirement	Satisfaction of requirement	Comment
Public transport connectivity to Games venues		/ Most Games venues have public transport connectivity through mass transit modes
Public transport capacity to meet spectator and workforce demand		/ From preliminary analysis, it appears that SEQ public transport, if enhanced as proposed in *SEQ Regional Transport Strategic Roadmap* may address the Games demand in many cases. However, due to the size of the cities in SEQ and the low public transport modal shares, the public transport system will be strained significantly / To address this limitation, major special systems would need to be developed
Potential to meet any gaps in public transport connectivity and capacity		/ For venues with limited public transport connectivity or capacity, complementary options such as direct shuttle buses, park and ride shuttles will be necessary / It is estimated that significant resources are needed to address these shortfalls. These resources should be attracted from Queensland and other Australian states (such as NSW and Victoria)
Contribution of active transport		/ The share of active transport in business as usual mode in 2032 is low (for example <12% in Brisbane) / However, higher use is expected during the Games due to TDM measures
Inter-urban spectator and workforce transport		/ It appears that 2032 rail services will not have adequate capacity to serve all inter-urban trips during the peak Games days. The excess demand needs to be served by private cars and park and ride / rail / Metro services / Special Games systems (park and ride / rail / Metro facilities and bus shuttles) are required to strengthen the interurban connectivity

- Full satisfaction of all Games requirements
- Meets the majority of Games requirements
- Meets Games requirements at a basic level / minimal level
- Not able to meet Games requirements

Requirement	Satisfaction of requirement	Comment
Risks due to planned projects		/ No major risk is expected for city public transport services such as Brisbane Metro, Cross River Rail project in Brisbane, light rail extension in Gold Coast and new light rail in Sunshine Coast. These projects are advanced, with completion dates well before the Games / The faster rail project between Brisbane and Gold Coast / Sunshine Coast / Ipswich will form a key component of intercity transport and any potential risk in the delivery of the project will affect intercity transport
Zero car access at Games venues		/ Adoption of zero access car policy by residents is not expected to be met with any challenges. SEQ residents are accustomed to zero car access during major events
Free public transport for spectators and workforce		/ No challenges are foreseen in the implementation of free public transport access in view of the existing capabilities of Translink's GoCard


BRISBANE

6.7 Travel Demand Management and Games-time C3

The delivery of Games Family transport and spectator and workforce transport defined in Sections 6.5 and 6.6 should be supported by a comprehensive Travel Demand Management (TDM) strategy and an efficient Command, Control and Communications (C3) system. TDM measures are essential to encourage public transport use and reduce road traffic, especially during peak times and at critical hotspots throughout the Games period. The Games-time C3 structure needs to provide a framework for coordination with transport clients, to deliver strategic and tactical responses to transport operations and related incidents, as well as to ensure adherence to Games Family service levels. Both these transport delivery aspects are further defined in Section 6.7.1 and 6.7.2.

6.7.1 Travel Demand Management (TDM) Initiatives

The Olympic Games lead to unprecedented transport demand in the host city / region, concentrated at Games venue areas and accommodation areas, along key transport and traffic corridors, and at certain public transport hubs. The Games Family transport systems also generate considerable traffic on the road network, coupled with reduced road capacity for the city due to the Games Route Network. As a result, the business as usual mobility of the host city / region may be constrained, leading to longer travel times and heavier loads on public transport. Increased traffic congestion may, in turn, impact Games Family travel and related experience.

To address this challenge, host cities / regions capitalise on Travel Demand Management (TDM) strategies. During the Gold Coast 2018 Commonwealth Games, the three transport delivery partners (TMR, City of Gold Coast and the Games Organising Committee, GOLDOC) implemented an integrated TDM programme, designed to optimise the utilisation of the existing road infrastructure and public transport systems for the benefit of both Games clients and SEQ residents. Based on this significant experience, the Games should capitalise on Travel Demand Management (TDM), and develop an effective strategy aiming to match the demand with available capacity across public transport and road networks.

A comprehensive TDM strategy will influence travel behaviours in SEQ in the lead up to and during the Games, achieve traffic efficiency, and promote public transport use. This will help provide spectators, workforce and the Games Family a safe and comfortable mobility experience, while reasonable expectations may be set for SEQ residents.

The SEQ 2032 Travel Demand Management strategy should seek to:

- Redistribute travel demand: Enable short-term modifications to travel habits, with respect to routes, times of journeys or modes used
- Reduce travel demand: Provide advice to reduce non-critical journeys, or to avoid single-occupancy private vehicle use in certain zones or along certain routes, establish temporary parking control zones and / or traffic control zones in Games-sensitive areas
- Re-time travel demand: Efficiently manage critical journeys to minimise demand during peak periods. This may include changes in timings of city services (garbage collection, freight deliveries), home working and flexi shifts, peak time restrictions for some vehicle types (such as distribution logistics vehicles)

The TDM strategy should build upon a robust analysis of forecasted demand versus capacity of public transport and the road network. The preferred set of measures for the Games period should be selected by testing various options using the macroscopic and mesoscopic transport models that are available to TMR. The analysis should highlight the locations, Games days and times of day when increased pressure is likely to be imposed on public transport systems and on the road network, and develop appropriate solutions for these 'hot spots'.

The TDM strategy should also address the Paralympic Games, customised to the slightly different venue footprint, as well as to the particular circumstances of those Games (due to different competition schedule, mix of spectators).

TDM strategies should be customised by target group

A key aspect of the TDM strategy is to design and deliver customised initiatives to different target groups. All required information should be provided to spectators and workforce, to present available travel options. Based on demand analysis, clients should be channelled to public transport routes that avoid expected hotspots. Travel advice should also be provided to businesses operating in SEQ, retail shops, leisure destinations, public sector agencies and others enabling them to prepare their transport plans for the Games.

For the city commuters, information should be provided before and during the Games to enable them to understand whether their routine daily trips will be affected and what alternatives are available to them to reach their desired destinations. Changes in journey times, modifications in routes and modes and reductions in daily trips should be recommended.

Interoperable information systems and tools for efficient TDM implementation

A targeted and all-encompassing communication system will be a key factor for the successful and efficient implementation of all TDM initiatives. Leveraging the experience of the Gold Coast 2018 Commonwealth Games in this area, the Games should use all available communication channels in a targeted manner to disseminate TDM plans. Information should be provided in advance to all users to enable them to plan their journeys, as well as in real time to enable users to adjust to changes.

TransLink already operates a comprehensive journey planner for key public transport systems in SEQ region. Furthermore, the journey planner for the Gold Coast 2018 Commonwealth Games is a reference point for the Games and indicates that this is a task that TMR and the transport partners may carry out with confidence. Additional features, such as planning for disabled spectators and workforce, and targeted guidance for city commuters and businesses (for example, what to avoid, what to prefer) are necessary inclusions.

Other forms of communication, such as dedicated social media platforms, physical and digital transport guides and maps, radio announcements, email and SMS messages, as well as other channels powered by new, proven technology available in 2032 should be used to increase the reach of TDM related information.

The journey planner for the Gold Coast 2018 Commonwealth Games is a reference point for the Games and indicates that this is a task that TMR and the transport partners may carry out with confidence

6.7.2 Command Control and Communication (C3)

For the successful delivery of Games transport operations, it is necessary to plan for effective Games-time command, control and communications (C3) for transport. It is recommended that the Games-time transport C3 be a continuation of the pre-Games transport governance structure to capitalise on client familiarity with their responsibilities and operations, understanding of delivery plans and targets, and coordination and communication channels developed prior to the Games. Key principles recommended for planning an effective Games-time C3 for Games transport include:

- With respect to public transport and traffic, the C3 structure provides coordination among all transport and traffic agencies and operators, emergency services and relevant city operations across SEQ
- With respect to Games Family transport, the C3 structure provides top level command and control, while field operations are managed entirely by system operators and decisions are made at the lowest appropriate level
- The traffic side of transport C3 supports fully the delivery of promised travel times along the GRN and should support the safety and security of Games Family
- The C3 system ensures that there is a single hub for all information related to Games transport
- The C3 system builds upon the existing infrastructure and experience of the SEQ environment and all enhancements should fully consider the legacy for SEQ

All these principles have been addressed by the transport C3 system of the Gold Coast 2018 Commonwealth Games. Although the scope, geographical extent and participation of Olympic transport C3 will be much broader than for the Gold Coast 2018 Commonwealth Games, the Commonwealth Games model provides solid experience upon which to develop the Games transport C3 system.

The initial proposals presented below for the Games C3 system build upon the pre-Games governance scheme of Section 6.2, as well as on the existing roles and responsibilities of clients in SEQ. The proposals also take into account the successful practices from previous Games.

The senior leadership of the proposed Games transport C3 may be provided by the Games Transport Board, which will be responsible for public transport and traffic elements delivered by Olympic Transport and Main Roads (OTMR), and the transport leadership of the Games Organising Committee.

For transport C3 operations, it is recommended two relevant centres are established.

It is recommended that the Games-time transport C3 be a continuation of the pre-Games transport governance structure to capitalise on client familiarity with their responsibilities and operations, understanding of delivery plans and targets, and coordination and communication channels developed prior to the Games

The Public Transport and Traffic Coordination Centre (PTTCC) may be established and managed by OTMR to monitor the delivery of spectator and workforce transport, and to monitor traffic management along the GRN and at the venue local areas. The PTTCC will also act as the hub for Games transport information and will manage responses to emergencies that involve multiple agencies.

The PTTCC may include a management cell, which will manage centre operations, and multiple cells of client representatives. The management cell will be responsible for information dissemination, analytics and forecasting, while the client representatives of the other cells will ensure coordination with the command centres of service providers and other agencies.

The key client representatives in the PTTCC may include:

- TransLink and its operators (in Brisbane: Brisbane Transport, Airtrain Citylinks, Brisbane Bus Lines and Transdev Brisbane Ferries; in Gold Coast: G:Link and Surfside Buses; in Sunshine Coast: Sunbus and Buslink; in Toowoomba: Bus Queensland)
- Queensland Rail – for suburban and long distance rail transport
- non-TransLink operators for long distance and regional buses
- TMR – for traffic management along state-controlled roads
- SEQ Councils – for traffic management along council roads
- The Games gateway airport
- A representative for Games Family transport
- A representative for TDM and related public communications

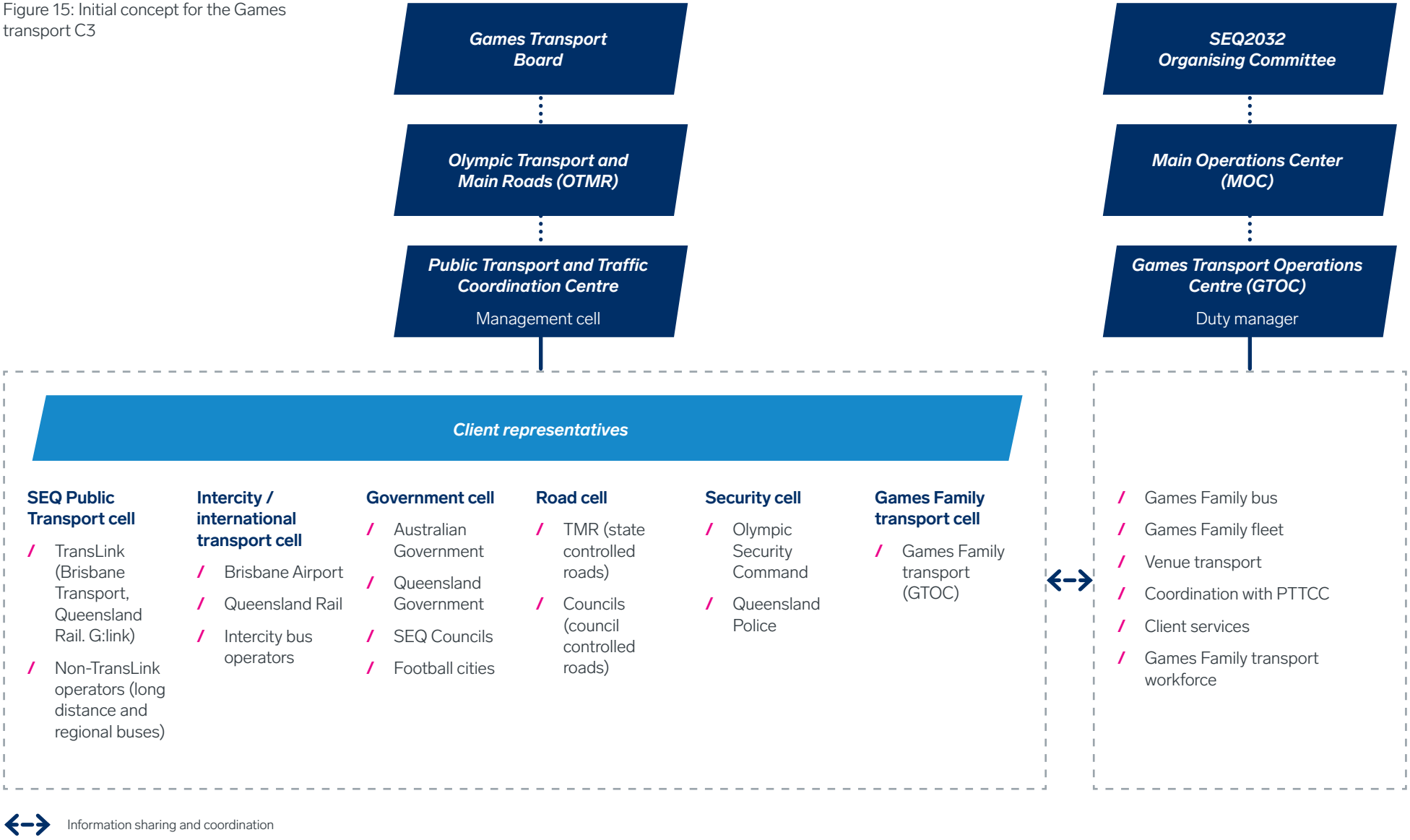
The above participants are indicative only. PTTCC participation should be considered carefully and agreed with all clients.

Alternative structures with distributed operations delivered from different sites (in Brisbane, Gold Coast and Sunshine Coast) should be also examined. The PTTCC (either in a centralised or distributed structure) should be implemented as overlay(s) at the existing Traffic Management Centre (TMC) facility (or facilities). The existence of such state-of-the-art facilities in SEQ provides assurance that the PTTCC may be developed taking full advantage of significant existing infrastructure and experienced staff in both business as usual and event modes.

The Games Family Transport Operations Centre (GTOC) may be established by the Games Organising Committee Transport Division to manage the delivery of Games Family transport services and support the Games Main Operations Centre (MOC). It is recommended GTOC focuses exclusively on Games Family and venue transport to manage transport delivery, provide strategic advice and resources as necessary, coordinate with PTTCC to streamline Games Family traffic along the GRN and manage all incidents and emergencies related to Games Family and venue transport.

The above proposals for Games transport C3 for the Games are illustrated in Figure 14.

Figure 15: Initial concept for the Games transport C3



6.7.3 Feasibility - TDM and C3 Perspective

The feasibility of delivering an effective TDM strategy and C3 mechanism is reviewed in Table 27.

Based on the above analysis, it is clear that SEQ is capable of delivering a strong Travel Demand Management strategy and an efficient mechanism for Games-time transport C3. Compared to host cities with more advanced public transport, the Travel Demand Management strategy for the Games will need to effectively address the challenge of decreasing significantly the share of private transport in SEQ during the Games.

- Full satisfaction of all Games requirements
- Meets the majority of Games requirements
- Meets Games requirements at a basic level / minimal level
- Not able to meet Games requirements

Table 27: Feasibility analysis of hosting 2032 Olympic Games from TDM and C3 perspective

Requirement	Satisfaction of requirement	Comment
TDM experience and effectiveness		/ Significant experience from TDM planning for the Commonwealth Games / Experience from multiple events in Brisbane and Gold Coast (G20, supercar racing)
TDM analytical tools		/ TMR has very advanced modelling capabilities at the macro, meso and micro levels to test and select the optimum TDM measures
TDM channels available		/ All available channels are being used for TDM under current TMR operations
Journey planner and other tools		/ Advanced journey planner of TransLink and traffic alert web portal of Queensland
Existing traffic / transport management centres		/ Advanced traffic management centres already in operation in SEQ, Brisbane, Gold Coast and Sunshine Coast
Collaborative culture among transport clients		/ Mature integration between the transport clients such as a single responsibility for public transport in SEQ under TransLink / Excellent integration among transport clients during the CWG
Experienced staff		/ Experienced staff working currently in multiple transport and traffic management centres
Experience with event C3		/ Experience from Commonwealth Games and other regular events in Brisbane and Gold Coast

Games Operations

7.1 Accommodation Capacity

Accommodation is a major feasibility consideration for SEQ. There are four main accommodation capacity drivers for the Olympic Games:

- IOC contractual requirements
- Games workforce including volunteers
- Games visitors / ticket holders
- Business as usual accommodation load

While accommodation for the Paralympic Games also requires a similar management and contracting solution, it does not generate the demand of the Olympic Games and therefore does not require analysis for the purposes of this Feasibility Study other than in relation to booking periods, general availability and accessible rooms, all of which has been considered.

The following analysis not only considers the Games time requirements and possible solutions to meet those demands, but also considers that, at Games-time, SEQ still needs to operate on a business as usual basis for many visitors. In particular, hotels have long-term contractual obligations, for example with airlines for air crew, corporate visitors and tourism operators who offer package arrangements. While some of this business may change during the Games period, some will not, so it is appropriate to assume that some accommodation inventory will not be available for Games use.

The analysis undertaken demonstrates that a regional accommodation solution is required to build up an inventory (supply) which can meet accommodation requirements (demand). Taking into account recent regional experiences during the Gold Coast 2018 Commonwealth Games, accommodation inventory will need to be secured prior to any possible award of the Games. This includes negotiated rates, or a formula to establish rates in the future, and other conditions to ensure a reasonable approach to rate setting. During the proposed Games period hotel occupancy across the SEQ area was at 72.2% in Gold Coast, 73.7% in the Brisbane region, 80.2% in Brisbane City and 63.7% in Sunshine Coast[62]. Given that this suggests that over 24,000 available hotel rooms and serviced apartments would be in use, it is highly probable that net displacement of business as usual occupancy is unavoidable. This can be mitigated to some extent by utilising other forms of accommodation to meet some of the Games-time demand.

[62] ABS Data – Tourist Accommodation, Australia 2015/16

7.1.1 Olympic Games Requirements

IOC (Games) Contractual Requirements

With reference to the most recent Olympic Games bid process (2024), 41,177 rooms were required to be contracted during the bid phase.[63] More recently the IOC's New Norm report[64] specifies that 41,000 rooms are required for the Olympic Games 'to take care of the accommodation needs of many stakeholders (referees, workforce, journalists, broadcasters, sponsors, etc.) at the Games'.

Workforce Requirements

This study has not developed a workforce model for the Games in SEQ. Based on the experience of the Gold Coast 2018 Commonwealth Games there was a substantial accommodation requirement for:

- Police
- Contract security
- Bus drivers
- General non-SEQ resident workforce

For previous Olympic Games, 75,000[65] to 100,000[66] contractors have been required across a range of services. A guideline, as applied in previous Olympic bids, suggests that 10% of this workforce may require short-term accommodation during the Games. This equates to 7,500 to 10,000 beds across SEQ. At this early stage of planning, a conservative estimate of the requirement for workforce is for 15,000 beds.

7.1.2 Visitors and Spectators

Games-time Visitors

Previous host cities have secured rooms to meet the wider needs of spectators and visitors. The London 2012 Olympic Games Post-Games Report (volume 3) indicated that LOCOG secured 57,000 additional rooms per night and 100,000 visitors per night utilised hotels / accommodation each night during the Games. The Economic Impact Report on the Sydney 2000 Games (2002) quantified the Games-time specific international visitors at 110,000, and although not included in the report, there were additional domestic visitors. These reports do not indicate how many of these international and domestic visitors were included in the 40,000 rooms secured to meet the IOC constituent needs.

Assuming that the Games in SEQ would attract over 100,000 visitors (consistent with the Sydney 2000 Games) for an average stay of four nights, then an additional 25,000 rooms (beds) are required across the 16 days of the Games in addition to the IOC requirements. This would not include the peaks to be expected around the Opening and Closing Ceremonies.

Table 28: Summary of Accommodation Demand

In summary, taking into account the three key categories of Games accommodation obligations the following estimates dimension the total requirement:

Category	Requirement
IOC Constituents – contractual requirements:	41,000 rooms
▪ *IOC stakeholder group*	*1,600*
▪ *Host OCOG*	*-2,400*
▪ *Future OCOGs (observers)*	*-400*
▪ *IFs (technical officials)*	*-4,200*
▪ *Marketing partners*	*-9,000*
▪ *Media – rights holder hospitality*	*1,500*
▪ *Media – broadcast w, written and photo press*	*18,500*
▪ *NOCs*	*-3,400*
Workforce	15,000 beds (assumed as rooms)
Visitors / spectators	25,000 rooms
TOTAL	**81,000 rooms**

[63] Olympic Games Guide on Accommodation – Sept 2015 – 2024 Bid Cycle

[64] Report by the Executive Steering Committee for Olympic Games Delivery - February 2018

[65] Business and Economic Benefits of the Sydney 2000 Olympics: A collation of evidence – 2002 (PwC for NSW Dept of State and Regional Development)

[66] London 2012 - https://www.olympic.org/london-2012 - London 2012 by the numbers

7.1.3 Accommodation Capacity – 2032

Accommodation capacity has been analysed in accordance with the zones of the Indicative Master Plan (Brisbane zone, including Redland, Logan and Ipswich, Sunshine Coast, and Gold Coast), considering current capacities and projected growth of hotel and serviced apartment stock. The analysis also considers other accommodation options, including potential media villages, legacy housing opportunities, school dormitories, tourist / caravan parks, the Australian Homestay network, visiting friends and relatives (VFR), Airbnb and cruise ships. This analysis provides an initial evaluation of capacity by 2032:

- Hotel and serviced apartment accommodation is likely to provide a total of 55,890 rooms across the region
- Other accommodation (excluding tourist / caravan parks, camping grounds, dormitories and homestay which have not been dimensioned at this time) is likely to deliver approximately 25,300 rooms

Based on this high-level analysis, an SEQ regional accommodation solution is viable. However this would require a significant focus on contracting rooms during any potential bid, as market forces are unlikely to support the efficient securing of inventory after a bid is won.

Unavailable Room Stock

For the purpose of calculating the available Olympic Games inventory, drawing on the experience of previous Games and bids in different markets, it has been assumed that an average of 10% of all hotel and apartment stock will be retained by operators for business as usual purposes.

On this basis, the total available Games inventory has been adjusted as illustrated in the table below:

Table 29: Current SEQ hotel / apartment capacity

Region	Total Available Rooms	Unavailable (10%)	Games Inventory (rooms)
Brisbane	18,500	1,850	16,650
Gold Coast	24,000	2,400	21,600
Sunshine Coast	2,000	200	1,800
Total	**44,500**	**4,450**	**40,050**

Projected Future SEQ Accommodation Capacity

With the inclusion of the additional rooms projected to be available in Brisbane by 2032, and applying those estimates to Gold Coast and Sunshine Coast, the accommodation capacity in 2032 could be:

Table 30: Forecast SEQ hotel / apartment capacity

Region	Total Available Rooms	Unavailable (10%)	Games Inventory (rooms)
Brisbane	25,800	2,580	23,220
Gold Coast	33,500	3,350	30,150
Sunshine Coast	2,800	280	2,520
Total	**62,100**	**6,210**	**55,890**

Based on this analysis and assuming full delivery of forecast room growth, it will be possible to meet the IOC contractual requirements using only hotel and apartment room stock. However, alternate accommodation types will be required to meet the gap between the projected Games demand of 81,000 rooms and the 55,890 (current plus forecast) available hotel rooms and serviced apartments.

7.1.4 Additional Accommodation Solutions

The current hotel and apartment room stock capacity can be supplemented to meet Games demands by:

- Aligning with long-term development plans in the region to provide village-style accommodation for some client groups
- Securing accommodation in dormitories, camping grounds, student accommodation, Airbnb and Australian Homestay, as well as offering home stay for visiting friends and relatives (VFR)
- Possible use of cruise ships

Some of these initiatives will reinforce positive Games impacts and create new opportunities for businesses in SEQ. These approaches have been successfully adopted by hosts for mega-events in other countries and in the Australian context.

Media Villages

Opportunities have been identified for media villages within Brisbane, and potentially should be explored at Gold Coast and Sunshine Coast, linked to legacy apartment developments in these areas. For the purposes of this analysis a single media village in Brisbane has been assumed.

Student Accommodation

There may be additional options to house Olympic stakeholders using student housing developments. The Queensland education economy is significant, contributing AUD2.8 billion of export earnings in 2015 (including over 123,000 international students) and planned to grow to AUD7.5 billion by 2026, with enrolments projected to reach 193,250.[67]

Research by Savills in 2018[68] indicated that Brisbane has almost 9,500 purpose-built student accommodation (PBSA) beds. During 2018, 3,450 beds were delivered to the Brisbane market, with a further 3,247 beds having development approval or under construction and programmed for completion in 2019. Assuming all developments are completed, there could be nearly 13,000 PBSA beds at the end of 2019.

With continued growth anticipated in this sector, there may be opportunities to identify further developments that are likely to be delivered prior to 2032 for use by Olympic Games clients during the Games.

Study Queensland advised that many users of student housing are short-term international students participating in ELICOS programmes (English Language Intensive Courses for Overseas Students) that operate in six-week blocks. With advance planning it may be possible to work with education providers, especially providers with campus facilities outside of SEQ, (such as CQ University) to relocate the ELICOS students, in order to free up student accommodation within SEQ for the Games period. This strategy may also provide economic benefits to other parts of Queensland through the Games.

[67] International Education and Training Strategy to Advance Queensland 2016-2026 (Qld State Government)

[68] Market Report 2018 – Australian Student Accommodation (Savills)

Other Accommodation

There are also options for accommodation solutions using:

- School dormitories
- Tourist / caravan parks
- The Australian Homestay network
- Visiting friends and relatives (VFR)
- Airbnb, Stayz and other home share facilities (particularly for spectators and Games-related visitors, but noting that some of this stock may already be included in the apartment stock)
- Cruise ships

In respect of the cruise ships opportunity, in October 2017, the Port of Brisbane reached an agreement with the Queensland Government to build the Brisbane International Cruise Terminal at Luggage Point[69]. The new terminal will be capable of hosting mega cruise ships, making it possible to cater for ships with over 1,500 staterooms[70]. The Brisbane International Cruise Terminal has a strategic partnership with Carnival Australia, an organisation that bases ships in Australia full time under the brands P&O[71], Princess Cruises and Carnival Cruise lines. The Brisbane International Cruise Terminal, Carnival Australia and other operators may provide the basis for a cruise ship solution to enhance the accommodation capacity during Games-time.

Summary of Capacity

The following provides a summary of non-hotel and serviced apartment accommodation capacity.

Table 31: Summary of non-hotel and serviced apartment accommodation capacity

Accommodation Type	Room Stock	Comment
Media village	3,000 - 4,000 beds	Final supply dependent on alignment with long-term plans and market absorption rates (beds assumed to be rooms)
Student housing	13,000	Beds - assumed to be single rooms
School dormitories	Unavailable	
Tourist / caravan parks	Unavailable	
Homestay network	Unavailable	
Airbnb	Over 300 properties listed in Brisbane city	Could also be included in the hotel / apartment stock (assumed an average Airbnb apartment will provide 1.5 rooms / beds)
Cruise ships	~ 9,000	Propose three to four large ships
Total	**approx. 25,300**	

[69] https://www.portbris.com.au/cruise/

[70] Further information is required regarding the number of ships that can berth at the International Cruise Terminal and the existing terminal for extended periods

[71] https://www.portbris.com.au/Media/News/NEW-CRUISE-TERMINAL-FOR-BRISBANE-IS-NOW-FULL-STEAM/

Table 32: Accommodation - Client Group Operational Considerations

Client Group	Operational Considerations
IOC / Olympic Family (IOC Members, IF and NOC Presidents and Secretaries General)	For ease of transportation, ideally this group is located in the Brisbane city area (to facilitate the IOC session (annual conference) and other operational meetings). Some could be accommodated in Gold Coast if easy access to the Brisbane city precinct can be guaranteed.
IF (technical officials and technicians)	The technical officials for each sport must be located together and have access to a single transport service (to avoid being collected from a number of hotels / locations). Suitable accommodation is required as close as possible to their respective competition venues.
NOCs (additional officials, guests and sponsors)	Additional NOC officials are largely serving their teams but cannot be accommodated within the village, so location close to the Village is important. NOC guests and sponsors will be attending competition and have no specific transport services provided to them. Hence their location is not a critical consideration.
Host OCOG (including Heads of State / Government dignitaries and guests)	Being the host country guests, key dignitaries guests should be centrally located in Brisbane city.
Observers	This operational group uses the Games as a learning opportunity in preparation for the delivery of their Games. The preference is for a single property for all Observers, ideally located in the Brisbane area close to the Organising Committee headquarters, to reduce the number of bus movements and collection / drop off locations.
Marketing Partners – TOP and OCOG	These guests of the Marketing Partners largely travel by bus, typically from hotel to competition venue, and / or 'experience', and back to the hotel. Guests rotate during the Games, with new guests arriving and departing every 3-4 days. Location is important, with the preference to minimise the total travel time in buses.
Marketing Partners workforce	The Marketing Partners workforce require suitably located accommodation near their guests, but for the duration of the Games a period prior to the Games to prepare.
Rights holder hospitality	As for the Marketing Partners.

7.1.5 Operational Considerations

Importantly, Olympic client groups have specific operational considerations with regard to accommodation types and locations. The IOC Olympic Games Guide on Accommodation (2015) specifies the following requirements for each key client group (which have been factored into the accommodation concept in section 7.1.6):

Client Group	Operational Considerations
Broadcast production and press	The media operate on a 24-hour schedule, aligned to competition and also their home nation time zone (and hence in many cases overnight). The print media and photographers move individually between the MPC and venues based on the competition schedule, sometimes attending many venues each day. They need to be able to move from hotel to MPC, and MPC to venues, and between venues. Location is of paramount importance to maximise reporting time and minimise transit time. Given this location constraint, the large volume of rooms required for this client group (18,500) as close as possible to high quality transport is challenging. The use of a potential faster rail link to Gold Coast and Ipswich would enable accommodation in these centres to be considered, reducing the reliance on a media transport service.
Grooms (Equestrian)	Grooms are NOC team members responsible for managing the horses in the Equestrian competitions. Their accommodation must be as close as possible to the stables and equestrian venue.
Workforce	Acceptable accommodation includes 2 - 3 bedroom apartments, dormitory style and tourist parks (cabins). Shared or twin share accommodation is acceptable.
Games-time visitors / spectators	Maximising the number of Games visitors is imperative to maximise the economic value of hosting the Games. Ideally this client group is accommodated in hotels and serviced apartments and will utilise public transport, but travel time is a less critical issue.

Table 33: Proposed Accommodation allocations

Stakeholder Group	Allocated Rooms	Proposed Location
IOC	1,600	The use of a mix of four and five star Brisbane city hotels is appropriate. To ensure sufficient rooms are available, one or more four or five star properties in Gold Coast will be necessary.
IF – technical officials and technicians	4,100	Assuming the percentage of technical officials is proportionate to athlete numbers, over 50% of the technical officials (approximately 2,100) will need to be located in the inner Brisbane area. Apartment accommodation may be suitable, however it will be necessary to utilise room stock held across over 24 properties. This may create transport challenges To mitigate this, allocations could be closely clustered in the CBD area. If there are suitable accommodation solutions close to competition venues it is preferable to locate the relevant technical officials as close as possible to their respective competition venues. There will also be an allocation to Gold Coast and Sunshine Coast for the technical officials for sports located in these zones.
NOCs – additional officials, guests and sponsors	2,400	It may be possible to prioritise allocations for additional officials to hotels nearby the village. The NOC guests may need to be accommodated in Gold Coast / Sunshine Coast in hotel and / or apartment style accommodation.
Host OCOG (including Heads of State / Government dignitaries and guests)	120	Best located in the Brisbane city area, but will also need Gold Coast and Sunshine Coast to meet the demand.
Observers	400	This is a relatively small group, best located in mid-level accommodation in the Brisbane city area.

7.1.6 Proposed Accommodation Concept

Noting the IOC contractual requirements, adopting high-level assumptions on the numbers of International and National Technical Officials and considering the projected room inventory in 2032, the following allocation plan identifies key issues with regard to some Games clients:

Stakeholder Group	Allocated Rooms	Proposed Location
Marketing Partners – TOP and OCOG	5,400	There is insufficient 4 and 5 star accommodation in Brisbane (after taking into account the allocation to the IOC group). The use of cruise ship(s) will be critical to deliver the volume of quality options for this key client group, and the Brisbane International Cruise Terminal may be able to facilitate large volumes of buses to pick up and drop off throughout the day. Depending upon the size of the cruise ships, two to three ships may be needed. Use of quality accommodation options in Gold Coast and Sunshine Coast, linked by efficient transport to Brisbane, will also provide a high-quality solution for this client group.
Marketing Partners workforce	3,700	Accommodation nearby the Marketing Partner guests is preferred, therefore two additional cruise ships may be the most suitable solution, and for Marketing Partners accommodated in Gold Coast, nearby apartment or hotel accommodation is preferred.
Rights holder hospitality	1,500	As for the Marketing Partners.
Broadcast production and press	18,500	The volume of rooms available does not meet requirements and specifications. Hence one or more Media Village(s) nearby the IBC / MPC and public transport will provide an accommodation solution for host broadcast production personnel. It is assumed that 3,000 – 4,000 may be accommodated in this location(s). Up to 14,500 further rooms will still be required in a mix of central Brisbane locations, close to the IBC / MPC, in the Gold Coast and Sunshine Coast and on the western corridor near Ipswich, as follows: / Brisbane – 12,650 rooms – need to be clustered together to enable efficient media bus transfers, or preferably on the rail corridor with easy access to the rail system: – Student accommodation – would need to access all available rooms (13,000 plus, assuming ongoing growth from 2019) / Gold Coast – 1,850 rooms (10% of total demand) – apartments / Sunshine Coast – 925 rooms (5% of total demand) – apartments / Ipswich – 925 rooms (5% of total demand) – apartments Note: IOC New Norm initiatives, in particular changes to the host broadcast production arrangements, may reduce the total media accommodation requirement by 2032.

Stakeholder Group	Allocated Rooms	Proposed Location
Grooms (Equestrian)	200	Onsite accommodation; may be a mix of existing cabins and temporary cabins, within the competition venue.
Workforce	15,000	As a planning assumption, it is assumed the workforce accommodation will match the spread of venues across the region. Therefore, there will be a need for accommodation as follows: / Brisbane (including Moreton Bay, Redland, Logan and Ipswich) 64% – 9,600 beds – use the balance of the 17,000-plus student housing beds, plus use dormitories and hostels / Gold Coast 12% - 1,800 beds / Sunshine Coast 12% - 1,800 beds / Toowoomba 5% - 750 beds[72] The use of hostels, backpacker accommodation, boarding schools and tourist parks with cabins will need to be maximised. As a point of reference, over 3,000 beds were contracted for contract security personnel for the Gold Coast 2018 Commonwealth Games, largely in Gold Coast. It may be necessary for the Workforce to be accommodated in the tourist areas of Gold Coast and Sunshine Coast (maximising the use of lower level shared use tourist accommodation stock) and travel into Brisbane as required.
Games-time visitors / spectators	25,000	Although a notional allocation of 25,000 rooms is proposed, the available room stock needs to be maximised to optimise visitation at Games time. Commercial accommodation providers (hotels, apartments, motels) need to be prioritised to cater to this group.

[72] The allocations do not include Regional Football venues outside of SEQ

7.1.6.1 Accommodation issues

The above allocation concepts identify some challenges that need to be addressed to ensure the accommodation needs of the Games can be met:

- Four and five star properties:
  - There is a need for nearly 7,000 rooms in 4 and 5 star properties in the Brisbane city area. The current room stock of this standard is 1,600, with new properties Westin (300 rooms), W-Hotel (312 rooms) and Star Resort (about 1,000 rooms in two hotels) not included in the current room stock (due to being incomplete, or having only recently opened). Even with these properties there may still be a deficit of over 3,500 premium rooms
  - The use of cruise ships for marketing partners will reduce demand on hotel rooms and has been provided as a solution at previous Games. However the lease and services costs are high, with the Games operating budget often having to absorb a subsidy to deliver rooms at an acceptable market rate
  - By allocating marketing partners to cruise ships, there will be capacity to cater for the IOC group, but there is insufficient capacity to cater for the higher standard accommodation needs of rights holder hospitality, IFs, the local NOC and the Organising Committee
- Media accommodation:
  - Outside of the proposed media village(s) that will primarily cater for the broadcast production staff, there is insufficient suitably located hotel stock in Brisbane for this client group
  - Additional rooms in Brisbane city could include:
    - Student accommodation
    - Apartments
  - Gold Coast could cater for the accommodation of several thousand media, but efficient public transport will be critical to support their operational demands. It would not be feasible to operate a media bus service from Gold Coast accommodation sites to the IBC / MPC because the travel time will not be less than the threshold duration of 60 minutes
- Apartments / student housing:
  - It is estimated 15,000 single room style accommodation options will be necessary for the technical officials and media
- Shared accommodation – dormitories, tourist parks, boarding schools:
  - 10,000 - 15,000 beds are required in group / shared accommodation options
- Visitor accommodation:
  - Additional hotel and apartment room stock is expected to be developed beyond the current window of 2024. Based on current projections use of some non-SEQ regional accommodation may be necessary if linked to appropriate travel solutions
  - Homestay accommodation options such as Airbnb may enhance the available room stock, but caution is required because some stock is double counted in the estimates of room stock
  - The strategic allocation of hotels, motels and apartments will be required to ensure that properties deemed not practical for other client groups are allocated to visitors. This may result in some less convenient locations and misalignment with transport, but is the preferred approach to maximise the opportunities to use all accommodation types across the region

7.1.7 Accessible Hotels

7.1.7.1 Accessible and inclusive hotels in Brisbane

Visit Brisbane's website[73], which provides a summary of accessible accommodation in Brisbane, demonstrates that there are approximately 50 accessible rooms with disabled access across 15 different properties in 2018.

The International Paralympic Committee (IPC) Accessibility Guide (2015) provisionally requires 50 accessible rooms in the Paralympic Family Hotel, 20 accessible rooms in Media Hotels and 40 accessible rooms in technical officials' accommodations. It also recommends that two thirds of these rooms meet 'wheelchair friendly' standards.

Based on the IPC requirements there are insufficient accessible hotel rooms in Brisbane in 2018. To meet the requirements by 2032, long-term planning and accommodation industry liaison will be required, which is also an opportunity for the SEQ accommodation sector.

[73] https://www.visitbrisbane.com.au/information/articles/accommodation/accessible-hotels-in-brisbane?sc_lang=en-au

7.2 Medical and Emergency Services / Emergency Response

7.2.1 Current Practice

Queensland has a sophisticated and regularly tested emergency response plan that responds to natural disasters. The plan was implemented in response to the 2011 floods that affected over 200,000 people in SEQ and caused more than AUD7 billion of damage to infrastructure. Queensland's emergency response preparedness is demonstrated during the annual cyclone season and was more recently tested during the November 2018 bushfires.

The proposed Games period of July / August is a low risk period for cyclones and related flooding events, as well as bushfires. The low risk environment ensures the emergency services workforce is likely to be fully available to support Games operations.

7.3 Hospitals

7.3.1 SEQ Hospital Network

Queensland Health has confirmed its network of public hospitals with more than 50 beds in SEQ comprises:

Table 34: SEQ Hospital Network

SEQ Region	Public Hospitals:	Beds
Brisbane	7	3,869
Ipswich	1	439
Gold Coast	2	1,173
Sunshine Coast	3	727
Moreton Bay	2	630
Toowoomba	1	372
TOTAL	**14**	**7,210**

Each hospital has extensive specialist services and five of the hospitals (three in Brisbane and one in each of Gold Coast and Sunshine Coast) are teaching hospitals.

Based on the location and capacity of the Royal Brisbane and Women's Hospital it is potentially the optimal choice for the Olympic hospital. It has over 900 beds and is the second largest hospital in SEQ. Its specialties include surgical and perioperative services, internal medicine services, women's and new-born services, nursing services, medical services, critical care and clinical support services, allied health, cancer care services, mental health services and oral health services.

Given the relatively close proximity of the potential Village site to existing medical facilities, it may be possible for theses medical facilities to deliver services previously delivered in the Village Polyclinic. The IOC New Norm recommendations allows 'for specific services and / or equipment not frequently used for the Games (for example, CT scans) to be provided at local hospitals within reasonable distance of the Olympic Village instead of within the Olympic Village Polyclinic'. For Tokyo 2020, major components of Polyclinic services have been accommodated in a medical facility near-by the Village with consequential substantial cost reduction and more effective legacy for the medical facility.

7.4 Safety and Security

The security requirements for the SEQ Olympic and Paralympic Games will be very significant during both the planning and delivery phases. The budget and resources will be substantially more than were required to successfully host the recent Gold Coast 2018 Commonwealth Games. The challenges will be particularly testing for the Organising Committee, which will be responsible for safety and security within the venues, and the Queensland Police Service (QPS), which will be the lead policing and security agency with responsibility for a diverse array of activities outside the venues as well as response functions within venues. Nevertheless, providing there is a genuinely collegiate, forward thinking approach by the Olympic organisers and all Queensland and Australian Government security partners, including the sensible application of security risk management, it is reasonable to expect that an appropriately safe and secure Games can be delivered.

The security for the Sydney 2000 Olympic and Paralympic Games was successfully delivered by the Organising Committee for the Olympic Games (OCOG) and the New South Wales Police (NSWPOL) with a budget of AUD177 million (although the bid estimate for security in 1992 was AUD47.5 million). Other New South Wales agencies (such as the Department of Health, Waterways, Department of Premier and Cabinet, Fire Brigade) expended a further AUD37 million against security associated activities. The additional Australian Government contribution involved expenditures of over AUD100 million, including the deployment of 5,622 Australian Defence Force (ADF) personnel to support the NSWPOL-led security operation.

While the Sydney 2000 budget and resource requirements are a reference point, they are not the benchmark against which the security requirements for a potential SEQ bid should be assessed. Similarly, the Athens 2004, Beijing 2008, London 2012 and Rio de Janeiro 2016 Olympics each had unique characteristics in relation to their respective threat environments, security organisational structures and partner interdependencies, legislation and licensing and commercial frameworks. So too will Tokyo 2020, Paris 2024 and Los Angeles 2028. Nevertheless, it is worth noting the safety and security budget included in the successful Paris 2024 bid is USD208 million, reflecting the intent to use sophisticated emerging technologies that could be more economic than previous Games practices, as well as considerable support by the French military.

The most important consideration is the IOC's Host City Contract requirements related to security. It is a requirement that the budget is based on the principles and methods required to develop a plan that will deliver this prestigious international major event to the reasonable expectations of the IOC, the Queensland and Australian Governments, the athletes, the officials and the public. In particular, the Olympic Games is not a security event of the nature of a major political summit, recognising there will be more than six million tickets sold to spectators; rather there is the expectation of professional protection in a reasonably non-invasive manner.

The IOC bid requirements for safety and security are relatively straight-forward. Candidate cities must demonstrate they can develop a secure operation to manage security and safety risks. They are required to employ the international standard on Risk Management (ISO 31000) to project forward to Games time and provide risk ratings for hazards, articulating the mitigation strategies they will use to manage risks appropriately. Hazards requiring assessments include fire, civil disobedience, crime, terrorism, traffic accidents, natural catastrophes, cyber interference and illegal intrusion into Olympic facilities.

Since its adoption for the Sydney 2000 Games, Australia has been a lead proponent in the application of ISO 31000 for security risk management. The Terrorism Threat Advisory System provides key inputs into security risk analyses in relation to the threat posed by terrorist-related activities. The Australian Government administers the five-level system and the current terrorism threat level is PROBABLE, which means '...credible intelligence, assessed by Australian security agencies, indicates that individuals or groups continue to possess the intent and capability to conduct a terrorist attack in Australia'. Any planning for the 2032 Games will necessarily need to factor in the prevailing national terrorism threat level, albeit recognising if there is any reduction or escalation in that threat level before 2032 it will impact the security budget.

Planners should anticipate that a 2032 Games delivery model will require 100% security screening of all people and materials entering key Games venues, particularly at the Olympic Village, the main stadium, the venues for Opening and Closing Ceremonies (if different from the main stadium), the IBC / MPC and any well-patronised 'live sites' (as places of mass assembly). In the past, these onerous requirements have proven quite resource-intensive and expensive. London 2012 had a substantial security budget overrun to over GBP1.2 billion and incurred serious international embarrassment when its exclusive security guard provider failed to deliver even one-third of the projected 18,000 guarding personnel, necessitating the involvement of the Ministry of Defence (MOD) (which had to urgently deploy uniformed service personnel to address the shortfall).

Important lessons have been learned from the London 2012 Games and other more recent events, including security guarding issues at the Gold Coast 2018 Commonwealth Games. The challenges in standing up an efficient and effective private security guarding operation are considerable and require long lead times for planning and adroit execution. It is essential to de-risk that aspect of the operation by contracting several providers and not repeating the London mistake of engaging a single provider. Wherever possible the Organising Committee should contract the providers already operating within existing venues.

Importantly, proven technology should be used to reduce the need for large private security numbers. By deploying modern screening technologies and using radio frequency identification (RFID) technology in accreditation passes and barcoding on tickets, the pedestrian throughputs should be increased from an average of 375 per channel per hour to over 450 per hour. As occurred successfully at the Sydney 2000 Games, legislative and regulatory amendments are recommended that enable the Games volunteer workforce to augment the cadre of licensed security guards. Critically, the ADF should be engaged to provide its personnel, drawing heavily on reservist elements, to supplement the Games security force.[74] At all recent Olympic Games, in addition to pivotal venue search and lock-down duties, the host military forces have played a key role in staffing all vehicle check points and logistics screening facilities. Paris 2024 plans to deploy 10,000 military personnel to support the security and policing operation during the Games.

During consultation conducted for this report, a meeting was held with senior representatives of the QPS and Queensland Government. QPS successfully discharged its recent Gold Coast 2018 Commonwealth Games responsibilities within the agreed budget envelope. QPS is constantly reviewing its future infrastructure and service delivery requirements, and it continues to actively progress a five year program of work in this regard, albeit with an aspirational lens to the 2030 operating environment. This is a sound and well justified assertion, particularly as QPS recently won the Gold Award for its delivery of security for the Gold Coast 2018 Commonwealth Games at the Prime Minister's Awards for Excellence in Public Sector Management.

[74] Note that 1,700 ADF personnel were deployed on Operation Atlas at the Gold Coast 2018 Commonwealth Games whereas 5,622 ADF personnel were deployed on Operation Gold at the Sydney 2000 security operation

In short, provided there is long-term adroit planning and sourcing of an appropriate mix of private security personnel, police, military and vetted volunteers, the security workforce numbers required for 2032 should be attainable.

The logistics to support a combined security workforce of approximately 35,000 will be complex and challenging. However, best practice indicates this should be managed under the umbrella of the wider Olympic Games logistics programme (including staff travel, accommodation and catering) to avoid any internal competition or duplication of effort. Furthermore, a regional Games might provide additional accommodation and home-hosting options than would occur in a more centralised Games model.

The Command, Control and Communication (C3) model and architecture for the security of a 2032 Games should not prove overly challenging in Queensland. A state-of-the art Joint Emergency Services Coordination Centre (JESCC) opened on the Gold Coast in 2017 as a Commonwealth Games funded asset for QPS. The completion and successful operation of the JESCC demonstrates the commitment and acumen of QPS to develop the necessary infrastructure, and implement best-practice Command and Control doctrine for major events. Together with a continuing commitment to its Mobility Capability Program, and other progressive digital technologies, the QPS is well placed to design and deliver the necessary command and control infrastructure to deliver a successful 2032 Olympic operation. It is anticipated, as at other Olympic Games, that the Organising Committee security operation centre will be a temporary facility adjacent to or in close proximity to the Organising Committee's Main Operations Centre, operational on a 24 / 7 basis for a period commencing shortly before the opening of the Olympic Village until the conclusion of the Paralympic Games.

Emerging complex challenges for the security of international major sports events include maintaining the integrity of airspace protection, particularly with the trend for incursions by unauthorised unmanned aerial vehicles (UAVs or drones). Also, proliferation of cyber-attacks, both by state-sponsored agents and by rogue hackers and frauds, is an increasing concern for the security of international major events. While there will undoubtedly be a requirement for further investment in strategies and resources to mitigate the risks from these particular threats before 2032, there are two positive points worth noting:

- The Australian Government is already taking a lead role in relation to mitigating these emerging threats as they have significant relevance to the current national security environment
- QPS developed valuable experience dealing with these threats during the recent Gold Coast 2018 Commonwealth Games

7.5 Commercial Protection of Olympic Partners

7.5.1 National Legislation

The Olympic Insignia Protection Amendment Act 2001 defines the Australian Olympic Committee (AOC) as the owner of the copyright to the Olympic symbol and Olympic designs; and prohibits the commercial use of the Olympic symbol and Olympic expressions unless the user holds a licence granted by the AOC.

Supporting that legislation, the Australian Olympic Committee (AOC) retains a register of licensees to whom licenses for the use of the Olympic symbol and Olympic expressions have been granted.

7.5.2 Queensland Legislation

7.5.2.1 Major Events Act

The Major Events Act 2014 updated for the Gold Coast 2018 Commonwealth Games in 2018, provides for a range of purposes[75], including:

- To enable the state to hold major events in Queensland
- To deliver economic and social benefits for the State of Queensland by attracting major events to Queensland
- To facilitate the safe and orderly running of major events
- To promote the enjoyment of participants and spectators of major events
- To prevent unauthorised commercial activities in relation to major events
- To allow visiting health practitioners to be exempted from having to register under state law when practising a health profession for a visitor

The relevant sections of the Act relating to commercial protection of the 'Major Event' include:

- Control of airspace
- Limits on commercial activity for major event
  - Selling during control period or major event period
  - Resale of tickets (preventing ticket scalping)
  - Marketing and advertising (preventing ambush marketing)
  - Official logos or titles (protection of the event brand marks)

For this Act to apply to the Olympic Games, the event must be declared a Major Event. Further refinements may be required to the Act to deliver other protections. As demonstrated by the amendments delivered for the Gold Coast 2018 Commonwealth Games, amendments are handled expeditiously.

[75] QLD Major Events_Act-2014-060_July 2017

7.5.3 Major Sports Facilities Act 2001 - Stadiums Queensland[76]

The Major Sports Facilities Act seeks to ensure major events can be attracted to Stadiums Queensland venues by protecting advertising and branding arrangements between hirers, tenants, naming rights sponsors and other commercial partners involved in the event.

Assuming the Olympic Games would be deemed a 'Major Event' under the Major Events Act, the Major Sports Facilities Act would be redundant.

7.5.4 Summary

The existing national and state legislative framework can accommodate the requirements of the Olympic and Paralympic Games. For past major events governments have been effective in addressing any additional requirements within this framework and have amended legislation as required.

The regulatory requirements for previous events have also been effectively managed by local councils and other regulatory agencies. Details of the regulations to be applied for the Games would need to be considered in greater detail relative to the Indicative Master Plan and operation of the Games across SEQ and potentially Queensland. Based on precedent there is no reason to consider that either regulation or legislation presents a feasibility risk. The experience of past events hosted in Australia and SEQ demonstrate the effectiveness of the arrangements to support a potential bid.

7.6 Customs and Immigration Procedures

Australia has some of the most stringent customs and immigration procedures in the world. That said, through the hosting of major events, Australia has demonstrated the ability to welcome athletes, team officials, media and other international guests (including their equipment) into Australia, while still observing the customs and immigration protections standards maintained by successive Australian governments.

The Australian Government has not been directly engaged during the preparation of this report, however it is assumed to be unlikely that there would be substantive change to the policies and support delivered to previous major events in Australia. There may be adjustments (due to the scale of the Olympic Games) to existing arrangements to ensure service levels can be met and that Australia's capability and reputation as a major event host is enhanced. This may have some cost implications that need to be addressed in a more detailed financial analysis.

7.7 National, State and SEQ Experience of Hosting Major Sports Events

Australia has an extensive history of hosting major events and a proven track record in relation to the hosting of major multi-sport events, dating back to the 1956 Olympic Games in Melbourne. For the purposes of this report a filter has been applied based on the IOC 2024 Candidature Questionnaire that requires bidding cities to list 'all international Multi-Sports Games and major international competitions in Olympic sports that have been organised in your city and country over the last ten years and that have been awarded to your region'.

[76] http://www.stadiums.qld.gov.au/Policies/Declared-Events.aspx

7.7.1 Event Hosting Experience

Table 35: Event Hosting Experience

Olympic sport / discipline	Name of event	Date	Level of competition	City
Major Multi Sport Events				
Various	Gold Coast 2018 Commonwealth Games	Apr 2018	International	Gold Coast
Various	Invictus Games	Oct 2018	International	Sydney
Various	World Masters Games (IMGA)	Oct 2009	International – participation based	Sydney
Major Annual Events				
Athletics	Gold Coast Marathon	July	International[1]	Gold Coast
Golf	Australian PGA	Nov	International	Gold Coast
Rugby	HSBC Sevens Series	2016 - 2019	International	Sydney
Tennis	Australian Open	Jan	International Grand Slam	Melbourne
Tennis	Brisbane International	Jan	International	Brisbane
Sport Specific Events				
Aquatics – Diving	FINA Diving Grand Prix	Nov 2018 Nov 2019	International	Gold Coast
Aquatics – Swimming	Pan Pacific Swimming Championships	Aug 2014	International	Gold Coast
Badminton	Sudirman Cup	May 2017	International	Gold Coast

Olympic sport / discipline	Name of event	Date	Level of competition	City
Basketball	AUS v USA	Aug 2019	International 'friendly' – World Championship warm up	Melbourne
Cycling – Mountain Bike	UCI Mountain Bike World Championships	2017	World Championship	Cairns
Cycling – Mountain Bike	UCI Mountain Bike World Cup	Apr 2014 Apr 2016	International	Cairns
Cycling – Mountain Bike	UCI Mountain Bike & Trials World Championships	Sep 2009	World Championship	Canberra
Cycling – BMX	UCI BMX World Championships	Jul 2009	World Championship	Adelaide
Cycling – Road	UCI Road World Championships	Sep 2010	World Championship	Geelong
Cycling – Track	UCI Track Cycling World Championships	Dec 2019	International	Brisbane
Cycling – Track	UCI Track Cycling World Championships	Apr 2012	World Championship	Melbourne
Football	AFC Asian Cup	Jan 2015	Asian Confederation	Various
Golf	World Cup of Golf	2013 2016 2018	International	Melbourne

Olympic sport / discipline	Name of event	Date	Level of competition	City
Golf	Presidents' Cup	2011 2019	Not Europe	Melbourne
Golf	Australian PGA	2002 – 2012	International	Sunshine Coast
Gymnastics	World Cup Gymnastics	Feb 2017 Feb 2019 Feb 2020	International	Melbourne
Hockey	Champions Trophy (men)	Dec 2012	International	Melbourne
Hockey	FIH Pro League	Feb / Mar 2019	International	Various
Rowing	FISA World Cup	Mar 2013 Mar 2014	International	Sydney
Rugby	HSBC Sevens Series	2012 to 2015	International	Gold Coast
Sailing	ISAF World Championships	Dec 2011	World Championship	Perth
Triathlon	ITU World Triathlon Series	Apr 2015 Apr 2016 Apr 2017	International	Gold Coast
Triathlon	ITU World Championship Series Grand Final	Sept 2009 Sept 2018	World Championship	Gold Coast
Triathlon	IRONMAN 70.3 World Championship	2016	World Championship	Sunshine Coast

7.7.2 Summary

The event hosting experiences of Australia and specifically Queensland are considered to be of a high standard and demonstrate the requisite capabilities. Therefore, event hosting experience is likely to be a strength in any potential Games bid.

7.8 Register of Other Operational Issues Relevant to the Games Concept

With reference to key functional areas identified in the IOC Olympic Games Guides,[77] the following table summarises issues identified with respect to a SEQ Games:

Table 36: Other operational issues

Functional Area	Issue / Comment
Accreditation	The Gold Coast Commonwealth Games demonstrated the ability to integrate the visa processing and Games accreditation processes, although the visa requirements in Australia are rigorous and regularly changing.
Arrivals and Departures	See commentary in section 6.3.4 of this report.
Brand, Identity and Look of the Games	No issues expected.
Ceremonies	This report has not addressed the conduct of the Ceremonies and has not addressed specifically the location of the Opening and Closing Ceremonies. The IOC is currently considering the delivery model for Ceremonies to make the Ceremonies more accessible to the citizens of the Host City. SEQ offers numerous opportunities to deliver a Ceremony concept that is not solely stadium based, allowing for broader showcasing and public access across the city / region and potentially reducing the capacity of the main stadium. This concept could potentially deliver a unique spectacle and should be further explored with the IOC. No feasibility issues have been identified at this time.
City Activities and Live Sites	Festival sites and / or live sites could be strategically located across the SEQ region, and in other regional centres, to ensure broad engagement and participation / access to the Games. These elements are significant and can be delivered with the support of all levels of government. The extent and scale of these sites will need to be considered against the available budget and required impact. No feasibility issues have been identified at this time.

[77] The Olympic Games Guides (OGGs), produced by the IOC, are designed to support Organising Committees for the Olympic Games (OCOGs) in the successful planning and delivery of the Olympic Games and the Paralympic Games. The OGGs are reference documents provided to the OCOG for information and guidance purposes.

Functional Area	Issue / Comment
City Operations	The Olympic Games in SEQ could have a significant impact on the region with regard to the business as usual operation. In accordance with the Indicative Master Plan, there could be an impact across the entire region, most notably in the three primary hubs (Brisbane, Gold Coast and Sunshine Coast). Significant planning will be required to enable these hubs to operate at Games time, with strategies to be developed to reduce 'daily demand' road traffic and to encourage businesses to adjust their operations during the Games period. Similar planning will be required in each city or area with competition, non-competition and training venues. As such, all local government areas directly impacted by the Games will need to be prepared to resource, plan and deliver Games-time specific operations and services.
Communications (and public engagement)	The communications and public engagement challenges of the Olympic Games are considerable and all typical requirements and challenges can be expected in SEQ. Specifically, for SEQ, there will be complex local issues to manage and address based on geographical and geo-political issues in the state and country. For the Games to be successful in SEQ, there will need to be strong Australia-wide support for the hosting of the 2032 Olympic Games. As experienced for the Gold Coast 2018 Commonwealth Games, the important task of building national awareness and support will be both challenging and potentially expensive. Within Queensland there will also be challenges with local issues and sensitivities within communities, requiring targeted and location-specific strategies that ensure ongoing support for the conduct of the Games.
Digital Media	This area is constantly changing and the requirements by 2032 are difficult to predict at this time. However, based on demonstrated increases in digital media access from Games to Games, the digital media programme will provide significant opportunities to engage with communities locally in SEQ and internationally.

Functional Area	Issue / Comment
Event Services	While Australia has extensive experience in hosting major events and weekly sporting events with significant volumes of spectators, a major task in organising an Olympic Games will be to resource the spectator services function to support Games patrons safe and enjoyable experience. As a benchmark, Sydney 2000 recruited 2,500 paid staff / contractors plus allocated 11,500 volunteers to the Events Services function. London 2012 had 15,000 Event Services volunteers – the same number as the total Gold Coast 2018 Commonwealth Games volunteer workforce. Recruiting and training this significant component of the Games workforce is a major undertaking and provides a significant engagement and legacy opportunity for the local community. There is an existing culture of volunteerism in Queensland.
Financial Management	Financial management will be a critical success factor but is not considered a specific feasibility factor given the local probity and financial management culture within SEQ and the broader Australian government and private sectors.
Food and Beverage	Similar to Event Services, the management experience and expertise to deliver excellent food and beverage services exists in Australia and Queensland. It is assumed that these services will largely be delivered using an outsourced model of experienced contractors. That said, the scale of operation will be unprecedented in SEQ and the contractor workforce required to deliver the services will include tens of thousands of casual staff. The casual workforce is expected to be difficult to recruit solely from within SEQ and workforce drawn from outside of SEQ will require accommodation, placing pressure on the limited accommodation resources. A long-term strategy is required to develop a suitable workforce and prepare the industries to enable the maximum benefit to the local market. [The same approach is required for the contract security and cleaning markets to develop a suitably qualified resource pool and employment conditions to encourage short term employment in these contractor roles.]
Language Services	The official languages of the IOC are French and English. At all IOC Sessions, simultaneous interpretation into German, Spanish, Russian and Arabic should also be provided. In addition, over 200 countries participate in the Games, featuring many different languages. As such, delivery of language services is a critical requirement of the Games. While it is expected that the diverse population base in SEQ could support the delivery of volunteer conversational interpretation, there is also a substantial need for professional interpretation and translation services.

Functional Area	Issue / Comment
Press Operations	Media coverage, and the related management of the media, is enshrined in the Olympic Charter: **Rule 48 Media Coverage of the Olympic Games** **1.** The IOC takes all necessary steps in order to ensure the fullest coverage by the different media and the widest possible audience in the world for the Olympic Games. **2.** All decisions concerning the coverage of the Olympic Games by the media rest within the competence of the IOC. By-law to Rule 48 **3.** It is an objective of the Olympic Movement that, through its contents, the media coverage of the Olympic Games should spread and promote the principles and values of Olympism. Australia has a proven history of ensuring freedom of the press and the necessary IOC requirements for the media, including delivery of services to the media (press and broadcasters) at the Sydney 2000 Olympic Games, more recently at the Gold Coast 2018 Commonwealth Games, and regularly when hosting other major international events. The challenge is in the scale of media operation that is required with: / 13,000 rights holder personnel / 5,800 written and photographic press, technicians, support staff and non-rights-holding radio and television personnel / 1,500 accredited photographers The services to this key group need to be assured and prioritised. In addition to the group detailed above, there are non-accredited media. These members of the broadcast and print media do not receive Olympic accreditation but still attend the Games and file reports from outside venues. Host Cities provide services for these media personnel to ensure they have access to Games information, but also information about the Host City and tourism. For example during Sydney 2000 the Sydney Media Centre was established by the NSW State Government on Darling Island and over 5,000 non-accredited media registered to use this centre.[78]
NOC Services	No feasibility issues have been identified at this time.

[78] Business and Economic Benefits of the Sydney 2000 Olympics: A collation of evidence – 2002 (PwC for NSW Dept of State and Regional Development) – page 72

Functional Area	Issue / Comment
Olympic Family and Dignitary Services	While the number of international dignitaries attending the Games varies, it can be anticipated that the Games will be attended by a broad range of Heads of State / Government, dignitaries, captains of industry, sports stars and celebrities. There will be more Heads of State / Government than the attendance at the G20 Summit in Brisbane in 2014. As such, the preparation level required and associated security is a significant challenge. Refer to commentary in section 7.4 regarding security arrangements.
Olympic Torch Relay	The Sydney Olympic Torch travelled from Greece, through Oceania and then covered 27,000 km in Australia, with 11,000 torch bearers. More recently the IOC has opted for the Torch to travel directly from Olympia, Greece to the host country only. The Torch delivers an opportunity to engage Australia into the Games, and while there are no specific issues identified at this time, the Torch should be approached as an opportunity for all Australians.
People Management	**Paid staff and contractors:** As a reference, Sydney 2000 engaged more than 3,300 paid staff and over 86,000 contractors. London 2012 engaged over 8,500 paid staff and over 110,000 contractors. The Organising Committee will need to recruit a workforce within the range of 4,000 to 8,000 personnel and additional contractors from a relatively small market. Building and retaining the Organising Committee workforce will present challenges, but also creates opportunities for employment programmes, training, internships and other initiatives that deliver long term legacies to the region. Planning for employment outcomes requires a targeted programme that should commence during the bid. **Volunteers:** Sydney 2000 engaged more than 40,000 volunteers; similarly London 2012 engaged more than 42,000 volunteers. Australia has a history and culture of volunteerism and no significant challenges are anticipated in recruiting the required number of volunteers. The most significant challenge for SEQ may be managing an oversupply, given that the 2018 Commonwealth Games organisers received more than 47,000 applications to fill approximately 14,000 positions. The Sydney 2000 Olympic Games, Melbourne 2006 Commonwealth Games, and Gold Coast 2018 Commonwealth Games all demonstrated the community engagement benefits and opportunities that SEQ and Queensland can anticipate through the large scale volunteer programme required for the Olympic Games.

Functional Area	Issue / Comment
Sport	Australia has a reputation of delivering events of a high technical standard. Arguably some Olympic / Paralympic Games sports are less well developed and hence less popular in Australia. Linked to this, in some cases Australia lacks hosting experience of any international level events in the last ten years. However, by working with the sports and governments to attract and host suitable events to build the necessary experience, this perception can be overcome (not necessarily through the hosting of numerous world championships, but suitably sized international events).
Cultural Olympiad	No feasibility issues have been identified at this time and the Cultural Olympiad provides an opportunity for the cultural community to showcase Australia's diverse cultural offering, including the Indigenous culture that was showcased exceptionally during the Gold Coast 2018 Commonwealth Games.
Ticketing	No feasibility issues have been identified at this time.
Wayfinding Signage	No feasibility issues have been identified at this time.
Paralympic Games	The Paralympic Games have been identified as an area of opportunity for Queensland and SEQ following the success of the integrated parasport events during the Gold Coast 2018 Commonwealth Games. Additionally, state and local government accessibility policies have established high levels of accessibility as the base standard, reflected in policies related to urban spaces, buildings, venues, public transport and other areas.

7.9 Scheduling the Games

7.9.1 IOC Defined Dates of the Games

The dates of the Olympic Games are determined by the IOC Executive Board.

The duration of the competitions of the Olympic Games shall not exceed sixteen days and the dates of the Olympic Games shall be chosen within the period: 15 July to 31 August 2024 (IOC Candidature Questionnaire for the 2024 Olympic Games).

For the purpose of the feasibility analysis, it is assumed the dates of the Games in SEQ will be within the window defined by the IOC.

The issues related to the feasibility of hosting the Games in this Games window are addressed in sections 7.9.2 to 7.9.3 below.

7.9.2 Holiday Dates

7.9.2.1 School Holidays

It is critical that the Olympic Games[79] are held in a school holiday period to enable:

- Reduced baseload traffic
- Reduced load on public transport
- Availability of school and other buses that could be used for Games purposes
- Availability of student accommodation
- Availability of students and teachers for volunteer programme

The following are the school holiday periods in June / July / August in 2019 and 2020:

7.9.2.1 School Holidays

Table 37: School Holidays 2019 and 2020

	Term 2 holidays				Term 3 holidays			
	2019		2020		2019		2020	
	Start	End	Start	End	Start	End	Start	End
QLD	29 Jun	14 Jul	27 Jun	12 Jul	21 Sep	7 Oct	19 Sep	5 Oct
Other states								
ACT	6 Jul	21 Jul	4 Jul	19 Jul	28 Sep	13 Oct	26 Sep	11 Oct
NSW	6 Jul	21 Jul	4 Jul	19 Jul	28 Sep	13 Oct	26 Sep	11 Oct
NT	29 Jun	22 Jul	23 Jun	23 Jul	28 Sep	13 Oct	26 Sep	11 Oct
SA	6 Jul	21 Jul	4 Jul	19 Jul	28 Sep	13 Oct	26 Sep	11 Oct
TAS	6 Jul	21 Jul	4 Jul	19 Jul	28 Sep	13 Oct	26 Sep	11 Oct
VIC	29 Jun	14 Jul	27 Jun	17 Jul	21 Sep	6 Oct	19 Sep	4 Oct
WA	6 Jul	21 Jul	4 Jul	19 Jul	28 Sep	13 Oct	26 Sep	11 Oct

[79] It is not considered necessary to align the Paralympic Games with school holidays given lower loads and resource demands

- Assuming the same or similar dates will be maintained for the second term school holiday period in 2032, the July / August IOC defined Games window falls outside the traditional school holiday period. Therefore, consideration of a change to the school term and school holiday dates will be required to support the hosting of the Games. The school holiday dates are based on each term having a duration of ten weeks.

Within the IOC defined Games period, there are two possible windows that could align with adjusted school holiday dates:

- 17 July to 1 August
- 14 to 29 August

The Queensland Department of Education has informally suggested that either option could technically be implemented if necessary, however, a number of material issues would need to be resolved long-term.

7.9.2.2 Public Holidays in Queensland

The only public holiday in the IOC defined window in SEQ is the Royal Queensland Show (EKKA) Holiday in Brisbane, occurring on the Wednesday during the RNA Show period. The EKKA commences on the first Friday in August, unless the first Friday is prior to 5 August, in which case it commences on the second Friday of August. In 2032 the Show Holiday is expected to be Wednesday 14 August.

A specific agreement will be required with Royal National Agricultural and Industrial Association of Queensland (RNA) management who stage the EKKA. It is noted that the scheduling of exhibitions / 'shows' is generally coordinated on a state-wide basis and an overall show calendar consideration is required long-term.

7.9.3 Meteorology

Following is a summary of the meteorological conditions in SEQ during the IOC defined dates for the Games:

Table 38: Summary of SEQ meteorological conditions

	Brisbane[80]		Gold Coast[81]		Sunshine Coast[82]	
	July	August	July	August	July	August
Temperature						
Mean maximum (degrees Celsius)	22.0	23.3	21.2	22.1	21.2	22.2
Mean minimum (degrees Celsius)	10.3	10.7	12.0	12.4	9.6	9.8
Rainfall						
Mean monthly rainfall (mm)	25.3	38.0	46.5	58.2	64.0	75.0
Mean number of days of rain >1mm	3.6	3.7	5.0	4.3	6.6	5.2
Wind Speed and Direction						
Mean 9 am wind speed (km / h)	8.2	8.5	13.7	15.5	14.9	15.8
Mean 3 pm wind speed (km / h)	11.3	13.2	19.9	22.4	18.9	21.2

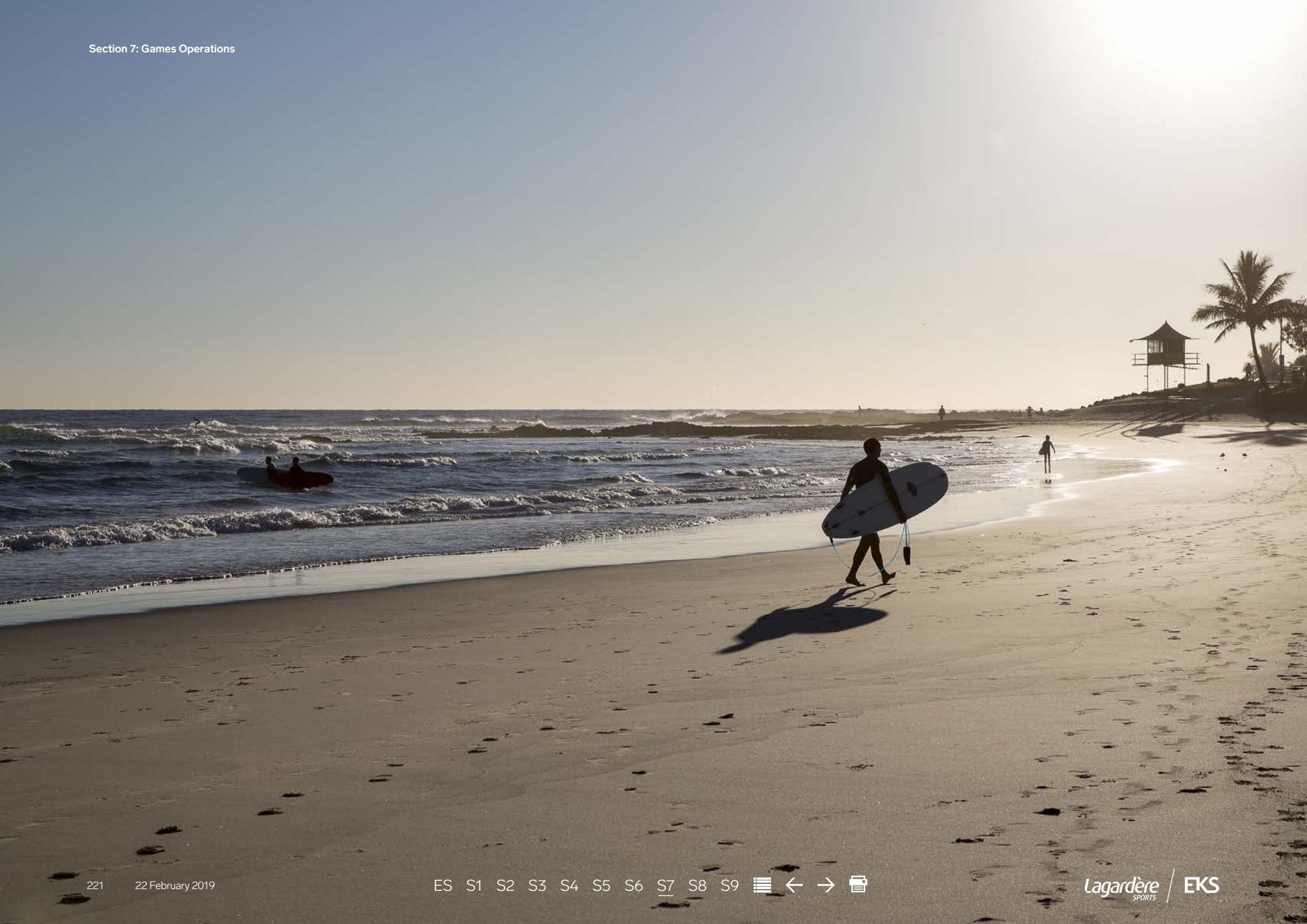
[80] Bureau of Meteorology monthly climate summary statistics – Brisbane
[81] Bureau of Meteorology monthly climate summary statistics – Gold Coast Seaway
[82] Bureau of Meteorology monthly climate summary statistics – Sunshine Coast Airport

Table 39 - Comparison of other Capital City temperatures

	Sydney[83]		Melbourne[84]		Adelaide[85]		Perth[86]	
	July	August	July	August	July	August	Jul	Aug
Temperature								
Mean maximum (degrees Celsius)	16.4	17.9	13.1	14.4	14.9	16.1	18.4	19.0
Mean minimum (degrees Celsius)	8.1	9.0	5.4	5.7	7.5	8.0	7.8	8.3

The weather is stable, with very few rain days, but it is noted that the mean minimum temperatures could be perceived as low for an Olympic Games. There is no option available to host the Games in summer conditions in Australia within the IOC defined window.

[83] Bureau of Meteorology monthly climate summary statistics – Sydney
[84] Bureau of Meteorology monthly climate summary statistics – Melbourne
[85] Bureau of Meteorology monthly climate summary statistics – Adelaide
[86] Bureau of Meteorology monthly climate summary statistics – Perth



7.9.4 Date of the Games recommendation

Considering the issues detailed above, the period for the 2032 Olympic Games in Queensland is proposed to be as late as possible within the IOC defined period, to maximise the overlap with the warmest weather during the available period. Hence it is proposed the Games are held as follows:

- **Friday 13 to Sunday 29 August:**
  - Friday 13 August – Opening Ceremony
  - Saturday 14 to Sunday 29 August – competition
  - Sunday 29 August – Closing Ceremony

This period will also enable the Paralympic Games to be held six weeks later, in October, reducing the impact on the key venues for the Queensland major professional league teams, and maximising the media attention within Australia (occurring after the AFL and NRL Grand Finals).

The proposed 12-day window for the Paralympic Games is:

- **Tuesday 5 to Sunday 17 October:**
  - Tuesday 5 October – Opening Ceremony
  - Wednesday 6 to Sunday 17 October – Competition
  - Sunday 17 October – Closing Ceremony

7.10 Feasibility – Operations Perspective

Table 40: Summary of feasibility analysis – Games Operations

Requirement	Satisfaction of requirement	Comment
Meet Games accommodation requirements while providing adequate business as usual capacity (Existing and planned investments / capacities considered)	◑	/ Accommodation capacity is a substantive feasibility factor and will require focus if a Games bid is to progress. An initial review indicates only a regional solution will meet Games requirements and reliance on IOC New Norm flexibility principles will be required as will the alignment of planned residential developments to accommodate Media and the Olympic Villages. Some displacement of business as usual visitors is likely
Provide medical and emergency services to meet all Games related risks and support non-Games community needs (Existing capacities considered as Games requirements exceeded and no additional capacity required)	●	/ SEQ / Queensland has existing medical services / hospitals which would meet all Games requirements and a sophisticated emergency response plan, that is regularly tested responding effectively to natural disasters
Provide a safe and secure environment in which to stage the Games (Existing and planned investments / capacities considered)	●	/ The relatively benign security environment in SEQ / Australia and the effective and well-coordinated multi-tiered approach to major event safety and security, will meet Games requirements across all policy, legislative and command and control aspects. While overall the various 'blue light' agencies are well trained and equipped, the Games will place significant demands on capacities. The supply of paid security staff will also require careful planning and attention. While presenting a challenge, the practices of the past indicate these can be met
Enable the Games commercial and partnership programme through protection of intellectual property rights and prevention of ambush and parasite marketing (Existing status and event precedents as an indicator of future status considered)	●	/ The commercial protection of major event sponsors / partners is well defined through existing general and specific legislation and regulation at national, state and regional levels. There is an established practice of adopting any additional measures in a timely manner which responds to evolving technologies and circumstances
Provide for the efficient and 'friendly' entry of Games participants (all categories including media) and their equipment with an Olympic Identity and Accreditation Card acting as or being enabled to provide a basis for visa entry to Australia (Existing status and event precedents as an indicator of future status considered)	●	/ Customs and immigration procedures in Australia have supported the conduct of a wide-range of major events. Subject to the continuation of policies which support this it is anticipated that a Games in SEQ would meet all related customs and immigration requirements subject to the retention by Australia of the right to reject entry of any individual where there are substantive grounds

●	Full satisfaction of all Games requirements
◕	Meets the majority of Games requirements
◑ ◔	Meets Games requirements at a basic level / minimal level
◔	Not able to meet Games requirements
No rating	Circumstances do not allow a rating to be applied

Requirement	Satisfaction of requirement	Comment
Demonstrate major event hosting capability (Existing status as an indicator of future status considered)	●	/ At a national, state and SEQ level a range of major sports and non-sports events have been hosted and comprehensively demonstrate both the appetite for and delivery capability in regard to major sports events
Deliver other operational elements to enable the conduct of successful Games including: / Accreditation / Arrivals and departures / Brand, Identity and Look of the Games / Ceremonies / City activities and Live Sites / City operations / Communications (and public engagement) / Cultural Olympiad / Digital media / Event services / Financial management / Food and beverage / Language services / People management / Press operations / NOC services / Olympic Family and Dignitary Services / Torch Relay / Sport / Signage and wayfinding / Ticketing / Paralympic Games (Existing status as an indicator of future status considered)	●	/ While each of these aspects of the Games presents its own unique set of circumstances and operational challenges, in all instances there is sufficient evidence of capability and capacity to meet reasonable Games requirements benchmarked against current practices and recent major event experiences in Australia / In some instances, the manner in which requirements will be met relates to financial parameters (for example Ceremonies and the Cultural Olympiad) which are, to some extent, discretionary / For other aspects, such as City operations, the investment in transport infrastructure is a key determinant of the effectiveness of solutions for the long-term which will enable Games operations


RIVERBAR
&KITCHEN

Finance, Governance and Engagement

8.1 Funding Arrangements

The focus of most feasibility studies for major events is the financing cost of the event. While this is a matter of importance for a potential SEQ Games it is not the key determinant. The rationale is that if one accepts the analysis (refer section 8.1.4) in relation to the net cost of the Games, taking into account IOC and private sector funding, then already it has been demonstrated in Queensland that the state, in conjunction with the two other levels of government, can fund a major event (Gold Coast 2018 Commonwealth Games) with a higher net operational cost and a likely lower net benefit in terms of economic, social and environmental uplift. Therefore, it can be argued that the threshold question of 'can the Olympic Games be staged in SEQ' is not answered by merely examining the net operational costs.

Table 41: Net Operating Costs - Olympic Games compared with Commonwealth Games

Gold Coast 2018 Commonwealth Games	
18 sports / 26 disciplines 1.2 million tickets Duration 11 days	
Operating Cost*	AUD1.4 billion
-	
Less Domestic revenue	AUD(0.2 billion)
Net Games Operating Cost	**AUD1.2 billion**

* AUD2.015 less Venue, Facility and Village costs (Ahead of the Games Report Nov 2017)

SEQ 2032 Olympic Games	
28 sports / 40+ disciplines Over 6 million tickets Duration 15 days (plus Paralympics)	
Operating Cost**	AUD5.3 billion
Less IOC Revenue	(AUD1.7 billion)
Less Domestic revenue	(AUD2.7 billion)
Net Paralympic Games Operating Cost	**AUD0.5 billion**
Net Olympic Games Operating Cost	**AUD0.4 billion**

** Subject to ongoing review following future application of IOC 'New Norms'

Beyond the consideration of net operational costs, the impact on capital investment is clearly an area of focus. Elsewhere in this report analysis is provided in relation to required competition and non-competition venues and the related transport solution to move people to and from these venues. This focus is most relevant in understanding the required capital investment to stage the Games.

As a result of comprehensive consultation and analysis of current projects and future plans across the region, the following summarises the context within which capital funding arrangements for a SEQ Games can be considered.

- While upgrading of existing competition venues will be required (much of which will need to be undertaken to maintain the venues regardless of the Games) and the funding for planned venue development committed within current or future development plans, the analysis shows that the Games can be conducted in SEQ without the need for Games-specific venue capital expenditure
- Two key non-competition venues will be required and will need to be developed. This includes the main Olympic Village and the Main Media Centre (International Broadcast Centre and Main Press Centre)
  - The analysis shows that existing planned accommodation development in Brisbane can accommodate the Olympic Village as long as land is reserved and the development schedule synchronised. While arguably the scheduling effects can give rise to cost, the more significant issue is to ensure that the staged supply of the residential units to the market can be sensibly accommodated in terms of matching demand and where required, funding provided in the development model for deferred sales if necessary. Fortunately, the significant population growth in the region will mitigate such cost
  - The Main Media Centre requirements are reducing based on the IOC's New Norm cost reduction drive. For now, the Indicative Master Plan, which is the basis for this study, is benchmarked on historical requirements (higher than future) and has identified the opportunity to align a priority precinct development in Brisbane with the staging of the Games. This will provide a Main Media Centre facility which will be repurposed following the Games, meeting legacy needs. The costs of the Main Media Centre fitout are absorbed in the Games operational budget however the costs of repurposing and completing the development will be borne in the capital programme of legacy building. This will provide an incremental cost to base development however the core costs of the facility relate to long-term requirements of the city and are not Games-induced costs
- Required transport infrastructure, particularly regional public transport, has been examined in a separate but related study (Regional Transport Strategic Road Map for SEQ). While there are no proposed Games-induced transport infrastructure investments given the long-term nature of such assets, regional connectivity has been identified as a major feasibility factor for the Games given the distributed regional accommodation solution required to meet Games-time requirements and the positive legacy impacts of a regional master plan. The acceleration of transport infrastructure investment is a strategic objective for SEQ and the Games can play an appropriate role in focusing investment to achieve this. However, the Games of themselves do not determine the transport investment road map

8.1.1 Role of Government

Based on recent Australian precedents the following summarises the likely key areas of responsibility of government in the event of staging the Games:

- **Australian government**
  - Secondary funder (capital programme is considered separately)
  - Jurisdictional control and delivery of some security elements within established protocols
  - Jurisdictional control and delivery of customs and immigration
  - Jurisdictional control and delivery of taxation and related Games policies
  - Jurisdictional control and delivery of spectrum management; and biosecurity management
  - Destination promotion and marketing
  - National trade and Investment promotion
  - Legislation to support event conduct (if not already provided) and IP protection
  - High level dignitary protocol support
  - Provision of weather forecasting services
  - Support for Australian athletes
- **Queensland government**
  - Primary funder and underwriter
  - Coordination of capital development which is Games related
  - Cross government coordination and portfolio governance
  - Legislation to support event conduct (if not already provided) and rights protection
  - Jurisdictional control and delivery of some security elements within established protocols
  - Jurisdictional control and delivery of health services
  - Jurisdictional control and delivery of public transport and road operations
  - Jurisdictional control and delivery of VIP programmes and protocol
  - Government communications and community engagement
  - Interface with the cultural community to deliver the Cultural Olympiad
  - Destination promotion and marketing
  - State trade and Investment promotion
  - Legacy programmes
- **Local government**
  - Funding co-contributor
  - City operations
  - City continuity and resilience
  - Local roads management
  - By-law enforcement including environmental health inspections
  - City look and presentation
  - Focusing of public facility maintenance and upgrading
  - Legacy programmes
  - Community consultation

While the above provides an initial high-level summary, one of the first tasks to be undertaken should it be decided to bid for the Games, is to establish a comprehensive responsibilities matrix which will better define roles and responsibilities. This should include a strategic analysis of what opportunities exist to deploy existing agencies to reduce the breadth of the traditional OCOG responsibilities to support greater legacy and cost efficiency.

8.1.2 Role of the Private Sector

The private sector will play a broad range of roles in providing goods and services for the delivery of the Games. As experienced in the recent Gold Coast 2018 Commonwealth Games, there is a well-developed major event supplier base in Australia which can be complemented by a sophisticated international market. There are no immediately apparent supply-side constraints which would prevent the staging of the Games in SEQ provided lead times for international procurement of speciality equipment, heavy or bulky items are allowed for, given freight timelines.

In addition to the supply role, the sponsorship / partnership opportunities with the private sector play a key role in funding the Games operational budget, promoting the event and engaging the community. As major event partnerships move from branding and hospitality opportunities to deep fan and supporter engagement, the opportunity exists to enhance the areas of private sector involvement and to broaden the revenue platforms increasing yield. These private sector partnerships also offer potential long-term benefit to SEQ through legacy relationships.

While elsewhere in this report it is confirmed that there is no requirement for a specific Games capital programme, any venue or infrastructure legacy investments provide a significant opportunity to attract private sector funding. Through the development of the Indicative Master Plan, a range of significant and attractive private sector investment / partnership opportunities have been noted.

8.1.3 Community Support

While not initially a direct financial factor, the overall support of the community does ultimately impact Games financing in relation to ticket and merchandise sales and the support of Games partners / sponsors. The impact of the policies of the Games stakeholders in terms of ticket accessibility and pricing, as well as the need for a unified and positive relationship with the community, NGOs and interest groups, is often underestimated.

The broader and perhaps more important initial facet of community support is the need to assure government and city leaders that their constituents consider the Games a worthy development opportunity and that the effort required to stage the event is not better directed elsewhere. The appetite for the Games in SEQ is yet to be fully tested, however, polling by YouGov Galaxy found 56% of residences support SEQ bidding for an Olympic Games if it helps fast-track new transport and other infrastructure and support increased to 68% among millennials (Courier Mail - 20 Oct 2018). Media reporting also indicates a foundation of support.

8.1.4 Operational Budget Analysis

8.1.4.1 Overview

A summary of potential revenues and expenditures has been developed to provide context for the determination of a future bid by SEQ and is intended to be indicative of possible results for an Olympic and Paralympic Games in 2032. This summary is based on a high-level benchmarking of potential results using the financial projections of the three 2024 Olympic Games bids as well as the results from London 2012 and Sydney 2000. The summary also includes a reference to the IOC New Norm initiative and its potential effect on the overall expenditures.

The summary is based on the IOC template of revenues and expenditures that Olympic bid cities have been required to submit as part of their candidature. At this stage, given lack of any detailed planning for the event, it is not possible to develop robust financial estimates based on a bottom-up evaluation of operating plans and the operating cost environment in SEQ. If a decision is made to move forward with a bid, a more in-depth financial study will be required.

The Olympic Games have evolved considerably since Sydney 2000 and this is indicated by significant changes in the financial model. Sydney 2000 figures have been included more as a reference point than a benchmark. However, it is clear that the IOC are striving to simplify the Games and return them to a cost model closer to Sydney 2000 in the future. The summary of potential revenues and expenses has been largely modelled on current practice. A preliminary estimate of New Norm savings, relative to the figures for the 2024 bids and the London 2012 Games, has been included and there is potential for further savings and revenue growth in the future as the New Norm reforms take hold.

The expenditure model does not take into account the costs of government services such as security, public transport and federal support for immigration, border control, meteorology and other essential services. Without detailed interaction with all relevant agencies (outside the scope of this report), it is difficult to assess these costs across national, state and local jurisdictions as they are treated differently for accounting purposes in each jurisdiction.

All figures in section 8.1.4 are quoted in 2016 US dollars[87]. Once the financial analysis had been completed, a final conversion to 2018 Australian dollars was undertaken. All graphs are using the 2018 Australian dollar values

[87] 2016USD has been used a the baseline currency and year because of the benchmarked budgets, the three 2024 Olympic Games bids budgets are presented in USD2016, and are the most recent, incorporating some of the Agenda 2020 initiatives.

The benchmarking exercise yields a revenue estimate of USD3.65 billion in 2016 dollars (which converts to AU5.0 billion in 2018 dollars) and expenditure estimates of USD3.8 billion in 2016 (or AUD5.3 billion in 2018) resulting in zero net operating cost plus a government contribution to the Paralympic Games of AUD300 million (2018).

For Tokyo 2020, it is anticipated that the operating revenues will meet operating expenditures resulting, at worst, in a 'break even' operational budget[88]. While acknowledging the different market dimensions, for Tokyo 2020 sponsorship revenue secured to date is at USD3.1 billion with further revenues anticipated and LA 2028 has upgraded its revenue forecasts since being awarded the Games to USD5 billion.

8.1.4.2 Revenue

Table 42: Operating Budget - Revenue

Area	Indicative amount USD 2016 '000s
IOC Contribution	750,000
The Olympic Partners (TOP) Programme	450,000
Domestic Sponsorship	850,000
Ticketing	750,000
Licensing and Merchandising	125,000
Government Contribution to the Paralympics	370,000
Lotteries	0
Other Revenue	225,000
Total Revenues	**3,520,000**

[88] IOC Coordination Commission – Tokyo 2020

8.1.4.3 Expenditures

Table 43: Operating Budget - Expenditure

Area	Indicative amount USD 2016 '000s
Venue Infrastructure (Overlay, fitout and temporary adaptation)	765,000
Accommodation	100,000
Food and Beverage	75,000
Medical Services	35,000
Logistics	60,000
Stakeholder Services	60,000
Security	50,000
Sports	75,000
Transport	165,000
Event Services	20,000
Venue Operations	85,000
Village Operations	75,000
Test Events	40,000
Other Games Services and Operations Costs	30,000
Technology	550,000
People Management	650,000
Ceremonies and Culture	200,000
Communications, Marketing and Look	210,000
Corporate Administration and Legacy	225,000
Other Expenses (including Marketing rights to IOC, IPC, AOC and APC)	225,000
New Norm Initiative	-350,000
Contingency	435,000
Total Expenditures	**3,800,000**

8.1.5 Capital Investments

Some recent Olympic and Paralympic Games have experienced significant capital expenditure. In all cases these Games were of a different nature to that proposed for SEQ and / or preceded the IOC policy evolution arising out of both the Olympic Agenda 2020 Resolutions and the IOC New Norm Review. Both of these IOC initiatives have reinforced the IOC's position that there should be no Games specific capital investment or conversely, that any capital investment must be aligned with and reinforces long-term development plans.

Significantly, early in this study, the CoMSEQ embraced the IOC's Olympic Agenda 2020 policies and founded much of the initial consideration of a prospective SEQ Olympic and Paralympic Games on the basis that the use of permanent venues and infrastructure would only be proposed for a Games if they were to align with the long-term plans for the region.

Throughout this report (refer Executive Summary, sections 3.6, 3.7 and 8.1) it has been confirmed that there should be no Games induced capital investment and that in all instances, the Games venue and infrastructure requirements could be met within current and evolving development plans. Based on this analysis, a Games specific capital budget has not been identified.

This conclusion has been supported by:

- Extensive stakeholder consultation (refer separate stakeholder consultation register held by CoMSEQ) and
- A review of various development plans / reviews for SEQ[89]
- Evaluation of growth projections for SEQ[90] and related transport impacts.[91]

The analysis relies on the future delivery of a range of legacy capital investments.

This legacy led approach supports the overall contention that that there should be no Games specific capital investment and furthermore, there is a strong case to leverage the Games to accelerate and catalyse investment in long-term development to meet regional growth requirements.

This study also considered the impact of non-delivery of some venues and infrastructure which does not already exist. The testing of these scenarios against the Indicative Master Plan concluded that the current Indicative Master Plan optimises SEQ legacy outcomes with respect to infrastructure (venues, facilities and transport). The alternatives could reduce the venue legacy capital programme and still provide a compelling Games proposition. However, none of these options are feasible without essential transport infrastructure investment (legacy driven) or legacy accommodation investment (for initial short term use as Olympic Village and Media Village(s). These require specifically legacy developments and not considered as Games investments although timing effects may be attributable to the Games.

[89] The plans reviewed include: State Infrastructure Plan, Shaping SEQ (SEQ Regional Plan 2017), Connecting SEQ 2031, SEQ City Deal gateway 1 report
[90] Department of Transport and Main Roads data (2018)
[91] See - SEQ Regional Strategic Transport Road Map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8.1.6 Feasibility – Financial Perspective

●	Full satisfaction of all Games requirements
◕	Meets the majority of Games requirements
◑ ◔	Meets Games requirements at a basic level / minimal level
○	Not able to meet Games requirements
No rating	Circumstances do not allow a rating to be applied

Table 44: Summary of feasibility analysis - Finance, Governance and Engagement

Requirement	Satisfaction of requirement	Comment
Funding and underwriting to meet Games operational requirements	No rating	/ The capacity to meet Games-time funding requirements has been demonstrated by the staging of the 2018 Commonwealth Games in SEQ wherein the operating deficit was larger than that likely for an Olympic and Paralympic Games. Notably, the benefit arising from the Olympic and Paralympic Games is likely to be significantly greater than for a Commonwealth Games. Therefore the affordability of the Olympic and Paralympic Games is significantly more attractive than the Commonwealth Games / The overall objective of the IOC is to ensure that by 2032, the Olympic and Paralympic Games require no tax payer / government funding contribution to the Games operating budget other than in relation to government-controlled services, security and public transport. While in this study the conservative and backward-looking approach to financial benchmarking results in a government subsidy being required, it is acknowledged that the IOC's New Norm initiatives, if successfully implemented, will largely eliminate the need for such funding / In regard to financial underwriting of the Games operating costs, the IOC has considerably relaxed its requirements during the most recent Olympic bid campaign (2026 Olympic Winter Games) and while an underwriting will be required for local purpose it is likely that this will not pose an unmanageable contingent liability on the underwriter. Based on past convention for such events this underwriting is usually provided by the state government / The Queensland Government is yet to determine if it will support the bidding for and hosting of the Games therefore no feasibility rating is offered in this regard
Funding and delivery of the Games capital programme	No rating	/ There is no Games capital programme. All venue and infrastructure required for the Games either exists or will exist based on city, regional, state or national development plans

Requirement	Satisfaction of requirement	Comment
Funding and delivery of long-term development plans which will enable the Games (Current funding arrangements considered. Note: if investments as forecast through the Indicative Master Plan and the *SEQ Regional Strategic Transport Road Map* are achieved the rating would be revised to 100% compliance)		/ Growth in the SEQ region is driving the need for enhancements in transport, housing, sport / recreation and entertainment / cultural facilities. At the same, time the ongoing viability of existing facilities requires periodic upgrading. All of these investment decisions will be made regardless of the Games, however in two specific instances, the scheduling of such developments to precede the Games will enhance Games delivery / Given the regional Games concept, as identified in the Indicative Master Plan, and the distribution of both venues and accommodation, an enhanced regional public transport solution will enable Games and business as usual activities. It is noted that the State Government has recognised this need through the funding of Cross River Rail a key element of the transport enhancement plan / The accommodation capacity in the region and the demands of the Games, allowing for a stock of rooms for business as usual visitors, means that supplementation of accommodation with villages is likely to be necessary. Therefore, the scheduling of planned developments to allow this is a key feasibility factor
Demonstrate the support of government and the public (Further review required – out of scope of study)	No rating	/ While there appears to be an appetite to explore the opportunity of hosting the Games by CoMSEQ, the private sector and the community of SEQ, the Queensland Government is, reasonably, yet to determine its position and will do so following receipt of this report and an associated economic assessment it will undertake in 2019. The position of the Australian government is yet to be determined
Demonstrate effective Games delivery arrangements with clear structures and responsibilities (Existing status and precedent event hosting status considered)		/ Australia has hosted a range of major events over the past two decades. A generally accepted set of governance arrangements has emerged and the proven practices of the past will enable SEQ to define future arrangements demonstrating their efficacy and a comprehensive approach to risk management and optimising Games opportunities. Ensuring a thorough review of recent learnings and developing a comprehensive and thoughtful responsibilities matrix will be part of meeting the overall Games requirements

8.1.7 Benefits

The Queensland Government will need to undertake an economic analysis of the costs and benefits of hosting the Olympic Games following the completion of this report. As such, this report does not include a cost / benefit analysis, however the following benefits should be used to inform the government benefits analysis.

The table of benefits in the following sections has been developed with reference to previous Olympic Games Impact reports, post-Games reports, economic impact studies, and other relevant sources to identify the numerous benefits of hosting an Olympic Games.

Value of Benefits:

With reference to the official Games economic impact reports, the following summarises the reported value of the Games benefits.
It is noted the assessment models vary from Games to Games and report to report, so the following are provided as an indicative guide only:

Summary of Benefits

Table 45: Value of Olympic Games benefits

Games	Benefit Reported
Barcelona 1992	**Total economic impact – USD26.1 B**[92] Direct impact: USD9.8 billion Indirect impact: USD16.3 billion
Atlanta 1996	Reported a USD5 billion[93] economic impact
Sydney 2000	Estimated to have brought about a GDP uplift of between AUD6billion and AUD7 billion[94]
	The Games delivered **benefits of more than AUD22.3 billion:** The Games delivered substantial benefits to Sydney, New South Wales and Australia. For example: / AUD3 billion in business outcomes were generated / Injection of over AUD6 billion in infrastructure developments in NSW / Injection of over AUD1.2 billion worth of convention business for NSW between 1993 and 2007 / Over AUD6 billion in inbound tourism spending during 2001 / Greatly enhanced business profile for Sydney, NSW and Australia through the equivalent of up to AUD6.1 billion worth of international exposure[95]

Games	Benefit Reported
Vancouver 2010 Olympic Winter Games	The Games delivered an estimated boost to Canada's GDP of CAD2.8 billion between 2003 and 2010
	According to a PricewaterhouseCoopers report, the Games generated between CAD70.2 million and CAD91.9 million in federal tax revenues[96]
London 2012	'Bespoke economic modelling utilising an input-output framework suggests that the impacts which can already be clearly identified at this early stage will in total generate some **GBP28 billion to GBP41 billion** in Gross Value Added (GVA) and 618,000 to 893,000 years of employment by 2020'[97]
	Factoring in pre-Games construction and other early Games-related economic activity, an Oxford Economics study commissioned by the Lloyds banking group estimated that the Games will generate GBP16.5 billion for the British economy from 2005 to 2017[98]

[92] The economic impact of the Barcelona Olympic Games, 1986-2004 (Faculty of Economics and Business Science, Universitat Autònoma de Barcelona)

[93] IOC Olympic Legacy (2013) – page 30

[94] IOC Olympic Legacy (2013) – page 30

[95] Business and Economic Benefits of the Sydney 2000 Olympics: A collation of evidence – 2002 (PwC for NSW Dept of State and Regional Development) - Executive Summary

[96] IOC Factsheet – Legacies of the Games (Update May 2016)

[97] Meta-Evaluation of the Impacts and Legacy of the London 2012 Olympic Games and Paralympic Games – July 2013 (Grant Thornton UK LLP; Ecorys; Loughborough University; Oxford Economics; Future Inclusion – For Department for Culture, Media & Sport)

[98] IOC Olympic Legacy (2013) – page 30

Employment and Training

Games	Benefit Reported
Barcelona 1992	/ The numbers of unemployed fell from an all-time high of 127,774 in November 1986 to as low as 60,885 by July 1992, during the Games / Between October 1986 and August 1992, Barcelona's general unemployment rate fell from 18.4% to 9.6%, while the Spanish figures were 20.9% and 15.5%, respectively[99]
Sydney 2000	/ Since September 2000 the NSW Government has successfully leveraged its Games-related initiatives to attract 19 new investments to the state. These new investments are estimated to involve around 1,219 jobs including 15 metropolitan-based investments providing 1,020 jobs; and four regional based investments involving 199 jobs[100] / The infrastructure project investment is estimated to have generated some 105,000 direct and indirect jobs[101] / The NSW Government estimates that as a result of its Games industry training strategy approximately 55,000 people received employment related training[102]
Athens 2004	/ 100,000 Greeks received technical, managerial or other Games-related training[103]
Vancouver 2010 Olympic Winter Games	/ According to a PricewaterhouseCoopers report, between 2003 and 2008, 20,780 jobs were produced in BC and another 1,750 jobs across Canada through interprovincial trade / More than 800 new business were created as a result of incremental economic growth stimulated by the Games[104]
London 2012	/ An estimated 62,000 to 76,000 workless Londoners secured temporary or permanent employment as a result of the Games[105] / At the peak of the Games workforce, 39% of staff directly employed by LOCOG and 34% of contractors newly employed for the event had been previously unemployed / During 2015 / 16, London & Partners supported 289 overseas investment projects. More than 19,000 jobs have been created from these Foreign Direct Investment projects[106]

[99] The economic impact of the Barcelona Olympic Games, 1986-2004, Faculty of Economics and Business Science, Universitat Autònoma de Barcelona
[100] Business and Economic Benefits of the Sydney 2000 Olympics: A collation of evidence – 2002 (PwC for NSW Dept of State and Regional Development) – page 71
[101] Business and Economic Benefits of the Sydney 2000 Olympics: A collation of evidence – 2002 (PwC for NSW Dept of State and Regional Development) – page 74
[102] Business and Economic Benefits of the Sydney 2000 Olympics: A collation of evidence – 2002 (PwC for NSW Dept of State and Regional Development) – page 54
[103] IOC Factsheet – Legacies of the Games (Update May 2016)
[104] IOC Factsheet – Legacies of the Games (Update May 2016)
[105] IOC Factsheet – Legacies of the Games (Update May 2016)
[106] Inspired by 2012:the legacy from the Olympic and Paralympic Games - Fourth annual report – summer 2016

Tourism / Visitation

Games	Benefit Reported
Barcelona 1992	/ Between 1986 and 2000, Barcelona's hotel capacity increased threefold / Parallel to this, the number of visitors from abroad visiting the city doubled, reaching a total of 3.5 million visitors per year[107]
Sydney 2000	/ The Sydney Convention and Visitors Bureau's (SCVB) secured 210 events between 1993 and 2000, attracting more than 250,000 delegates and injecting more than AUD1 billion into Sydney's economy[108] / There were more than 110,000 Games-time specific international visitors[109] / Over AUD6 billion in inbound tourism spending by an additional 1.6 million visitors during 2001[110] / The equivalent of up to AUD6.1 billion worth of international exposure greatly enhanced the business profile for Sydney, NSW and Australia[111] / The Sydney Media Centre hosted 5,000 non-accredited journalists and 55,000 visits for briefings, story leads, images and information on NSW and Australia[112] / There was a substantial improvement in international perceptions of Australia in terms of customer service, quality, value and reliability[113] / From 1 September to 5 October 2000, aircraft movements at Sydney Airport totalled 30,604 – an increase of almost 17% over the same period in 1999 / International passenger arrivals were up 22% and international passenger departures were up 14% on 1999 figures[114]

[107] The economic impact of the Barcelona Olympic Games, 1986-2004, Faculty of Economics and Business Science, Universitat Autònoma de Barcelona

[108] Business and Economic Benefits of the Sydney 2000 Olympics: A collation of evidence – 2002 (PwC for NSW Dept of State and Regional Development) – Executive Summary

[109] Business and Economic Benefits of the Sydney 2000 Olympics: A collation of evidence – 2002 (PwC for NSW Dept of State and Regional Development) – Executive Summary

[110] Business and Economic Benefits of the Sydney 2000 Olympics: A collation of evidence – 2002 (PwC for NSW Dept of State and Regional Development) – Executive Summary

[111] Business and Economic Benefits of the Sydney 2000 Olympics: A collation of evidence – 2002 (PwC for NSW Dept of State and Regional Development) – Executive Summary

[112] Business and Economic Benefits of the Sydney 2000 Olympics: A collation of evidence – 2002 (PwC for NSW Dept of State and Regional Development) – Executive Summary

[113] Business and Economic Benefits of the Sydney 2000 Olympics: A collation of evidence – 2002 (PwC for NSW Dept of State and Regional Development) – Executive Summary

[114] Business and Economic Benefits of the Sydney 2000 Olympics: A collation of evidence – 2002 (PwC for NSW Dept of State and Regional Development) – page 85

Tourism / Visitation

Games	Benefit Reported
Beijing 2008	/ From October to December 2008, domestic tourism to Beijing was up 21% year on year with Beijing receiving 25.6 million tourists, generating revenue of USD7.5 billion, up 23% year on year[115] / In the first quarter of 2009, 28.7 million domestic tourists visited Beijing, a year–on-year increase of 29%, generating revenue of USD7 billion, a year-on-year increase of 9.6%[116]
Vancouver 2010 Olympic Winter Games	/ The Canadian Tourism Commission (CTC)'s media and public relations activities around the Games generated about CAD1 billion in 'Advertising Value Equivalency' in 2010[117] / Global audiences were reached 12 billion times in 2010 by Olympic coverage with Canadian tourism messages[118] / The overall value for Whistler of the (tourism) coverage that it received in North America alone in 2010 was estimated at CAD139 million, compared to CAD5 million the year before[119] / More than 10 million people paid overnight visits to Vancouver in 2016 and the city's tourism industry enjoyed its third straight record-breaking year

Games	Benefit Reported
London 2012	/ Increases in both tourist numbers (25% between 2012 and 2016) and tourist expenditure (18% between 2011 and 2015) / There were over 800,000 overseas visitors attending an Olympic event[120] / The high levels of spend by Olympic visitors meant that overall there was a net boost of almost GBP600 million to the visitor economy, excluding ticket sales[121] / Over GBP2.4 billion was spent by visitors attending Games-related events, including sporting events and cultural events[122] / There have been nearly 3.5 million additional tourist visits to the UK as a result of Games-related promotional activity since 2011 / 12, resulting in GBP2.1 billion in additional spending (up to 2016)[123] / Over the three years 2012 to 2015, international visitor numbers to London rose by 20% while spending has risen by 18%. The city also welcomed 12.9 million domestic overnight visitors in 2015[124] / A Visit Britain analysis shows that GBP925 million was spent by foreign visitors during the Games, with many of them staying at least part of the time outside of London[125]

[115] IIOC Factsheet – Beijing Facts and Figures (Update August 2009)

[116] IOC Factsheet – Beijing Facts and Figures (Update August 2009)

[117] IOC Factsheet – Legacies of the Games (Update May 2016)

[118] IOC Factsheet – Legacies of the Games (Update May 2016)

[119] IOC Factsheet – Legacies of the Games (Update May 2016)

[120] Meta-Evaluation of the Impacts and Legacy of the London 2012 Olympic Games and Paralympic Games – July 2013 (Grant Thornton UK LLP; Ecorys; Loughborough University; Oxford Economics; Future Inclusion – For Department for Culture, Media & Sport)

[121] Meta-Evaluation of the Impacts and Legacy of the London 2012 Olympic Games and Paralympic Games – July 2013 (Grant Thornton UK LLP; Ecorys; Loughborough University; Oxford Economics; Future Inclusion – For Department for Culture, Media & Sport)

[122] Meta-Evaluation of the Impacts and Legacy of the London 2012 Olympic Games and Paralympic Games – July 2013 (Grant Thornton UK LLP; Ecorys; Loughborough University; Oxford Economics; Future Inclusion – For Department for Culture, Media & Sport)

[123] Inspired by 2012:the legacy from the Olympic and Paralympic Games - Fourth annual report – summer 2016

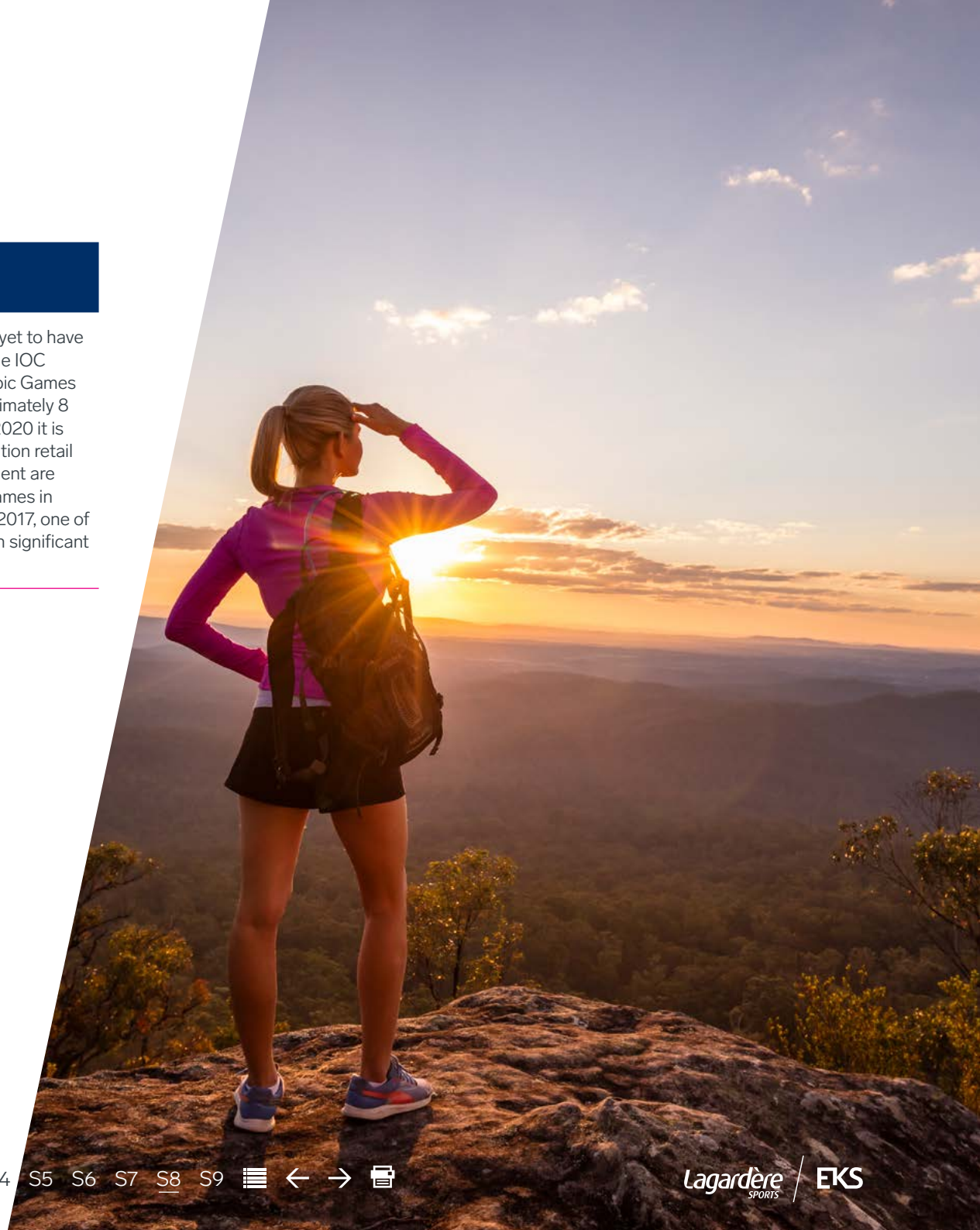
[124] Inspired by 2012:the legacy from the Olympic and Paralympic Games - Fourth annual report – summer 2016

[125] IOC Factsheet – London 2012 Facts and Figures (Update – July 2013)

Tourism / Visitation

Games	Benefit Reported
Tokyo 2020	While Tokyo 2020 is not included in this analysis as it is yet to have been staged, it is of relevance to note that at the time the IOC awarded the hosting of the 2020 Olympic and Paralympic Games to Tokyo in 2013 Tokyo's visitor numbers were at approximately 8 million per year. Since that time this has grown and by 2020 it is anticipated that this will be at 23 million per year. In addition retail spending, hotel development and infrastructure investment are seeing a surge in activity ahead of the 2020 Olympic Games in Tokyo. The growth rate for Japanese tourism at 20% in 2017, one of the highest in the world and is expected to continue with significant attribution to the Olympic Games impact[126]

[126] André Andonian, Managing Partner for Japan at consultancy firm McKinsey- CNBC - https://www.cnbc.com/2018/03/23/japan-welcomed-20-percent-more-tourists-in-2017--and-the-number-is-growing.html



Business Investment and Development

Games	Benefit Reported
Sydney 2000	/ AUD3 billion in business outcomes were generated, including: – AUD600 million in new business investment – AUD288 million in new business under the Australian Technology Showcase – almost AUD2 billion in post-Games sports infrastructure and service contracts[127] / Business Club Australia linked to the Commonwealth's Trade Visitors Business program and attracted 16,000 visitors to networking events[128] / Since September 2000 the NSW Government has successfully leveraged its Games-related initiatives to attract 19 new investments to the State. These new investments are estimated to involve an injection of over AUD114 million, including 15 metropolitan based investments worth almost AUD56 million; and four regional based investments worth over AUD58 million[129] / As of December 2000, 45 companies who visited Australia as part of the Investment 2000 program (about 15%) had committed to an investment in Australia[130]
London 2012	/ During the Games, more than 4,000 business leaders and global figures from 63 countries attended the British Business Embassy at Lancaster House, where UKTI delivered the Global Investment Conference and 17 days of Global Business Summits over the period of the Games[131] / Just two years after the Games the economic trade and investment benefits from London 2012 stood at GBP14.2billion. The target was GBP11billion in four years[132]

[127] Business and Economic Benefits of the Sydney 2000 Olympics: A collation of evidence – 2002 (PwC for NSW Dept of State and Regional Development) – Executive Summary
[128] Business and Economic Benefits of the Sydney 2000 Olympics: A collation of evidence – 2002 (PwC for NSW Dept of State and Regional Development) – page 51
[129] Business and Economic Benefits of the Sydney 2000 Olympics: A collation of evidence – 2002 (PwC for NSW Dept of State and Regional Development) – page 72
[130] Business and Economic Benefits of the Sydney 2000 Olympics: A collation of evidence – 2002 (PwC for NSW Dept of State and Regional Development) – page 73
[131] Inspired by 2012:the legacy from the Olympic and Paralympic Games - Fourth annual report – summer 2016
[132] Inspired by 2012:the legacy from the Olympic and Paralympic Games - Fourth annual report – summer 2016

Games Infrastructure, Procurement and Activity

Games	Benefit Reported
Barcelona 1992	The scale of the urban transformation arising from the Games was immense: new roads represented an increase of 15% over those existing in 1986; new sewage systems - 17%, and new green areas and beaches - 78%[133]
Sydney 2000	/ Injection of over AUD6 billion in infrastructure developments in NSW[134] / The completion of major transport and construction projects which enhanced Sydney as a business location and assisted the efficiency of the city at Games time. These include projects such as: – AUD2 billion Sydney Airport upgrade – AUD700 million Eastern Distributor – AUD320 million beautification of Sydney CBD[135] / NSW businesses won contracts worth AUD1 billion on Games specific projects, representing one third of total private and public Games construction expenditure[136] / The Games stimulated the NSW economy through the construction of additional accommodation[137] / The Games provided a driving force for Ecologically Sustainable Development (ESD), in keeping with the promise of hosting the Green Games[138] / The Olympics had a major impact on development in the Sydney CBD, with projects worth over AUD2.4 billion completed: – 16 major commercial projects were completed, providing 395,000 square metres of floor space – Twelve new hotels were completed in the CBD in the year before the Games, providing 2,567 rooms – Thirty-three residential projects completed prior to the Games provided 3,055 new units in the CBD[139]

[133] The economic impact of the Barcelona Olympic Games, 1986-2004, Faculty of Economics and Business Science, Universitat Autònoma de Barcelona

[134] Business and Economic Benefits of the Sydney 2000 Olympics: A collation of evidence – 2002 (PwC for NSW Dept of State and Regional Development) – Executive Summary

[135] Business and Economic Benefits of the Sydney 2000 Olympics: A collation of evidence – 2002 (PwC for NSW Dept of State and Regional Development) – Executive Summary

[136] Business and Economic Benefits of the Sydney 2000 Olympics: A collation of evidence – 2002 (PwC for NSW Dept of State and Regional Development) – Page 75

[137] Business and Economic Benefits of the Sydney 2000 Olympics: A collation of evidence – 2002 (PwC for NSW Dept of State and Regional Development) – Page 75

[138] Business and Economic Benefits of the Sydney 2000 Olympics: A collation of evidence – 2002 (PwC for NSW Dept of State and Regional Development) – Page 75

[139] Business and Economic Benefits of the Sydney 2000 Olympics: A collation of evidence – 2002 (PwC for NSW Dept of State and Regional Development) – Page 79

Games Infrastructure, Procurement and Activity

Games	Benefit Reported
Sydney 2000 (continued)	/ Sydney saw significant upgrades in transport infrastructure (including the rail link to the Olympic site and the completion of the airport link)[140] / During the Games the Olympic Road and Transport Authority (ORTA) coordinated all transport through the new AUD30 million Transport Management Centre[141] / Sydney's public transport networks successfully handled record levels of usage of public transport during the Games including travel by over 4.6 million passengers to Sydney Olympic Park on public transport[142]
Athens 2004	/ Athens delivered: – a new and renovated urban and underground metro system capable of carrying 1 million passengers a day (20% of the population of Athens) – 90 km of new roads were built and a further 120 km widened – a new computerised traffic management system – a new airport[143] / The Faliron and Hellinikon / Agios Kosmas waterfront areas were redeveloped and opened the city to the sea[144] / The Games saw improved tourism infrastructure and higher quality hotel accommodation. Thousands of buildings were renovated and repainted with many illegal billboards removed[145]

[140] Business and Economic Benefits of the Sydney 2000 Olympics: A collation of evidence – 2002 (PwC for NSW Dept of State and Regional Development) – Page 87

[141] Business and Economic Benefits of the Sydney 2000 Olympics: A collation of evidence – 2002 (PwC for NSW Dept of State and Regional Development) – Page 85

[142] Business and Economic Benefits of the Sydney 2000 Olympics: A collation of evidence – 2002 (PwC for NSW Dept of State and Regional Development) – Page 85

[143] IOC Factsheet – Legacies of the Games (Update May 2016)

[144] IOC Factsheet – Legacies of the Games (Update May 2016)

[145] IOC Factsheet – Legacies of the Games (Update May 2016)

Games Infrastructure, Procurement and Activity

Games	Benefit Reported
Vancouver 2010 Olympic Winter Games	/ Mass transit ridership increased by more than 50 % during the Games and remains well above previous-year levels[146]
London 2012	/ Nearly GBP730 million in contracts awarded to UK companies from High Value Opportunity global sports projects taking place between 2015 and 2022[147] / According to ODA data published September 2009, of 1036 suppliers of total contracts worth GBP5 billion: 98% were UK based[148] / GBP6.5 billion was invested in London's transport network prior to the Games to increase capacity and improve reliability across the transport network[149] / At least 60 Games-related projects promoted greener travel, including a GBP10 million investment to upgrade pedestrian and cycling routes across London[150] / There was a 29% increase in the number of cyclists in central London during the Games compared with the previous year[151]

[146] IOC Factsheet – Legacies of the Games (Update May 2016)
[147] Inspired by 2012: the legacy from the Olympic and Paralympic Games - Fourth annual report – summer 2016
[148] Olympic Games Impact Study – London 2012 Post-Games Report (December 2015)
[149] IOC Factsheet – Legacies of the Games (Update May 2016)
[150] IOC Factsheet – Legacies of the Games (Update May 2016)
[151] IOC Factsheet – London 2012 Facts and Figures (Update – July 2013)

Sponsorship and Broadcasting / Media Coverage

Games	Benefit Reported
Sydney 2000	/ AUD1.1 billion from the sale of broadcast rights to the Games[152] / Generated over AUD680 million in sponsorship revenues for SOCOG[153] / Olympic ticket sales generated over AUD610 million or SOCOG[154] / The Sydney 2000 Olympic Games were the most watched sporting event ever at the time, with a global audience of more than 3.7 billion people with an average of more than 1.2 billion a day[155] / The Games were televised in 220 different countries, with 90% of coverage broadcast on channels available to the entire population[156] / Host Broadcaster feed hours 3,500[157] / Television coverage for the Games totaled 29,600 hours (or three and a half years of continuous programming)[158] / The Games website recorded more than 8.7 million visitors from over 150 countries during the Games[159]
Beijing 2008	/ The Olympic Games in Beijing saw the largest media contingent for any event ever — more than 28,000 journalists from around the world[160] / With an estimated potential audience of more than 4.3 billion people, Beijing 2008 was the most watched Olympic Games ever[161] / Host Broadcaster feed hours 5,000[162] / 61,700 hours of dedicated broadcast coverage was aired globally[163] / The Games were televised in 220 different countries[164]

[152] Business and Economic Benefits of the Sydney 2000 Olympics: A collation of evidence – 2002 (PwC for NSW Dept of State and Regional Development) – Executive Summary

[153] Business and Economic Benefits of the Sydney 2000 Olympics: A collation of evidence – 2002 (PwC for NSW Dept of State and Regional Development) – Executive Summary

[154] Business and Economic Benefits of the Sydney 2000 Olympics: A collation of evidence – 2002 (PwC for NSW Dept of State and Regional Development) – Executive Summary

[155] Business and Economic Benefits of the Sydney 2000 Olympics: A collation of evidence – 2002 (PwC for NSW Dept of State and Regional Development) – page 109

[156] Business and Economic Benefits of the Sydney 2000 Olympics: A collation of evidence – 2002 (PwC for NSW Dept of State and Regional Development) – page 109

[157] IOC Olympic Marketing Fact File (2018 edition)

[158] Business and Economic Benefits of the Sydney 2000 Olympics: A collation of evidence – 2002 (PwC for NSW Dept of State and Regional Development) – page 110

[159] Business and Economic Benefits of the Sydney 2000 Olympics: A collation of evidence – 2002 (PwC for NSW Dept of State and Regional Development) – page 111

[160] IOC Factsheet – Beijing Facts and Figures (Update August 2009)

[161] IOC Factsheet – Beijing Facts and Figures (Update August 2009)

[162] IOC Olympic Marketing Fact File (2018 edition)

[163] IOC Factsheet – Beijing Facts and Figures (Update August 2009)

[164] IOC Olympic Marketing Fact File (2018 edition)

Sponsorship and Broadcasting / Media Coverage

Games	Benefit Reported
Vancouver 2010 Olympic Winter Games	/ Vancouver 2010 reached a potential audience of 3.8 billion people worldwide and approximately 1.8 billion viewers[165] / Television coverage represented 31,902 hours of broadcast coverage in total[166] / Coverage was available on 235 television stations and 100 websites around the world[167] / Official broadcasting websites recorded over 1.2 billion page views, and delivered over 265 million video views totalling over 38.3 million hours of videos viewed[168]
London 2012	/ Olympic broadcasters provided a record combined total of more than 100,000 hours of Games coverage[169] / Host Broadcaster feed hours 5,000[170] / Broadcast audience / reach of 3.6 billion[171] / The Games were televised in 220 different countries[171] / The IOC's website, olympic.org, attracted more than 16 million unique visitors during the Games[173]
Rio 2016	/ The Games were televised in 220 different countries[174] / Host Broadcaster feed hours 7,100[175] / Broadcast audience / reach of 3.2 billion[176]

Pre-Games Training and Event Hosting

Games	Benefit Reported
Sydney 2000	/ Over 127 teams from 39 countries were successfully attracted to undertake pre-Games training in locations across NSW. This training is estimated to have injected some AUD70 million into the State's economy, of which over AUD17 million accrued to regional businesses[177]
London 2012	/ Extensive and well-supported Pre-Games Training Camps network of more than 600 venues throughout the UK. Pre-Games Training Camps helped smaller national Olympic teams prepare for the Games at designated training sites across the UK[178]

[165] IOC Factsheet – Vancouver Facts and Figures (Update February 2011)
[166] IOC Factsheet – Vancouver Facts and Figures (Update February 2011)
[167] IOC Factsheet – Vancouver Facts and Figures (Update February 2011)
[168] IOC Factsheet – Vancouver Facts and Figures (Update February 2011)
[169] IOC Factsheet – London 2012 Facts and Figures (Update – July 2013)
[170] IOC Olympic Marketing Fact File (2018 edition)
[171] IOC Olympic Marketing Fact File (2018 edition)
[172] IOC Olympic Marketing Fact File (2018 edition)
[173] IOC Factsheet – London 2012 Facts and Figures (Update – July 2013)
[174] IOC Olympic Marketing Fact File (2018 edition)
[175] IOC Olympic Marketing Fact File (2018 edition)
[176] IOC Olympic Marketing Fact File (2018 edition)
[177] Business and Economic Benefits of the Sydney 2000 Olympics: A collation of evidence – 2002 (PwC for NSW Dept of State and Regional Development) – Page 55
[178] London 2012 Olympic Games Post Games Report Volume 3

Sport Participation

Games	Benefit Reported
London 2012	/ Consumers' sport-related spending grew from GBP26.4 billion in 2010 to GBP29.2 billion in 2012, benefiting the UK economy as a whole / There were increases in headline participation measures in the run up to the Games:[179] – The proportion of adults participating in at least one 30 minute session of moderate intensity sport (including recreational walking and cycling) had increased by 3.5 percentage points in 2012 compared with 2005 / 6, equivalent to 1.5 million more participants – There had been an increase in the proportion of adults doing one 30 minute session of moderate intensity sport of 1.8 percentage points from Oct 2005 - Oct 2006 to Oct 2011 - Oct 2012 / These increases in participation levels are apparent across all demographic groups with the largest differences noted for: – Black and minority ethnic groups (5.0 percentage point increase) – Those with a long-standing illness or disability (4.2 percentage point increase) – Lower socio-economic groups (4.2 percentage point increase) – Those not working (4.1 percentage point increase) / Data for the 2012 calendar year showed that 15.3% of adults were either motivated to do more sport or more interested in sport because of the UK hosting the Games[180]

Games	Benefit Reported
London 2012 (continued)	/ Over a third (36%) of children aged five to 10, along with half (52%) of those aged 11 to 15 and a quarter (25%) of those aged 16 to 24 who participate in sport indicated that the Games had motivated them to do more sport. Note: the national average is 16% for the adult population[181] / The number of young people aged between 16 and 25 playing sport regularly has reached 3.86 million. This is an increase of nearly 63,000 on the previous 12 months, with strong advances in sports such as basketball and swimming[182] / 15.3 million people are playing sport once a week, every week. That is 1.4 million more than in 2005 when London won the bid to host the Olympic and Paralympic Games and indicates that most of the increase seen following the Games in 2012 has been retained[183]
Rio 2016	/ Thanks to the Rio 2016 educational programme, Transforma, over 6 million pupils at more than 12,000 schools across Brazil and abroad have experienced new sports for the first time. Starting in 2013 with 15 schools in Rio de Janeiro, the initiative includes lessons and coaching sessions, as well as sports festivals where kids and adults alike can try something new[184]

[179] Meta-Evaluation of the Impacts and Legacy of the London 2012 Olympic Games and Paralympic Games – July 2013 (Grant Thornton UK LLP; Ecorys; Loughborough University; Oxford Economics; Future Inclusion – For Department for Culture, Media & Sport)

[180] Meta-Evaluation of the Impacts and Legacy of the London 2012 Olympic Games and Paralympic Games – July 2013 (Grant Thornton UK LLP; Ecorys; Loughborough University; Oxford Economics; Future Inclusion – For Department for Culture, Media & Sport)

[181] Meta-Evaluation of the Impacts and Legacy of the London 2012 Olympic Games and Paralympic Games – July 2013 (Grant Thornton UK LLP; Ecorys; Loughborough University; Oxford Economics; Future Inclusion – For Department for Culture, Media & Sport)

[182] Sport England Press Release – June 2013 - https://www.sportengland.org/news-and-features/news/2013/june/13/more-young-people-playing-sport/

[183] Sport England Press Release – June 2013 - https://www.sportengland.org/news-and-features/news/2013/june/13/more-young-people-playing-sport/

[184] https://www.olympic.org/news/education-programme-takes-rio-2016-beyond-brazilian-borders

Innovation:

Many cities also use the platform of an Olympic Games to increase global awareness of the strength of their knowledge economy.

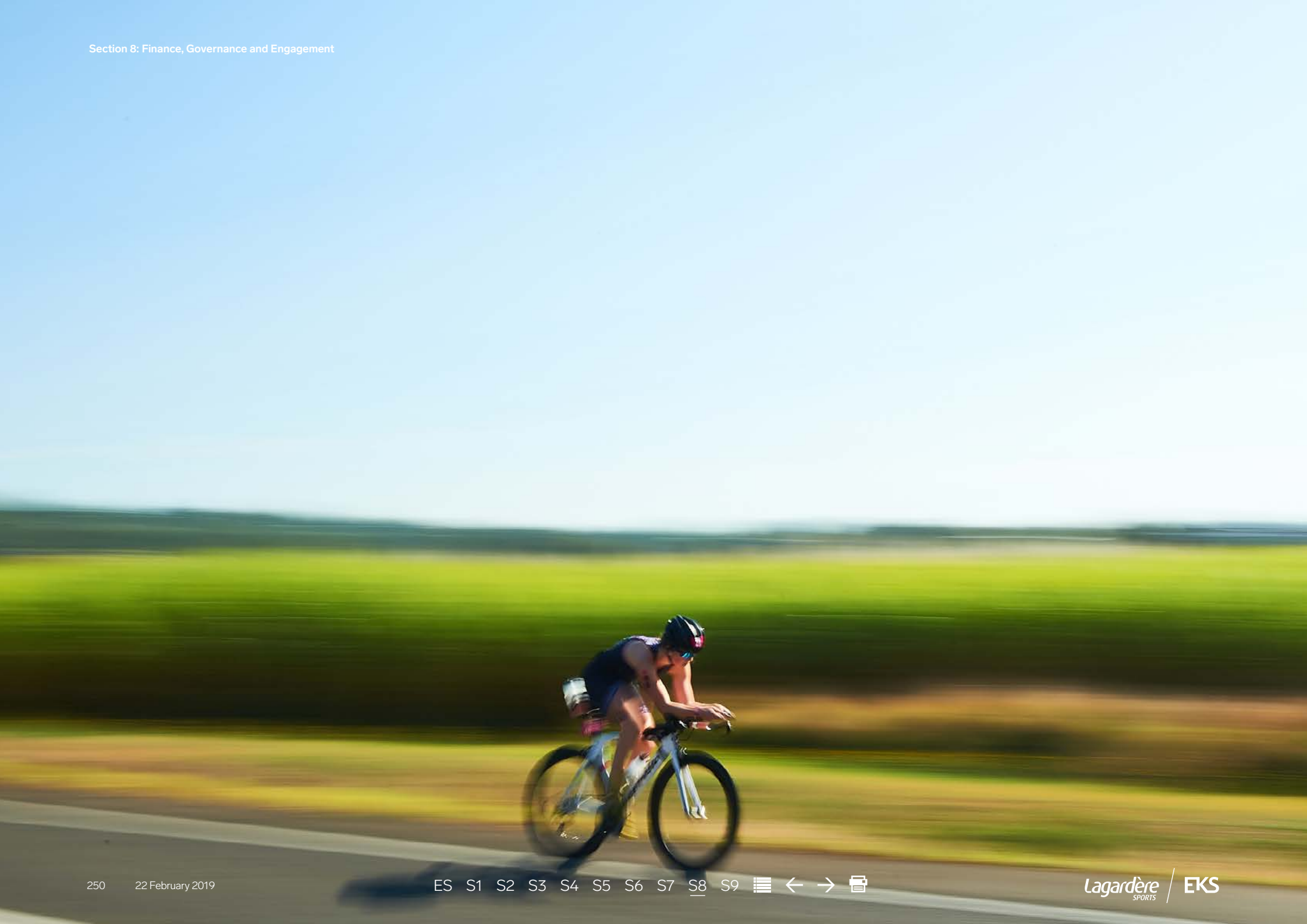
Innovation

Games	Benefit Reported
Tokyo 1964	When Tokyo was awarded the 1964 Games, it triggered several major urban development projects that have continued to benefit the city over the last 50 years, including new highways, sports venues, hotels, airports and railway lines. Perhaps the most high profile initiative was the construction of the Tōkaidō Shinkansen bullet train between Osaka and Tokyo, which demonstrated Japan's industrial and technological strength to the rest of the world and has since carried more than 5.6 billion passengers[185]

Public Support / Community Attitude

Games	Benefit Reported
London 2012	/ At Games time, 76% were favourable towards the Games with strongest support coming from 16 - 24 year olds, women and middle class demographic groups[186] / 83% of people said the Games were impressive and the country could be proud / 65% of people think the Games improved London and the UK's image around the world and 53% agree it gave them a much-needed lift[187] / One in three UK adults say the London 2012 Paralympic Games changed their attitude towards people with disabilities[188] / 65% agree that the Paralympic Games have bought about a breakthrough in the way disabled people are viewed in the UK[189]

[185] https://www.olympic.org/news/tokyo-1964-creates-lasting-legacies
[186] Olympic Games Impact Study – London 2012 Post-Games Report (December 2015)
[187] London 2012 Olympic Games Post Games Report Volume 3
[188] London 2012 Olympic Games Post Games Report Volume 3
[189] London 2012 Olympic Games Post Games Report Volume 3



8.2 Governance

Proven practices of the past will guide future arrangements while evolution will ensure best practice

Australia has hosted a range of major events over the past two decades with the Sydney 2000 Olympic and Paralympic Games being a key milestone. As a result, a generally accepted set of governance arrangements has emerged. While some of these require event-specific refinement, it is recommended that the proven practices of the past guide future arrangements as a fundamental starting point, supplemented by learnings from the most recent similar events to ensure the most appropriate arrangements are utilised.

Given that the Games will be staged approximately 14 years from now, it follows that further evolution of best practice governance arrangements will occur. Hence much can be gained from the ongoing benchmarking of international practices and their adaptation to suit the local circumstances.

Within this context, the recommendations and commentary which follow embody the main principles that should be observed, regardless of the final structure and process. Hence the specific organisation structures and processes presented are illustrative only and require further development with the support of key stakeholders once the main roles and responsibilities are better defined.

Australia has hosted a range of major events over the past two decades with the Sydney 2000 Olympic and Paralympic Games being a key milestone

8.2.1 Key Stakeholders

The number of stakeholders involved in an event as impactful as the Games is one of the complexities that necessitates the careful planning of structural arrangements and associated governance processes. For several past host cities, insufficient early consideration has been given to governance planning. The Games project can then be negatively impacted by inefficiencies, lost opportunities, conflicts or even dysfunction, with resultant project delays and avoidable escalation of costs.

At this stage of feasibility consideration, a simple stakeholder matrix approach involving the following groupings is recommended:

- Olympic bodies including the IOC, AOC, International Sports Federations, National Olympic Committees and other Olympic or Olympic-related agencies
- Queensland and Australian Government agencies and their respective political leaders, plus major opposition parties at each level
- Municipal authorities and their related coordinating bodies, such as CoMSEQ
- NGOs with a direct impact or effect on the Games
- Other NGOs
- Community groups directly impacted or potentially impacted
- Media groups
- The corporate and business sectors, including those impacted or affected by the Games
- The general public, including ticket holders
- The special purpose vehicle created to plan and deliver the Games in a delivery partnership with existing agencies and the private sector (typically an Organising Committee)

A critical early exercise involves the extensive mapping of roles and responsibilities of these stakeholders. For the purposes of this Feasibility Study, the initial approach has involved the evaluation of the logical 'main players' and the subsequent alignment of the structure, oversight bodies and decision-making processes. The codified requirements of the major stakeholders, as defined in policy documents such as the Olympic Charter, has guided this process. This has been supplemented by the assumed roles and existing explicit requirements of each body.

8.2.2 Learning From Recent Events

An examination of recent major event governance arrangements provides insights into established practices. While there are event-specific variations, the following is a summary of characteristics which shape governance arrangements.

Whole-of-event oversight and coordination

Responsibility for overall oversight, host contract compliance, clarification of requirements and the resolution of any major Games participant issues is affected through a coordination process mandated by the event owner. Typically, this involves the establishment of a Coordination Committee which undertakes a bi-annual progress review and risk assessment. Additional interim reviews may be undertaken through a Working Group or Joint Steering Forum to deal with specific issues or topics.

Games planning and delivery

The event owner (such as the IOC) hosting contract generally requires the event host to create a special-purpose vehicle to undertake the core Games planning and delivery responsibilities. This Organising Committee generally takes the form of either a statutory authority, created by an act of parliament, a semi-government body or a government-owned not-for-profit entity. Regardless of the corporate structure, the body is typically overseen by a board comprising representatives of the event owner / local representative organisation, relevant city / state / national government representatives and the private sector.

Legacy delivery

A Games legacy organisation is generally established as the successor to the state government coordination body (or operates in parallel with it) to oversee and manage major legacy facilities or programmes after the Games. In some instances, the state government coordination body also had responsibility for legacy leadership, oversight and even delivery.

State government coordination

For recent events, state government has appointed Minister for the Games who reported either to the Cabinet or a Cabinet Sub-Committee. In addition, a state government coordination body has been established with responsibility for oversight of the Organising Committee, coordination of major government responsibilities and liaison with city and national governments, their authorities and their agencies. Various Executive Coordination Forums are established to enable cross agency coordination, resource allocation and decision making. Reporting to either the Organising Committee and / or state government coordination body, these groups also deal across functional areas to effect integrated planning and decision making.

Cross-functional integration

Various Functional Working Groups, reporting to Executive Coordination Forums, the Organising Committee and / or state government coordination body, focus on integrated functional planning across agencies responsible for specific functions. For example, a Transport Executive Steering Committee and Integrated Transport Task force successfully coordinated the activities of the multiple public and private sector transport agencies involved in the recent Gold Coast 2018 Commonwealth Games.

Assurance

The creation of appropriate statutory audit and risk / assurance organisations is recommended, given the involvement of government funding. These bodies may be internal to the state government coordination body or independent of it.

This simplified summary seeks to highlight the fundamental requirement for a streamlined oversight, planning and decision-making structure. This in turn requires the explicit and universal agreement of the key event partners to a responsibilities matrix that is mapped to logical resource allocation. Wherever possible duplication and overlap should be minimised, and ideally avoided.

8.2.2.1 Governance-related risks

Analysing recent events, including some held outside Australia, arguably the following challenges faced by hosts could have been avoided through a more thoughtful approach to governance:

- Challenges related to roles and responsibilities definition
  - Inadequate engagement of all relevant stakeholders in the mapping process; related inability to actively manage inputs
  - Lack of clarity around the roles and responsibilities of all relevant agencies
  - Lack of clarity in the definition of Games-specific costs
  - Lack of understanding of the delivery partnership model (as opposed to a single entity delivery such as the Organising Committee)
  - Misalignment of resources / budget with responsibility
- Challenges related to decision-making processes
  - Absence of clear and simple decision processes, including escalation arrangements
  - Integrated working groups not established early enough to support complex multi-party functional delivery
  - Insufficient empowerment of key government stakeholders to facilitate effective governance
- Challenges related to assurance
  - Over burdensome assurance processes that lack task-specific capability
  - Multiple concurrent assurance processes that create distractions without significant benefit
- Lack of alignment to a common vision and timeline
  - Mismatch of programme, budget and capability / capacity (hiring)
  - Early over-spending, in particular headcount build-up
  - Lack of early planning to accommodate public procurement requirements

Next Steps

9. Next Steps

Described in this section is a recommended approach to sequencing activities and decisions to enable the leaders of the various stakeholders to take informed and collaborative decisions about a prospective bid should it be decided to continue to explore the Games opportunity.

Underpinning the approach are the timelines established by the IOC for the bidding process. The current IOC bid process can be summarised as follows:

- *A Dialogue Phase* which can begin at any time and is focused on the period starting approximately two to three years prior to the commencement of the formal Candidate Phase
- *The Candidate Phase* which is a structured and formal process governed by a set Candidature Procedures which specify bidding conditions, the timetable, presentations and information submission requirements and the various stages of the decision process
- The ultimate award of the Games is a decision taken by the IOC in Session through an exhaustive ballot procedure involving all IOC Members vote to elect the host city

Based on this process, cities are expected to be able to commence their engagement with the IOC through the Dialogue Phase from 2021, with the final award of the 2032 Games in 2025.

SEQ have strategically important opportunities in advance of this formal process to optimise the position of any future bid, should there be one, and to engage with the IOC leadership and key Olympic stakeholders, including:

- Sport Accord – May 2019
- Tokyo 2020 Olympic Games – July / August 2020

These milestones inform the key next steps.

CoMSEQ have provided this report to the Queensland Government. It has been proposed that the Queensland Government will commission an economic assessment based on the plan outlined in this report and any agreed options to be explored.

It is proposed that a Leadership Group, consisting of the Premier of Queensland (or nominated Minister), Lord Mayor on behalf of CoMSEQ and IOC Member / President of the AOC, be established. This Leadership Group will be responsible for setting the vision and Games concept which will then guide the economic assessment and subsequent work. The legacy approach recommended in this report provides the foundation for the Games concept and an initial framework for the vision.

It is assumed that CoMSEQ and the State Government will continue ongoing discussions with the Federal Government in regard to long-term urban and infrastructure investment arrangements.

Aligned with Sport Accord in May 2019, in Gold Coast, it is recommended that initial outputs from the economic assessment are made available to the Leadership Group to inform discussions with the IOC President and other IOC representatives who will be in Gold Coast at that time. There may also be an opportunity for a follow up IOC technical visit to be conducted later in 2019.

The economic assessment is recommended to be completed late in 2019 to inform the Leadership Group on the development of final Games scenarios and their impact.

A final decision to bid or not bid is recommended to be taken be taken by Leadership Group with appropriate delegations from State Government, CoMSEQ and AOC, prior to the Tokyo 2020 Olympic Games.

Summary of Feasibility Analysis

Based on:

- The Indicative Master Plan which has been developed to test feasibility and is an initial view of a compelling Games plan
- The ongoing implementation of the IOC New Norm initiatives
- The commitment to enhance transport, in particular public transport, connectivity across the region (for the Games this includes a focus on the North - South corridors)
- The ongoing development and maintenance of sport venues in accordance with long -term plans
- The alignment of development scheduling for a major legacy housing development (Olympic Village) and a selected number of smaller legacy housing developments (Media / other Village(s))
- Gaining the full cooperation of the hotel industry and other associated accommodation providers (to enable the development of an adequate Games accommodation inventory)

An Olympic and Paralympic Games in SEQ is feasible and is likely to generate significant opportunity for substantial economic and community benefits.

Thank you