



# LA24 Independent Budget Assessment Report

**City of Los Angeles**

December 2016

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# Executive summary

On September 1, 2015, the City of Los Angeles formally confirmed its candidature for consideration to host the 2024 Summer Olympic and Paralympic Games (Games). For the past two years, the Los Angeles 2024 Exploratory Committee (LA24), a nonprofit organization separate from the City of Los Angeles, has been developing the materials in support of the Los Angeles bid, including the budget. The final stage in the candidature process requires the City to submit a number of guarantees, including commitments to sign a Host City Contract in the event Los Angeles is selected.

Hosting the Games is a significant undertaking for any City as the Games are recognized as historically having a likelihood of cost overruns and delays resulting from the various projects' magnitudes and complexities. Given the nature of these commitments and the potential impact to the taxpayer, the City requested an independent review of the proposed 2024 Games budget.

KPMG LLP (KPMG) was engaged to conduct an independent assessment of the proposed budget. The objective was not to conduct a financial audit, but rather conduct an assessment of the budgeting process, the budget estimates, and underlying assumptions. KPMG assessed the budget as of October 16, 2016 to determine whether the revenues, expenditures, and assumptions, as of that date, were reasonable and complete. Any changes to the budget after this date are outside the scope of this project.

LA24's approach to developing the budget focused on a lower risk approach to hosting the Games. The budget was developed on the basis of the following guiding principles:

- Adherence to the Olympic Agenda 2020 by utilizing existing, world-class facilities and minimizing financial risk
- Utilizing a transparent process to produce a credible and balanced budget
- Employing a bottom-up approach to demonstrate rigorous, reasonable, and achievable estimates
- Using a conservative approach

KPMG found the \$5.3 billion budget prepared by LA24 to be substantially reasonable, complete, and adhered to a bottom-up conservative approach. KPMG also noted that the level of rigor considered in the development of the budget is detailed for this stage of the bid process. The strategy of using existing infrastructure rather than undertaking large scale capital development reduces the overall risk of hosting the Games for the City of Los Angeles.

While no significant findings were identified, the on-going viability of the budget depends on continued adherence to the assumptions and estimates made at this stage in the bid process. The following report provides detail on approach, budget development, observations, and results by budget category.

# Summary of budget assessment

## Introduction

The Games of the XXXIII Olympiad will be held in 2024. The United States Olympic Committee (USOC) initially selected Boston as the United States applicant city for the 2024 Games. However, on July 27, 2015, Boston withdrew due to potential cost overruns. The City of Los Angeles was the second city considered by the USOC and after a vote by the City Council was chosen as the applicant city. On September 1, 2015, the City of Los Angeles formally confirmed its candidature for consideration to host the 2024 Olympic and Paralympic Games (Games).

LA24, a nonprofit organization separate from the City of Los Angeles, has developed the candidature materials including the budget. For the 2024 Games, the International Olympic Committee (IOC) announced three stages as part of the candidature process:

- Stage 1: Vision, Games Concept & Strategy (Due: February 2016)
- Stage 2: Governance, Legal & Venue Funding (Due: October 2016)
- Stage 3: Games Delivery, Experience & Venue Legacy (Due: February 2017)

The candidature process, now in its final stage, requires the City to submit a number of guarantees, including commitments to sign a Host City Contract (HCC) in the event Los Angeles is selected. This includes the proposed budget for the Games, which per IOC guidelines must be presented in 2016 dollars.

The City engaged KPMG to conduct an independent assessment of the proposed budget prepared by LA24. This report summarizes our assessment of the budgeting process employed by LA24, the budget & underlying assumptions, and factors for the City to consider as its progresses with the bid process.

## Background for budget formation

The Games are the world's leading and most prestigious multi-sport event. The Games are held every four years and feature athletes from more than 200 countries. In an effort to maintain the uniqueness and prestige of the Games and strengthen sports in society, the IOC developed Olympic Agenda 2020, a strategic roadmap for the future of the Olympic movement. One of the features of the roadmap was

to invite potential candidate cities to present plans for hosting the Games that fit their sporting, economic, social, and environmental long-term planning needs.<sup>1</sup>

Mega-events and large-scale capital projects such as the Games are recognized as being subject to increased political influence and heightened public scrutiny, while historically having a likelihood of cost overruns and delays resulting from the various projects' magnitudes and complexities. For the host city, the construction of the Olympic stadium, Olympic village, and media & broadcasting center are large-scale capital projects that bring enormous risk. The City of Los Angeles has hosted the Games twice, in 1932 and 1984, and is home to mega-sporting franchises and universities with state-of-the-art infrastructure. The availability of existing infrastructure reduces the risk of hosting the Games for the City of Los Angeles.

Given the Olympic Agenda 2020 framework, LA24's approach to developing the budget focused on a lower risk approach to hosting the Games. As represented by LA24, the budget for the Games was developed on the basis of the following guiding principles:

- Adherence to the Olympic Agenda 2020 by utilizing existing, world-class facilities and minimizing financial risk
- Utilizing a transparent process to produce a credible and balanced budget
- Employing a bottom-up approach to demonstrate rigorous, reasonable, and achievable estimates
- Using a conservative approach

To develop the budget, LA24 assembled a team of individuals with considerable Games experience with several having worked on the London 2012 Games. As part of the budget formulation process, the team used data and best practices from prior Games to develop estimates for different categories of revenues and expenditures. The estimates were evaluated against the prevailing conditions and factors in Los Angeles. Often, multiple scenarios were created using different assumptions and the most conservative estimate was selected. For example, the revenue from domestic sponsorship was estimated using three models and LA24 chose the most conservative of the three approaches to include in the budget. LA24 conducted presentations for various stakeholder groups including the City of Los Angeles to gather and incorporate feedback in an effort to maintain transparency around the budget process.

The IOC guidelines specify that the Games budget, submitted as part of the third phase of the candidature process, should represent the budget for the Organizing Committee for the Olympic Games (OCOG). The OCOG, which would be established after the 2024 Games are awarded (September 2017), is the organization responsible for the planning and staging of the Games. Using IOC guidelines, LA24 developed a budget which included the following revenue and expenditure categories illustrated in Table 1.

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<sup>1</sup> Olympic Agenda 2020 (<https://www.olympic.org/olympic-agenda-2020>)

**Table 1: Budget categories for the proposed Games**

Revenue Categories	Expenditure Categories
— IOC Contribution	— Venue Infrastructure
— TOP Contribution	— Sport, Games Services & Operations
— Domestic Sponsorship	— Technology
— Ticket Sales	— People Management
— Licensing & Merchandising	— Ceremonies & Culture
— Grants, Lotteries and Other Revenue	— Communications, Marketing and Look
	— Corporate Administration and Legacy <sup>1</sup>
	— Other Expenses <sup>2</sup>
	— Contingency

<sup>1</sup> Includes insurance

<sup>2</sup> Includes municipal services

## Scope of work

KPMG assessed the budget as of October 16, 2016 to determine whether the revenues, expenditures, and assumptions, as of that date, were reasonable and complete. The financial estimates were based on assumptions developed by LA24. If decisions on the part of LA24, with respect to the assumptions, source materials, and plans, vary from those used to develop the proposed budget presented to KPMG (October 16, 2016), the revenue projections and financial estimates would require modification. For example, a change in venue selection for a sporting event may impact budget estimates.

The proposed budget prepared by LA24 as of October 16, 2016 totals \$5.3 billion. Significant changes to revenues and expenses after the date noted, if any, fall outside the scope of our review. Given the limited timeframe to conduct the assessment and the fluidity of the budget process, the scope of KPMG's independent assessment included the following:

- Assessing LA24's methodology and approach for budget formulation including the guiding principles.
- Assessing projected revenues and underlying assumptions (emphasis on higher dollar and higher risk areas).
- Assessing projected expenditures and underlying assumptions (emphasis on higher dollar and higher risk areas).
- Identifying expense categories not specifically included and assessing whether they belong within the budget estimates.
- Conducting sensitivity analysis as needed to determine impact of findings.

The following areas and services were outside the scope of the KPMG project:

- A financial audit of the proposed Games budget.
- Other bid documents and evidence that are part of the Stage 3 candidature package.
- Assessing the scenarios and contingencies that could impact the budget over the course of the next seven to eight years.

- Calculating the amount of additional costs likely to be incurred by the City of Los Angeles that is appropriately not included in the budget.

## Conclusion

KPMG found the \$5.3 billion budget prepared by LA24 to be substantially reasonable, complete, and adhered to a bottom-up conservative approach. KPMG also noted that the level of rigor considered in the development of the budget is detailed for this stage of the bid process. The strategy of using existing infrastructure rather than undertaking large scale capital development reduces the overall risk of hosting the Games for the City of Los Angeles.

KPMG does, however, have a few observations related to the proposed budget and other factors for the City to consider. Although not significant in nature, the on-going viability of the budget depends on continued adherence to the assumptions and estimates made at this stage in the bid process.

Our observations are grouped into two categories which include observations related to the budget and factors outside the budget for the City's consideration (Non-OCOG budget).

### Category 1 – Budget observations

The budget findings include:

- The process for estimating ticketing revenue deviated from the guiding principle of using a conservative approach
- The methodology used to estimate certain expense categories limited comparability to industry benchmarks
- Assumptions related to the impact of future inflation have not been determined as the budget is currently presented in 2016 real dollars (as required by the IOC)

### Ticketing Revenue

The revenue from ticket sales in the proposed budget is \$1,473.5 million. LA24's approach for estimating ticketing revenue was consistent with approaches used by other multi-sport events. The list of sporting events and sessions were determined based on IOC guidance and used for selecting venues. LA24 considered the popularity of the sport and selected venues with smaller seating capacity for lesser known sports. The gross capacity of venue was then adjusted for seat kills (seats unavailable for sale to accommodate technical elements) and accredited seats (seats reserved for a selection of guests and spectators) to determine net capacity. The seating capacity was then divided into tiers to determine pricing. Ticket prices were estimated based on the popularity of the sport.

LA24 used a sell-rate of 97% of net capacity for each sport and each session to determine ticketing revenue. This sell-rate was based on the London 2012 average ticket sell rate of 97%, which was the highest benchmark achieved for recent Games. Based on historical data, applying a 97% sell-rate across all sports and all sessions does not follow a conservative approach of determining rates based on the popularity of the sport and timing of the session (weekdays versus evenings or weekends).

Although, historically popular events and sports (opening and closing ceremonies, and sports such as basketball, swimming, track, gymnastics & football) account for 70% of ticketing revenue, KPMG performed an analysis to determine the potential range of impact using an alternative model. Sports and ceremonies were ranked in descending order based on the LA24 revenue projections. This ranking was divided into 10 levels (percentile groupings) based on popularity of sports and events. Each percentile grouping's sell rate was then reduced by 2%. The sell rate in the model ranges from 97% for the top percentile grouping to 79% for the lowest.

The range of potential impact, based on the scenario of LA24 achieving the 97% sell-rate across all sports and sessions and based on the scenario from our analysis, could be zero (no impact) to \$34.4 million (2.63%). Similarly, the corresponding reduction in ticketing revenue on food and beverage commissions could be zero to \$6.7 million.

### **Expense categories**

One of LA24's guiding principles in developing the budget was employing a bottom-up approach to demonstrate rigorous, reasonable, and achievable estimates. Given that the Games are seven to eight years away, the level of detail is generally thorough. However, KPMG noted that the presentation of the following expense categories limited comparability to industry benchmarks:

- a) People management
- b) Administration cost
- c) Venue infrastructure contingency

#### **a) People management**

The total cost of people management in the proposed budget is \$695.8 million with the primary cost related to professional staff. LA24 developed the workforce model using an allowance approach, rather than a model with specific position start and finish dates. Given that the Games are nearly eight years away, the allowance approach was reasonable.

LA24 used the London 2012 workforce benchmark was adjusted to account for differences in scale and scope. Further adjustments were made based on the significant number of highly skilled professionals employed in the event business in Los Angeles and in the surrounding areas. These adjustments resulted in a slower ramp up of staff, a lower peak headcount and a significant reduction in the number of cumulative months of employment (51%) for LA24 versus London 2012.

Given the assumptions outlined by LA24, market conditions and capacity, and a difference in scale and scope, the allowance approach is reasonable for this stage in the process. For on-going budget management and potential savings in comparison to London 2012, it will be important that the LA24 allowance estimate be the benchmark for the creation of the future detailed staffing plan to help ensure the plan remains within the parameters of the budget estimates.

#### **b) Administration cost**

In examining the completeness of the proposed budget, KPMG compared an inventory of cost categories regularly used in major international multi-sport games to the proposed budget. This analysis identified certain line items that may be embedded in other line items, such as:

- Board of Director and Board Committee expenses
- Pre-Olympic travel and presentation costs
- General functional overhead costs not attributable to a specific program or project
- Costs associated with International Sport Federations travel and management
- Project management office
- Professional services beyond external audit, such as tax planning
- Closing event production costs in the Tokyo 2020 Games
- Games readiness program

Discussion with LA24 indicated that these line items were included in the budget based on benchmarks from the London 2012 Games and embedded in certain budget line items although this

could not be validated. KPMG conducted a sensitivity analysis and these types of costs are typically not significant (less than \$10 million), but are important functions that need to be planned for and incorporated into the budget.

### **c) Venue infrastructure contingency**

The total cost of venue infrastructure is \$1,198.3 million. Venue infrastructure costs have historically represented the most significant budget line item for any Games budget as it normally includes a large facility development program for the construction of the Olympic stadium, Olympic village, and media & broadcasting center. The City of Los Angeles has several sporting venues that are currently capable of hosting an event similar in scale to the Games. Also, the accommodation at UCLA is an existing facility that is comparable to an Olympic Village and USC has the facilities to support the media village. LA24 has proposed the use of these existing facilities thereby reducing the financial risk associated with large-scale capital projects.

LA24 engaged a team experienced in prior Games and sporting events to determine venue infrastructure costs at a detailed level. Major components of the cost build up (e.g. unit costs, contingencies, contractor mark-ups) were tested with suppliers in the market and adjusted for relevant factors. The total venue infrastructure contingency amount was estimated at a design and construction level. A design contingency is the amount set aside to account for changes between concept and actual design. A construction contingency is the amount set aside to account for unforeseeable conditions during the construction phase. However, LA24 took two different approaches to estimating the design and construction level contingency.

The design contingency was included within the venue infrastructure cost of \$1,198.3 million. According to estimates provided by LA24, the design contingency was included in that amount at a unit cost level and within the range of seven to twelve percent depending on the design specifications. Given as design contingency adjustments were made at a detailed unit cost level KPMG could not verify the actual level of design contingency included.

The construction contingency was estimated on a venue-by-venue basis taking into account the risk of temporary overlay versus permanent investment. Further, the construction contingency was included within the contingency budget line item.

KPMG conducted a sensitivity analysis and determined that the level of design contingency combined with the construction contingency resulted in an overall contingency of 20 to 22% of the venue infrastructure cost. Even though LA24 did not set aside amounts for market risk and owner-directed changes, the contingency is reasonable given the temporary nature of the works, the current level of design and present stage in the budget process. For on-going budget management, it will be important that the contingency assumptions be clearly identified and presented separately for construction, design, market risk and owner-directed changes to allow for transparency and easier tracking of adjustments.

### **Inflation methodology**

The proposed budget is currently presented in 2016 real dollars as per IOC requirements for the bid materials. The escalation of costs to 2024 has not yet been completed nor has the methodology been determined. LA24 has engaged economic advisors to develop an escalation methodology for the period of 2016 to 2024, which is expected to be completed in December 2016.

As LA24 moves forward with developing the budget, the escalation methodology should take into account that inflation may not be applied equally to both the revenue and cost estimates which may potentially impact the budget contingency. This is a key consideration to understand the financial commitment for the Games.

## Category 2 – Factors for City’s consideration (Non-OCOG)

The budget prepared by LA24 represents the proposed budget for the OCOG under the directives of the IOC guidelines. However, there are other factors and expenditures that appropriately are not included in the budget but may be important for the City as it considers hosting the Games. The following items are key to the successful delivery of the Games and worthy of mention.

- City vision and impact on municipal services
- Security
- Timing of other City Infrastructure projects
- Ongoing oversight

### **City vision and impact on municipal services**

The proposed budget includes a reasonable estimate of \$85.3 million for the cost of the incremental municipal services to be provided for the Games based on IOC requirements. However, based on our experience, a Host City may incur costs associated with the City’s vision for the Games that are outside of the budget. The City’s vision for the Games, which is often complementary to the Bid Committee’s vision for the Games, can include items such as:

- City-run Live Sites (over and above those provided for in the proposed budget)
- Tourism development goals
- Economic development goals
- Cultural festivals
- Education and legacy related initiatives for the broader community (e.g. beyond the sport sector)
- Inclusion - e.g. outreach to youth and at risk populations

With respect to economic and tourism development, it would be important for the City to prepare for the Games as a mega global event. For example, the City would be the focus of global media attention in the seven years leading up to the Games. This has the potential to enhance both the economic and tourism development for the City. Additionally, given the heightened global interest in the City, there may be opportunity to enhance the City’s economic development plans by marketing business development opportunities for Los Angeles, to attract new business to the City. To do so, however, will require a plan to both actively market those opportunities and respond to inquiries from interested parties. Lastly, the City’s tourism development could be enhanced due to the increased national and global profile the City will have as an Olympic Host City in the years leading up to 2024 and beyond.

The inclusion of these discretionary items may drive increased demand on City operations and increased effort required from the City’s “Olympic Operations Office”, which will likely be established to coordinate, plan and implement City-related activities. As a go-forward step, KPMG recommends the City consider these items to allow for appropriate resource planning and to capture the benefits of being a Host City.

### **Security**

In the event the Games are awarded to Los Angeles, the Department of Homeland Security (DHS) has confirmed that the Games would be designated a National Special Security Event (NSSE) based on the anticipated attendance by dignitaries and the size and significance of the event. With an NSSE, the US Secret Service (USSS) becomes the lead agency by statute, for the “planning, implementation and coordination of operational security” for the Games, with the Federal Bureau of Investigation (FBI) responsible for counter terrorism activities and the Federal Emergency Management Agency (FEMA)

for emergency management. Other national agencies involved include the Department of Defense and the Department of Health and Human Services. Local law enforcement agencies serve as lead for security operations within their jurisdictions, under the overall coordination of the USSS.

The NSSE does not provide funding to local law enforcement agencies for overtime or other operational requirements; however, there are a number of appropriations or grants available to local agencies for law enforcement and emergency management. Operational security costs for the full deployment of law enforcement, overtime, planning, and coordination activities are not included in the budget except for a modest allocation in Municipal Services, which is standard with budgets for the OCOG from Games to Games as they have no control over the level or security planning, nationally, regionally or locally. The OCOG does include the cost of requirements to support security activities in and around the venues, e.g. fencing, power, cabling, tents/cabins, and some private security for pedestrian & vehicle screening.

We recommend the City and LA24 consider working with local enforcement agencies to discuss the additional costs of security beyond those covered by the NSSE designation, with the view of determining the required timing for application to grant programs.

### **Timing of other City Infrastructure projects**

As represented by LA24, completion of major infrastructure projects (e.g. LAX modernization, transit improvement projects) currently underway or planned between now and 2024 will not have an impact on the ability to host the Games. However, these projects have the potential to impact the citizens of Los Angeles, Olympic and Paralympic visitors (athletes and officials), and tourists attending the Games by greatly enhancing their experience and impressions of the City. The completion of the projects also have the potential to contribute to the efficiency of hosting the Games, as they will reduce the level of disruption that the Games may cause across the City.

Given the importance of the completion of these infrastructure projects in terms of the image of the City and visitor experience during the Games, we recommend ongoing adherence to schedules be stressed and periodic updates be provided to the OCOG. Other new infrastructure projects will also need to take into consideration potential impact to the Games.

### **Ongoing oversight**

Los Angeles, as the signatory to the IOC HCC, will have representation on the Board of Directors. This position will provide the City with an oversight role with respect to the planning and hosting the Games. Currently, the HCC guarantees that the City will have at least one member on the Board.

However, given the scale of this project and the complexities involved, we recommend the City insist it has at least two members. This approach would also be strengthened by requesting that one of the City appointees be on: a) the Board Audit and Finance Committee, and b) the Board Executive Committee. We also recommend the City institute a program of regular reviews of the budget to provide ongoing fiscal oversight.

## Key analysis

This section contains a summary of the procedures performed based on the testwork completed for each budget line item represented in the proposed budget.

### Overall Budget for the 2024 Summer Olympic and Paralympic Games

In order to test the reasonableness and completeness of the proposed budget, we verified the formulas and mathematical accuracy of the budget by comparing the roll-up of budget line items to the summary level. We also developed a spreadsheet comprising budget categories regularly used in major international multi-sport games and cross-referenced those categories to the proposed budget with the purpose of identifying any potential gaps.

Table 2 illustrates the LA24 proposed budget of the OCOG for the Games.

**Table 2: LA24 Budget for the proposed Games as of October 16, 2016**

<b>Revenue</b>	<b>USD (\$M 2016)</b>
IOC contribution	855.0
TOP contribution	453.5
Domestic sponsorship	1,930.7
Ticket sales	1,473.5
Licensing & merchandising	225.5
Grants, lotteries and other revenue	368.5
<b>Total</b>	<b>5,306.7</b>
<b>Expenditure</b>	<b>USD (\$M 2016)</b>
Venue infrastructure	1,198.3
Sport, games services & operations	922.6
Technology	565.6
People management	695.8
Ceremonies & culture	176.8
Communications, marketing, and look	194.2
Corporate administration and legacy	220.5
Other expenses	841.1
Contingency	491.8
<b>Total</b>	<b>5,306.7</b>

As noted in Table 2, LA24 has presented a balanced budget for the bid process.

## Revenues

As noted in Table 2, revenue categories included IOC contribution, The Olympic Partner (TOP) program contribution, domestic sponsorship, revenue from ticket sales, licensing & merchandising, grants, lotteries and other revenue. KPMG reviewed the revenue categories with particular focus on higher dollar and risk categories which included IOC contributions, TOP contributions, revenue from domestic sponsorship, and ticket sales.

### IOC contribution (\$855 million)

The IOC Contribution is a share of broadcast revenues negotiated by the IOC and paid to the OCOG. LA24 followed the IOC direction to account for revenue based on 2024 Candidate Cities Budget Information. There are no relative concerns as the amount is stipulated by the IOC and is stable. However, the timing of the payment schedule for the IOC contribution has implications for the OCOG's cash flow and line of credit.

KPMG discussed with LA24 their plans to manage cash flow. LA24's approach as follows is consistent with other OCOGs.

- Transition expenses to cover the period from when the Games are awarded (September 2017) to the full establishment of the OCOG (early 2018) have been provided for in the budget.
- The OCOG budget is based on a plan to limit expenses in the initial years (2017-2020).
- The IOC contribution provides for a graduated cash flow over the period 2020 to 2024.
- LA24 has budgeted a line of credit to cover cash shortfalls until the major 2024 revenue streams are earned.
- Bank charges for the budgeted line of credit have been provided for in the budget.

### TOP contribution (\$453.5 million)

The TOP program is an international sponsorship program that covers the Games. TOP partners have exclusive worldwide sponsorship rights to the Games and provide both products and services to the host OCOG. LA24 followed the IOC direction to account for revenue based on 2024 Candidate Cities Budget Information.

There are no relative concerns as the amount is stipulated by the IOC and sponsorship agreements are negotiated for different periods and cover different number of Games.

### Domestic sponsorship (\$1,930.7 million)

Domestic sponsorship represents the committed value of revenue from different tiers of sponsors. The number of sponsors per tier is limited to allow the OCOG to commit to exclusivity for each category. Sponsor deals include cash and value in kind (VIK) components.

LA24 used a tiered approach to determine domestic sponsorship revenue. Sponsorship revenue amounts for London 2012, Rio 2016, and Tokyo 2020 (to date) were considered. Guidance from USOC was used to create a sponsorship matrix of potential categories, US market maps, and the Joint Marketing Program Agreement (JMPA) between LA24 and the USOC was used to determine the royalty arrangements from OCOG to USOC on revenue categories.

Once available data was collected, a bottom-up approach by tier was developed using data from London 2012. Next, a bottom-up approach by category (i.e. industry type such as telecommunications,

airlines, banking) was created for the US market and estimating growth in sport sponsorship as an industry. Finally a top-down approach using London 2012 was estimated. All three models were compared and LA24 chose the most conservative of the three approaches to include in the budget.

There are no relative concerns with this line item given the conservative approach, the degree of modeling and the comparison to actuals realized by previous Games.

## Ticket sales (\$1,473.5 million)

Ticket sales is the revenue generated from the sale of tickets for the opening & closing ceremonies, Olympic and Paralympic Games, hospitality rights, and other miscellaneous ticketing revenue (Olympic test events).

LA24’s approach for estimating ticketing revenue was consistent with approaches used by other multi-sport events. The list of sporting events and sessions were determined based on IOC guidance and used for selecting venues. LA24 considered the popularity of the sport and selected venues with smaller seating capacity for lesser known sports. The gross capacity of venue was then adjusted for seat kills (seats unavailable for sale to accommodate technical elements) and accredited seats (seats reserved for a selection of guests and spectators) to determine net capacity. The seating capacity was then divided into tiers to determine pricing. Ticket prices were estimated based on the popularity of the sport.

LA24 used a sell-rate of 97% of net capacity for each sport and each session to determine ticketing revenue. This sell-rate was based on the London 2012 average ticket sell rate of 97%, which was the highest benchmark achieved for recent Games as shown in Table 3.

**Table 3: Actual ticket sales for prior Games**

Year and Location	% of Available Tickets Sold
2000, Sydney, Australia	88%
2004, Athens Greece	71% <sup>1</sup>
2008, Beijing, China	95.6%
2012, London, UK	97%

Source: <https://www.statista.com>

<sup>1</sup> Athens 2004 was considered an outlier, given the challenges faced by the 2004 OCOG, and therefore not considered as a reliable benchmark

Preliminary data from the Rio 2016 Games indicate that 92% of the available tickets were sold.

Based on historical data, applying a 97% sell-rate across all sports and all sessions does not follow a conservative approach of determining rates based on the popularity of the sport and timing of the session (weekdays versus evenings or weekends).

Although, historically popular events and sports (opening and closing ceremonies, and sports such as basketball, swimming, track, gymnastics & football) account for 70% of ticketing revenue, KPMG performed an analysis to determine the potential range of impact using an alternative model. Sports and ceremonies were ranked in descending order based on the LA24 revenue projections. This ranking was divided into 10 levels (percentile groupings) based on popularity of sports and events. Each percentile grouping’s sell rate was then reduced by 2%. The sell rate in the model ranges from 97% for the top percentile grouping to 79% for the lowest.

The range of potential impact, based on the scenario of LA24 achieving the 97% sell-rate across all sports and sessions and based on the scenario from our analysis, could be zero (no impact) to \$34.4 million (2.63%). Similarly, the corresponding reduction in ticketing revenue on food and beverage commissions could be zero to \$6.7 million.

## Licensing and merchandising (\$225.5 million)

Licensing and merchandising revenue includes all sales through retail stores and online sales. The operation of this function is typically outsourced, with the OCOG receiving a royalty on gross or net sales. In addition there are specific programs around stamps and coins that generate additional revenue.

LA24 benchmarked figures available from the London 2012 Games to estimate revenue. Consideration was given to e-commerce growth both globally and in the US since London 2012 with increased margins considered for online sales (wholesale and retail mark-up). Market size comparisons were performed, both US to UK and LA to London and market growth related to licensing and merchandising was taken from a well-known study. Finally, revenue for London 2012 was adjusted to account for foreign exchange and inflation from 2012 to 2016.

There are no relative concerns with this budget line item given the conservative approach adopted by LA24. Market growth was based on an external industry study and modeled using less than a quarter of the potential growth, which allows for a revenue upside.

## Grants, lotteries and other revenue (\$368.5 million)

Other revenues include all other categories including lotteries, government contribution, grants, donations, asset disposal, food & beverage commission, and hotel commissions.

- For food and beverage commission, LA24 calculated revenue based on projections of ticket sales. The benchmarks were tested against the average of food and beverage spend at last four Super Bowls. The estimate is conservative and includes room for additional revenue as the model does not factor in sales to accredited seats or people in sports park live sites.
- For revenue from donations, LA24 identified potential donors such as prominent public figures within the City and private sponsors of LA24. Government contribution and grants takes into account historical data such as funding from Veteran Affairs for the Paralympics or funding from grant programs such as the Wounded Warriors Project, VA Adaptive Sports Grants, and others.
- For revenue from lotteries, LA24 used a royalty based approach.

Overall, there are no relative concerns with this budget line item given the conservative approach and testing of estimates against benchmarks.

## Expenditures

As noted in Table 2, expenditure categories include venue infrastructure, sport, games services & operations, technology, people management, ceremonies & culture, communications, marketing & look, corporate administration & legacy, other expenses, and contingency. KPMG reviewed the expenditure categories with a more detailed review of higher dollar categories such as venue infrastructure and sport, games services & operations.

## Venue Infrastructure (\$1,198.3 million)

The cost of venue infrastructure represents the single largest budget item. An assumption in the development of the budget is the use of existing infrastructure that reduces the risk associated with large-scale capital projects. In comparison to other host cities, the City of Los Angeles has several sporting venues that are currently capable of hosting an event similar in scale to the Games. The student accommodation at UCLA is an existing facility that is comparable to an Olympic Village and USC has the facilities to support the media village. The use of existing facilities reduces the risk and limits the costs to venue overlays and temporary venue construction costs for both competition and non-competition venues.

LA24 has used a detailed approach to estimating costs. For example, the current design level is based on block diagrams informed by Schedule of Accommodations (SOA) and is relatively advanced for this stage in the process. Given the complexities involved in estimating venue infrastructure costs, LA24 used the services of professional firm AECOM to drive this effort. LA24 also relied on data from prior Games, consultations with industry experts, working sessions with various stakeholders and reviewing quotes from local and international suppliers to estimate venue infrastructure costs. LA24's use of a conservative approach is evident in estimating each venue's cost on an individual, stand-alone basis. Although opportunities for sharing resources or economies of scale exist, these have not yet been factored in allowing for potential cost savings in the future. In addition, LA24 has engaged stakeholders and partners to maintain transparency.

- For costs of temporary overlays and permanent investment, LA24 obtained unit costs from local & international suppliers and used Los Angeles and US benchmarks from AECOM's internal sources and AECOM-owned companies - Hunt Construction and Tishman Construction. Most of the benchmark project estimates were at concept design level keeping in line with the overall detailed approach for the budget. LA24 met with local and international suppliers to understand the range that unit costs would likely fall in for this type of event and the factors that might contribute to higher costs or premiums.
- For other cost categories, LA24 conducted additional studies for complex elements and relied on data from other Games to estimate other costs. Services and utilities costs were forecasted using power requirements from London 2012 for comparable venues. Professional fees and other soft costs were estimated at 12% of all construction costs. This allowance is generally within the range of industry benchmarks.
- For contingency, LA24 considered three categories which included design, construction, and market risk & owner-directed changes. The design contingency was embedded within the venue infrastructure cost of \$1,198.3 million at a unit cost level within the range of seven to twelve percent depending on the design specifications. The construction contingency of \$107 million was estimated on a venue-by-venue basis taking into account the risk of temporary overlay versus permanent investment. Finally, LA24 has indicated that it views the risk of owner-directed change orders to be low as this will partly be managed through negotiations of Venue Use Agreements (VUAs) and close collaboration with stakeholders including International Sports Federations, Olympic Broadcasting Services (OBS), partners and others.

KPMG conducted a sensitivity analysis and determined that the level of design contingency combined with the construction contingency resulted in an overall contingency of 20 to 22% of the venue infrastructure cost. Even though LA24 did not set aside amount for market risk and owner-directed changes, the contingency is reasonable given the temporary nature of the works, the current level of design, and present stage in the budget process. For on-going budget management, it will be important that the contingency assumptions be clearly identified and presented separately for construction, design, market risk and owner-directed changes to allow for transparency and easier tracking of adjustments.

## Sport, Games services, and Operations (\$922.6 million)

This category includes all planning, services and operations around the sport competition, International Sport Federation management, services provided to customer groups (e.g. transportation, accommodation, food and beverage), and how the venues & villages will operate. The primary expenses include accommodations, food & beverage, medical & anti-doping costs, logistics, security, sport, transport, event services, venue operations management, Olympic and Paralympic village operations, media village operations, test events, and cleaning & waste.

For the majority of expenses, LA24 used data from London 2012 and from the recently concluded Rio 2016 Games. These estimates were used as a starting point and then adjusted for inflation, currency exchange and market conditions, and factors prevalent in the Los Angeles area. In particular, this approach was used to estimate medical and anti-doping costs, logistics, sports, event services, test events, and cleaning & waste costs. A conservative approach and published available data for the Los Angeles market were used to estimate budgeted amounts. For example, in estimating anti-doping costs, LA used the highest price paid for an anti-doping test and an assumption of testing 60% of all athletes, which is higher than any previous Games.

- For accommodations, LA24 used the IOC technical manuals to determine client group populations. Data from London 2012 and Rio 2016 was used to create a model that analyzed the mix of accommodation levels required (e.g. star rating), requirements of regional athletes, and actual athlete numbers. Room nights were calculated based on the length of the Games and room rates based on July and August 2015 Smith Travel Research (STR) global average room rate for Los Angeles and adjusted for inflation to 2016.
- For food and beverage commission, LA24 used client group numbers from the HCC, workforce modeling, and London 2012 & Rio 2016 numbers. The model used UCLA's highest price for summer meal as the baseline and included a premium for athletes' meals. The UCLA meal costs were adjusted for Games requirements and tiered for workforce versus athlete meals. Finally, the VUAs with UCLA is based on usage and not maximum number of meals to control costs.
- For security and safety-related costs, LA24 considered several components such as temporary infrastructure, event services, transportation, and municipal services. For the overall security, LA24 obtained that the Games will be classified as a National Special Security Event (NSSE). With an NSSE, the US Secret Service (USSS) becomes the lead agency by statute, for the planning, implementation, and coordination of operational security for the Games, with the Federal Bureau of Investigation (FBI) responsible for counter terrorism activities, and the Federal Emergency Management Agency (FEMA) for emergency management.
- For transportation costs, LA24 considered several components such as client group transportation, allowances for greater transportation operations such as Olympic Route Network (ORN) and Traffic Demand Management (TDM), and spectator transportation. In estimating athlete transportation volume, LA24 used data from London 2012 and Rio 2016. The rates were based on numbers quoted in LA Department of Transportation (LADOT) contracts for mega-events. Spectator transportation costs leveraged numbers from the national Borrow-a-Bus Program numbers previously used during the Atlanta 1996 and Salt Lake City 2002 Games. Finally, fuel cost was based number of trips for a bus (athletes, media, and spectators).
- For venue operations management, LA24 calculated costs for venue compensation, facilities & maintenance, and utilities based on the binding VUAs which have been signed with all venues except for locations yet to be finalized.
- For Olympic and Paralympic village operation, LA24 calculated costs for entertainment, housekeeping, laundry services, project costs, and supplier fees. Accommodation

requirements were determined on the basis of IOC technical manual and London 2012. To keep costs under control, the model assumed no changes would be required to the existing student accommodation room configuration set-up except for minor modifications for Paralympic athletes. The benchmarks were adjusted with Los Angeles market unit costs for specific equipment and fit out, number of staff required, hours, days, and typical hourly rate. Cost estimates for media room nights were based on regular hotel rates.

Overall, there are no relative concerns for these expenses given the conservative approach used to determine costs. As with all expense line items, KPMG leveraged a list of expected costs to compare to the budget. This analysis identified certain items that according to LA24 were embedded in other budget line items. Refer to Appendix A for a list of expense categories that are embedded within other budget line items. However, KPMG conducted a sensitivity analysis and these types of costs are not significant but are important functions that need to be planned for and incorporated into the budget.

## Technology (\$565.6 million)

Technology includes information technology (e.g. devices, hardware, software, and infrastructure), telecommunications (e.g. voice and data services), games technology (e.g. results, in-venue technology, video boards, and scoreboards), and other technology deliverables (e.g. websites). The majority of these are delivered through goods and services provided by TOP sponsors (Atos, Omega, Panasonic or Samsung) or domestic sponsors (e.g. telecom provider). About 80% of technology costs are derived from TOP and domestic sponsorship agreements. Also, the technology expense has a direct correlation with related sponsorship revenue and as a result an increase in technology costs would increase the revenue side of the sponsorship agreements.

LA24 estimated non-sponsorship technology costs on the basis of London 2012 and local market research. There are no relative concerns with technology costs as a significant portion of the cost is estimated on the basis of IOC guidance.

## People Management (\$695.8 million)

People management covers traditional human resource activities such as recruiting, performance management & compensation, volunteer recruitment, training & uniform, and accreditation for all Games customer groups.

LA24 developed the workforce model using an allowance approach, rather than a model with specific position start and finish dates. Given that the Games are nearly eight years away, the allowance approach was reasonable.

LA24 used the London 2012 workforce benchmark was adjusted to account for differences in scale and scope. Further adjustments were made based on the significant number of highly skilled professionals employed in the event business in Los Angeles and in the surrounding areas. These adjustments resulted in a slower ramp up of staff, a lower peak headcount and a significant reduction in the number of cumulative months of employment (51%) for LA24 versus London 2012.

Per discussions with LA24, the number of staff employed by London would not be required in the LA24 workforce. Also, other staff employed by the OCOG are covered in other LA24 budget line items. For example, LA24 has negotiated VUAs including commitments to use venue and event staff already employed in these venues.

Given the assumptions outlined by LA24, market conditions and capacity, and a difference in scale and scope, the allowance approach is reasonable for this stage in the process. For on-going budget management and potential savings in comparison to London 2012, it will be important that the LA24

allowance estimate be the benchmark for the creation of the future detailed staffing plan to help ensure the plan remains within the parameters of the budget estimates.

## Ceremonies and Culture (\$176.8 million)

Ceremonies includes the opening and closing ceremonies for the Games, torch relay, live sites, team welcome ceremonies in the Athletes' Village, and in-venue victory (medal) ceremonies. Culture refers to the Cultural Olympiad, a program of cultural events in the four years leading up to the Games and educational programs around the Games.

The costs for ceremonies & culture are based on London 2012 and as such there are no relative concerns for this expense. As with all expense line items, KPMG leveraged a list of expected costs to compare to the budget. This analysis identified certain items that according to LA24 were embedded in other budget line items. Refer to Appendix A for a list of expense categories that are embedded within other budget line items. However, KPMG conducted a sensitivity analysis and these types of costs are not significant but are important functions that need to be planned for and incorporated into the budget.

## Communications, Marketing and Look (\$194.2 million)

Communications and marketing are similar to typical corporate functions. Communications includes brand management, public relations, community relations, and press operations. Marketing includes revenue generation, fundraising and commercial rights management. Look of the Games covers signage, way finding and spectacles, such as large installations of the Olympic rings.

To estimate the cost of communication, marketing and look, LA24 used the estimates from London 2012 and adjusted the values for the Los Angeles market, inflation, and currency conversion. The model uses the concept of sports parks to reduce complexity and benefit from synergies. The costs were reviewed by subject matter experts that worked on London 2012.

Overall, there are no relative concerns for these expenses given the conservative approach used to determine costs. As with all expense line items, KPMG leveraged a list of expected costs to compare to the budget. This analysis identified certain items that according to LA24 were embedded in other budget line items. Refer to Appendix A for a list of expense categories that are embedded within other budget line items. However, KPMG conducted a sensitivity analysis and these types of costs are not significant but are important functions that need to be planned for and incorporated into the budget.

## Corporate Administration and Legacy (\$220.5 million)

Administration is primarily an overhead function (e.g. governance, office rent, and fit out) but also covers insurance, protocol, and language services. Environment, sustainability and legacy programs are also included in this area.

General administration costs were determined using estimates from London 2012 and adjusted the values for the Los Angeles market, inflation, and currency conversion. Rent costs were estimated on the basis of workforce plan using local rent and utilities rates.

To estimate insurance costs, LA24 employed the services of subject matter experts. Several different categories of coverage were considered based on opinion of local insurance experts.

- For construction of venue infrastructure, the insurance coverage types considered included venue construction and overlay, capital replacement, builder's risk, and cost overruns. Given as construction of venue infrastructure will be contracted to third-party vendors, LA24's

approach for estimating insurance premium for construction is to negotiate terms and have the premiums paid by contractors.

- For the actual Games, LA24 has considered multiple insurance types such as event cancellation, HCC or games operating agreement, trade credit, loss of appeal, public liability & indemnity, terrorism, earthquake, other miscellaneous, and cyber security & privacy liability. The range of coverage for the different types is \$100 million to \$500 million and the insurance premium costs in the range of \$1 million to \$5 million.
- Finally, an over-arching coverage in the form of all-risk excess coverage is estimated with a coverage value of \$500 million and insurance premium of \$10 million. The excess insurance is similar to an "umbrella" policy that provides additional coverage over and above the amounts insured under the public liability, event cancellation, and OCOG & HCC policies. It is a way of adding an extra layer of broad protection. The type, insurance premium and coverage across the various policies is in line with insurance costs for other Games.

Overall, there are no relative concerns for these expenses given the conservative approach used to determine costs. As with all expense line items, KPMG leveraged a list of expected costs to compare to the budget. This analysis identified certain items that according to LA24 were embedded in other budget line items. Refer to Appendix A for a list of expense categories that are embedded within other budget line items. However, KPMG conducted a sensitivity analysis and these types of costs are not significant but are important functions that need to be planned for and incorporated into the budget.

## Other Expenses (\$841.1 million)

Other Expenses is composed of marketing rights and royalties, athlete experience and innovation, and municipal services. To estimate costs for marketing rights and royalties, LA24 used IOC guidance to determine contractual obligations in the HCC, JMPA, and also as a percentage of revenue from ticketing, domestic sponsorship, licensing & merchandising.

LA24 conducted workshops to gather data on athlete experience and innovation. The budgeted amount includes costs for research and development. Additional amounts have been included to allow for innovation and enhancements to athlete experience.

The municipal services costs that are part of other expenses includes enhanced event services, road closure/street services, enhanced departmental services, and enhanced sanitation & cleaning. LA24 used public data available through city contracts with major local events such as the annual Los Angeles marathon, Los Angeles Rams, and the 2015 Special Olympic World Games. The amounts were then budgeted using conservative time estimates such as six years for cost associated with the coordination of general city services, 50 days for city information technology services or 50 days of city emergency management services.

The cost of municipal services estimated in the budget represents the cost for the OCOG. This is appropriate given the IOC guidelines for estimating municipal services as part of the budget. However, there are other factors and expenditures that appropriately are not included in the budget (as noted in the Non-OCOG section of the report) but may be important for the City as it considers hosting the Games.

There are no relative concerns with this line item as the cost for other expenses is based on contractual obligations that are directly tied to revenue line items and a discretionary research and development fund. Also, a reasonable approach was adopted to determine municipal services costs. As with all expense line items, KPMG leveraged a list of expected costs to compare to the budget. This analysis identified certain items that according to LA24 were embedded in other budget line items. Refer to Appendix A for a list of expense categories that are embedded within other budget line

items. However, KPMG conducted a sensitivity analysis and these types of costs are not significant but are important functions that need to be planned for and incorporated into the budget.

## Contingency (\$491.8 million)

The contingency allowance in the budget is \$492 million. This amount includes \$107 million for contingency on venue infrastructure costs. The remaining \$385 million represents contingency for the other budget categories.

Given that the Games are seven to eight years away, the contingency allowance is deemed to be reasonable. In arriving at this position, KPMG noted the following:

- No major capital construction projects form part of the budget. As a result, the degree of financial risk and potential draw on the contingency allowance is less than is normally found with proposed major international multi-sport games budgets, which often include major capital construction projects.
- The budget is currently presented in 2016 real dollars as per IOC requirements for the bid materials. As LA24 moves forward with the bid process, an escalation for inflation will need to be applied to the cost estimates including the contingency allowance.
- LA24 used a conservative approach to develop the budget for both revenue and costs estimates. Due to this approach, additional layers of contingency may exist at the budget line item level.

# Appendix A — Embedded expenses

In examining the completeness of the proposed budget, KPMG compared an inventory of cost categories regularly used in major international multi-sport games to the proposed budget. Discussion with LA24 indicated that the line items listed below were included in the budget based on benchmarks from the London 2012 Games and embedded in certain budget line items. KPMG conducted a sensitivity analysis and although these types of costs are typically not significant (less than \$10 million), they are important functions that need to be planned for and incorporated into the budget.

- Board expenses including chair and committees
- Pre-Olympic travel and presentation costs
- General overhead for functions
- CEO expenses
- Legacy programming
- Social programs
- Transfer of knowledge (TOK)
- Project control and planning
- Accounting
- Records management
- Other regional costs
- International Federation costs
- Transportation pre-Games
- Youth program
- Education program
- Mascot program
- Merchandise support
- Closing event previous Games
- Festivals and culture

# Appendix B — Detail by budget line item

## 1.1. Introduction

This section contains all line items in the budget and provides details on the procedures performed and assumptions evaluated.

## 1.2. Review of budget and assumptions

### Overall Budget

KPMG performed the following steps to test the reasonableness and completeness of the budget

- Verified the formulas and mathematical accuracy of the budget by comparing the roll-up of budget line items to the summary.
- Developed a spreadsheet comprising budget categories regularly used in major international multi-sport games. Cross referenced those budget categories to the proposed budget.
- Obtained clarification from LA24 of where such costs might have been included in the budget to determine completeness.

## 1.3. Procedures by budget line item

### Revenue

#### 1. IOC contribution

#	Element	Procedures	Remarks
1.1	IOC contribution	— Verified the HCC and payment schedule provided by IOC to determine revenue from IOC Contribution.	<p><b>LA24 assumptions and benchmarks</b></p> <ul style="list-style-type: none"> <li>— IOC contribution is determined by the IOC.</li> <li>— LA24 does not face currency conversion issues faced by other host cities as the IOC uses USD.</li> <li>— Includes OCOG’s share of broadcast revenue.</li> <li>— LA24 has followed the IOC direction on how to account for revenue based on <i>2024 Candidate Cities Budget Information (Annex 2)</i>.</li> <li>— Payment schedule is outlined in e-mail correspondence from the IOC to LA24, dated May 20, 2016.</li> </ul>

## 2. TOP program

#	Element	Procedures	Remarks
2.1	TOP program	<ul style="list-style-type: none"> <li>— Verified the HCC and payment schedule provided by IOC to determine revenue for TOP Program.</li> </ul>	<p><b>LA24 assumptions and benchmarks</b></p> <ul style="list-style-type: none"> <li>— Revenue from TOP Program is determined by the IOC.</li> <li>— Stable revenue but there is a possibility that the number may increase as IOC negotiates new TOP sponsorship deals.</li> <li>— LA24 does not face currency conversion issues faced by other host cities as the IOC uses USD.</li> <li>— LA24 has followed the IOC direction on how to account for revenue based on <i>2024 Candidate Cities Budget Information</i>.</li> <li>— Payment schedule is outlined in e-mail correspondence from the IOC to LA24, dated May 20, 2016.</li> </ul>

### 3. IOC contribution

#	Element	Procedures	Remarks
3.1	Domestic sponsorship	<ul style="list-style-type: none"> <li>— Evaluated the assumptions used to determine that sponsorship revenue is reasonable.</li> <li>— Evaluated and compared the three-tiered model to determine realization and appropriateness of sponsorship revenue.</li> </ul>	<p><b>LA24 assumptions and benchmarks</b></p> <ul style="list-style-type: none"> <li>— Revenue estimated based on sponsorship revenues for London 2012, Rio 2016 and Tokyo 2020 (to date).</li> <li>— Budget numbers were tested against estimates determined using a top down and category based approach.</li> <li>— USOC guidance used to create sponsorship matrix of potential categories and US market maps.</li> <li>— JMPA between LA24 and the USOC has been signed that sets out specific royalty arrangements from OCOG to USOC on revenue categories.</li> </ul> <p><b>LA24 approach</b></p> <ul style="list-style-type: none"> <li>— A tiered approach was used to determine domestic sponsorship revenue.</li> <li>— A bottom-up approach by tier was first created using data from London 2012.</li> <li>— Next, a bottom-up approach by category (i.e. industry type such as telecommunications, airlines, banking) was created for the US market and estimating growth in sport sponsorship as an industry.</li> <li>— Finally a top-down approach using London 2012 was estimated.</li> <li>— All three models were compared and LA24 chose the most conservative of the three approaches to include in the budget.</li> </ul>

#	Element	Procedures	Remarks
3.2	Sponsor activation	<ul style="list-style-type: none"> <li>— Evaluated the assumptions used to determine that revenue from sponsor activation is reasonable.</li> <li>— Evaluated the model used to determine realization and appropriateness of sponsor activation revenue.</li> </ul>	<p><b>LA24 assumptions and benchmarks</b></p> <ul style="list-style-type: none"> <li>— Revenue estimated based on figures available for London 2012 and Rio 2016.</li> <li>— Input from USOC on possibilities was considered.</li> <li>— Modeled the Torch Run as a product that could be sub-branded similar to Rio 2016 to determine revenue.</li> </ul> <p><b>LA24 approach</b></p> <ul style="list-style-type: none"> <li>— Revenue determined based on two different models – bottom-up and USOC estimate.</li> <li>— LA24 chose a hybrid approach between the two approaches using 50% of the London 2012 and augmenting it with revenue provided by USOC guidance using a Los Angeles specific lens.</li> </ul>

#### 4. Ticket sales

#	Element	Procedures	Remarks
4.1	Ticket sales	<ul style="list-style-type: none"> <li>— Validated the assumptions used to determine gross seating capacity, seat kills and accredited seats to confirm net capacity calculation is appropriate.</li> <li>— Verified the appropriateness of events by venue for sporting events.</li> <li>— Verified the calculation of seating by tier and venue type (permanent and temporary) for sporting events.</li> <li>— Reviewed supporting evidence to determine the reasonableness of ticketing prices for venue and event type.</li> <li>— Established reasonableness of ticketing revenues for sporting event.</li> <li>— Conducted additional analysis to determine ticket sales revenue utilizing a conservative approach.</li> </ul>	<p><b>LA24 assumptions and benchmarks</b></p> <ul style="list-style-type: none"> <li>— Historical ticket prices from London 2012 used as a basis.</li> <li>— Economic factors such as the strong sports market of LA and premium for select sports used in calculating ticket pricing.</li> <li>— 6-tier seating model used for ticket pricing.</li> </ul> <p><b>LA24 approach</b></p> <ul style="list-style-type: none"> <li>— Calculate net capacity by sporting type and venue (gross capacity less seat kills and accredited seats).</li> <li>— Ascertain total sessions for each sporting event, by venue.</li> <li>— Determine ticket pricing for each sporting event and session.</li> <li>— Apply a sell-rate of 97% across all sports and all events.</li> <li>— Calculate total ticketing revenue as a factor of net capacity and ticket pricing.</li> </ul>
4.2	Other ticketing revenue (test events)	<ul style="list-style-type: none"> <li>— Gained an understanding of how other ticketing revenue was determined.</li> <li>— Evaluated other ticketing revenue against benchmark to assess reasonableness.</li> </ul>	<p><b>LA24 assumptions and benchmarks</b></p> <ul style="list-style-type: none"> <li>— Conservative approach used in selecting sports (Aquatics, Athletics, Water Polo and Gymnastics) for ticketing revenue from Olympic Trials/Test Events.</li> <li>— Ticket pricing calculated as a factor of ticket sales revenue.</li> <li>— Hospitality rights calculated using historical available data.</li> </ul>

## 5. Licensing and merchandising

#	Element	Procedures	Remarks
5.1	Licensing and merchandising	<ul style="list-style-type: none"> <li>— Assessed the assumptions and benchmarks used in the calculation of revenue from merchandising.</li> <li>— Evaluated the basis used to calculate online sales versus in-store sales and determine reasonableness.</li> </ul>	<p><b>LA24 assumptions and benchmarks</b></p> <ul style="list-style-type: none"> <li>— Revenue estimated based on figures available for London 2012.</li> <li>— Consideration given to e-commerce growth both globally and in the US since London 2012.</li> <li>— Increased margin considered for online sales (wholesale and retail mark-up).</li> <li>— Market size comparisons were performed, both United States to United Kingdom and Los Angeles to London.</li> <li>— Licensing and merchandising market growth was taken from a well-known study.</li> </ul> <p><b>LA24 approach</b></p> <ul style="list-style-type: none"> <li>— Adjust licensing and merchandising revenue for London 2012 to account for foreign exchange and inflation.</li> <li>— Revenue from royalty calculated based on net sales.</li> </ul>
5.2	Stamps (philately) and coins	<ul style="list-style-type: none"> <li>— Assessed the assumptions and benchmarks used in the calculation of revenue from stamps and coins.</li> </ul>	<p><b>LA24 assumptions and benchmarks</b></p> <ul style="list-style-type: none"> <li>— Revenue estimated based on historical Games and adjusted for expected revenue based off interviews with US agencies, e.g. Mint, US Postal Service.</li> </ul>

## 6. Lotteries and other revenue

#	Element	Procedures	Remarks
6.1	Food and beverage commission	— Assessed the assumptions and benchmarks used in the calculation of revenue from food and beverage commission.	<p><b>LA24 assumptions and benchmarks</b></p> <ul style="list-style-type: none"> <li>— Estimates based on projections of ticket sales revenue.</li> <li>— Benchmarks tested against the average food and beverage spend at last four Super Bowls.</li> <li>— Estimate is conservative and includes room for additional revenue as the model does not factor sales to accredited seats or people in sports park live sites.</li> <li>— Factors per capita sales based on London 2012 adjusted prices and tested against industry benchmarks.</li> </ul>
6.2	Donations	— Assessed the assumptions and benchmarks used in the calculation of revenue from donations.	<p><b>LA24 assumptions and benchmarks</b></p> <ul style="list-style-type: none"> <li>— Estimates based on identification of potential donors such as prominent public figures within the City and private sponsors of LA24.</li> <li>— Consideration given to offering naming rights on Olympic and Paralympic venues if donor is not a commercial entity.</li> </ul>
6.3	Government contribution and grants	— Assessed the assumptions and benchmarks used in the calculation of revenue from government contributions and grants.	<p><b>LA24 assumptions and benchmarks</b></p> <ul style="list-style-type: none"> <li>— Veteran Affairs has historically provided funding during Games-years for the Paralympics and, based on this precedent, LA24 has assumed funds in 2024. This is further supported given the recent partnership between the VA and USOC for Paralympians.</li> <li>— Further funding expected from grant programs such as the Wounded Warriors Project, VA Adaptive Sports Grants, and others.</li> </ul>

#	Element	Procedures	Remarks
6.4	Lotteries	<ul style="list-style-type: none"> <li>Assessed the assumptions and benchmarks used in the calculation of revenue from lotteries.</li> </ul>	<p><b>LA24 assumptions and benchmarks</b></p> <ul style="list-style-type: none"> <li>Estimates based on historical Games data.</li> <li>Utilized a royalty-based approach for licensing rights to a lottery, not revenue from the lottery itself.</li> </ul>

# Expenditures

## 1. Venue infrastructure

#	Element	Procedures	Remarks
1.1	Unit cost development basis	<ul style="list-style-type: none"> <li>— Understood the benchmark selection process, types of projects used as benchmarks for unit costs, and sources of other benchmarks provided by suppliers.</li> <li>— Reviewed adjustments for the local market, venue specific considerations, material specifications and rental periods.</li> <li>— Understood the "sense-checking" process and information used for top-down analysis.</li> <li>— Conducted a detailed review of a sample of unit cost benchmarks and the application of LA24's methodology was undertaken to determine the consistency in application and the reasonableness of costs used.</li> </ul>	<p><b>LA24 assumptions and benchmarks</b></p> <ul style="list-style-type: none"> <li>— Unit costs were obtained from local and international suppliers and Los Angeles and US benchmarks from AECOM's internal sources and AECOM-owned companies - Hunt Construction and Tishman Construction. Most of the benchmark project estimates were at concept design level similar to that of the current budget.</li> <li>— Total costs from venues such as London 2012 and Rio 2016 were used as a reference to sense-check overall costs for venues that are comparable in nature. Where differences exist (e.g. in excavation or plant and equipment) LA24 confirmed that this has been factored into the comparison and documented.</li> </ul> <p><b>LA24 approach</b></p> <ul style="list-style-type: none"> <li>— LA24 has met with local and international suppliers to understand, for this type of event, what range unit costs would likely fall in, what factors might contribute to higher costs/premiums, whether the capacity, capability and willingness exists in the market.</li> <li>— Confirmation was provided by LA24 that the unit costs are fully burdened and include the contractor's overhead and profit.</li> <li>— Unit cost benchmarks were adjusted to reflect the Los Angeles market. Factors considered include labor costs, productivity, typical contractors' overhead and profits.</li> </ul>

#	Element	Procedures	Remarks
1.2	Current design level/ estimated quantities	<ul style="list-style-type: none"> <li>— Gained an understanding of current level of design.</li> <li>— Understood basis for quantities and reviewed schedule of accommodation of sample of venues.</li> <li>— Understood level of design typical of this stage in the bid process based on prior Games bid processes.</li> </ul>	<p><b>LA24 approach</b></p> <ul style="list-style-type: none"> <li>— The current design level is based on block diagrams informed by schedule of accommodations which is relatively advanced for this stage in the process. Schematic designs are yet to be completed.</li> <li>— LA24 indicated that additional studies have been completed for specific, more complex elements or portions of scope.</li> </ul>
1.3	Venue-specific costing	<ul style="list-style-type: none"> <li>— Conducted analysis of venue-specific factors included in a sample of venues.</li> <li>— Conducted detailed review of the cost estimation methodology.</li> </ul>	<p><b>LA24 approach</b></p> <ul style="list-style-type: none"> <li>— Each venue’s cost has been estimated on an individual, stand-alone basis. Opportunities to take advantage of shared resources or economies of scale have not yet been factored in. It was confirmed that this will be looked at in more detail in future.</li> </ul>

#	Element	Procedures	Remarks
1.4	Services and utilities	<ul style="list-style-type: none"> <li>— Gained an understanding of the drivers of services and utilities cost allowances.</li> <li>— Understood how costs for services and utilities have been included in cost estimates and assessed for completeness.</li> <li>— Gained an understanding allowances included for resiliency planning and testing.</li> <li>— Assessed approach to identifying and managing service and utility risks.</li> <li>— Assessed consultation approach with key utility and services providers.</li> </ul>	<p><b>LA24 assumptions and benchmarks</b></p> <ul style="list-style-type: none"> <li>— Forecast power requirements are based on London Kwh for comparable venues.</li> </ul> <p><b>LA24 approach</b></p> <ul style="list-style-type: none"> <li>— A benchmark allowance for "Utilities - Resiliency Planning and Testing" based on London 2012 Games allowance. This is for utilities consumption planning, testing and readiness.</li> <li>— Provisions for temporary power generation are included but no provision for reinforcement/ additions to existing utility connections as it is viewed that current connections are sufficient as Southern California Edison (SCE), Los Angeles Department of Water and Power (LADWP) and other utility providers have reviewed the venue strategies to date. Firm written guarantees have been given for the availability of sufficient capacity for the Games and regular requirements so current residents are not impacted.</li> </ul>
1.5	Labor union considerations	<ul style="list-style-type: none"> <li>— Gained an understanding of labor union factors considered by LA24 and how this is captured in VUAs.</li> </ul>	<p><b>LA24 approach</b></p> <ul style="list-style-type: none"> <li>— No formal agreements or MOU's have been developed with union organizations as LA24 is unable to do so at this stage. However, formal agreements have been developed with venues that utilize union labor (e.g. convention center has provided a list of preferred suppliers).</li> <li>— LA24 is aware of that labor union factors exist and may present risks particularly in city-specific venues.</li> <li>— It was confirmed by LA24 that unit costs are adjusted for local market factors including labor costs.</li> </ul>

#	Element	Procedures	Remarks
1.6	Approach to interface risks	<ul style="list-style-type: none"> <li>— Reviewed approach to managing interfaces with various stakeholders, partners and organizations.</li> <li>— Verified that spaces for items such as broadcasting has been factored into estimates.</li> <li>— Verified that Sports Federation requirements has been consulted and design requirements are well-understood.</li> <li>— Reviewed example of a VUA.</li> </ul>	<p><b>LA24 approach</b></p> <ul style="list-style-type: none"> <li>— Stakeholder engagement has taken place with stakeholders and partners.</li> <li>— LA24 has met a number of times with the International Sport Federations to ensure design elements are integrated appropriately.</li> <li>— LA24 advised that the competitive nature of the market means stadiums are currently competitively bidding for events and have well-developed technology. The quality of broadcasting in current facilities is high however there is heightened broadcasting requirements for the Games. LA24 advised these requirements have been closely considered and incorporated into designs, costs and scheduling.</li> </ul>

#	Element	Procedures	Remarks
1.7	Unit cost benchmarking	<ul style="list-style-type: none"> <li>— Conducted a detailed review of a sample of unit cost benchmarks and the application of LA24's methodology in order to determine the consistency in application and the reasonableness of costs used.</li> <li>— Determined the top cost categories contributing to overall venue infrastructure.</li> <li>— Selected major unit costs in these categories from venues within the sample of twelve and compared with market benchmarks where possible.</li> </ul>	<p><b>LA24 assumptions and benchmarks</b></p> <ul style="list-style-type: none"> <li>— LA24 indicated that unit costs were obtained from local and international suppliers and Los Angeles and US benchmarks from AECOM's internal sources and AECOM-owned companies - Hunt Construction and Tishman Construction. Most of the benchmark project estimates were at concept design level similar to that of the current budget.</li> <li>— LA24 has met with local and international suppliers to understand, for this type of event, what range unit costs would likely fall in, what factors might contribute to higher costs/premiums, whether the capacity, capability and willingness will exist in the market.</li> <li>— Unit cost benchmarks were adjusted to reflect the Los Angeles market. Factors considered include labor costs, productivity, typical contractors' overhead and profits.</li> <li>— Costing of temporary structures required for overlay works (such as tenting) were benchmarked to rates provided directly by suppliers. Where relevant the benchmarks were separated into installation/removal and weekly rental components. By doing this LA24 has endeavored to capture key cost drivers such as overlay timeframe, tent size and ground condition.</li> </ul>

#	Element	Procedures	Remarks
1.8	Market conditions	<ul style="list-style-type: none"> <li>— Gained an understanding of LA24's views of market risk and the basis of its assumptions.</li> <li>— Gained understanding of how market risk is factored in previous Games and sporting events.</li> <li>— Considered the depth and nature of Los Angeles market.</li> </ul>	<p><b>LA24 approach</b></p> <ul style="list-style-type: none"> <li>— LA24 indicated that it has considered the scale of the supply chain and in its view the LA and US markets are relatively large compared with those of other Games such as London and Rio.</li> <li>— This has been informed by discussions with local and international suppliers where the estimated requirements for each venue has been provided and suppliers consulted are able to plan years ahead of the Games.</li> </ul>
1.9	Professional fees and other soft costs	<ul style="list-style-type: none"> <li>— Validated allowances for professional fees and other on-costs.</li> <li>— Reviewed factors captured in on-costs as part of estimate.</li> <li>— Verified that on-cost allowances have been applied correctly and consistently within sample.</li> </ul>	<p><b>LA24 assumptions and benchmarks</b></p> <ul style="list-style-type: none"> <li>— LA24 has based its on-costs and allowances on a variety of projects selected based on type, level of design and other factors. It is understood that these allowances are generally within range of industry benchmarks.</li> </ul> <p><b>LA24 approach</b></p> <ul style="list-style-type: none"> <li>— A uniform fee of 12% of construction costs is applied across all venues for professional fees. LA24 indicated that it includes 7% for Design fees, 1.5% for Project management, 1% for Cost management, 1.5% for Specialty consultants and 1% for Permitting and surveys.</li> <li>— Additional on-cost allowances are included for sales tax, general requirements, CM Staff, GC's, Insurances, builders risk and construction management fee.</li> </ul>

#	Element	Procedures	Remarks
1.10	Schedule	<ul style="list-style-type: none"> <li>— Requested and reviewed program-level schedule for venue infrastructure works.</li> <li>— Confirmed approach to setting schedules.</li> <li>— Confirmed how developed VUAs are as these currently form the basis for much of the schedule.</li> <li>— Confirmed contingency included for schedules to account for rework and complications.</li> </ul>	<p><b>LA24 approach</b></p> <ul style="list-style-type: none"> <li>— VUAs have been developed and negotiated with key partners to ensure the site is available for development.</li> <li>— Included in the VUAs are both “exclusive use periods” (where the OCOG will have sole use of the venue) and “non-exclusive use periods” (where the OCOG will work with the partner to use site for multiple purposes ahead of the Games). Where possible, works will be undertaken during the “non-exclusive use period” to relieve pressure on the overall schedule.</li> </ul>
1.11	Design contingency	<ul style="list-style-type: none"> <li>— Conducted a detailed review of unit cost build up for sample of venues and cost items.</li> <li>— Understood how unit costs have been sourced from the market and how these have been adjusted.</li> <li>— Confirmed level of design contingency included in estimates.</li> <li>— Reviewed approach to setting design contingency into unit costs and factors considered.</li> </ul>	<p><b>LA24 assumptions and benchmarks</b></p> <ul style="list-style-type: none"> <li>— The estimate includes a design contingency which is embedded in the quantities and unit costs and is not presented on an individual line item basis. It is understood through discussions that design contingency is approximately 7-12%.</li> </ul> <p><b>LA24 approach</b></p> <ul style="list-style-type: none"> <li>— Design contingency provision is venue-specific, and may be lower for venues for which the design is anticipated to be less complicated than others, or for venues for which the design has been more advanced at the time when the cost estimate was completed.</li> <li>— It is understood that when allocating design contingency, consideration has been given to the factors listed below: <ul style="list-style-type: none"> <li>— Existing venue conditions</li> <li>— Complexity</li> <li>— Level of design</li> <li>— Whether works are temporary or permanent</li> <li>— Material specifications and level of finishes</li> </ul> </li> </ul>

#	Element	Procedures	Remarks
1.12	Construction contingency	<ul style="list-style-type: none"> <li>— Reviewed construction contingency at an overall venue infrastructure cost level.</li> <li>— Reviewed construction contingency on a venue-by-venue basis for a sample of venues representing approximately 70% of venue infrastructure costs.</li> <li>— Reviewed factors considered when allocating construction contingency to venues.</li> <li>— Understood what range of construction contingency would be considered reasonable based on prior Games experience, other infrastructure projects and international recommended practice.</li> <li>— Considered the type of works (predominantly temporary in nature) and the LA24's detailed understanding of existing venues.</li> </ul>	<p><b>LA24 assumptions and benchmarks</b></p> <ul style="list-style-type: none"> <li>— A construction contingency is included in the cost estimate, as a separate below-the-line item. It is expressed as a percentage of total venue development costs. Total construction contingency is approximately 9% of construction costs.</li> <li>— The construction contingency is venue-specific: the provision for venues that present more significant construction risk or with more capital works tend to be higher than for venues where only overlay work is expected.</li> </ul> <p><b>LA24 approach</b></p> <ul style="list-style-type: none"> <li>— A venue by venue risk review has been conducted by LA24 to inform the allowances for contingency. Factors driving contingency levels for each venue include existing venue conditions, complexity, level of design, whether works are temporary or permanent, local contracting approaches to risk management and procurement model.</li> <li>— LA24 has discussed contingency preferences with suppliers, partners and venue owners and have factored responses into their contingency allowance. LA24 has also used a wide range of sports project benchmarks in LA and the US to sense-check contingency levels given the current level of design.</li> </ul>

#	Element	Procedures	Remarks
1.13	Owners costs and management reserve	<ul style="list-style-type: none"> <li>— Confirmed that separate management reserve excluded.</li> <li>— Gained understanding of the basis for the assumption and that the risk was considered.</li> <li>— Explored approach taken in other Games estimates.</li> </ul>	<p><b>LA24 approach</b></p> <ul style="list-style-type: none"> <li>— LA24 indicated that it views the risk of owner-directed change orders to be low as this will partly be managed through negotiations of VUAs and close collaboration with stakeholders including International Sports Federations, Olympic Broadcasting Services (OBS), partners and others.</li> </ul>
1.14	Operational areas	<ul style="list-style-type: none"> <li>— Developed a sample list of operational areas required to be factored into estimates.</li> <li>— Confirmed that this list included in estimates.</li> <li>— Reviewed operational areas included in sample of venues.</li> </ul>	<p><b>LA24 approach</b></p> <ul style="list-style-type: none"> <li>— LA24 confirmed that operational areas are included in the Schedule of Accommodation (SOA) for each venue. Where area in the existing venue SOA is insufficient to cover all requirements, a temporary build has been factored in to ensure the required space is included.</li> <li>— LA24 confirmed that the typical SOA build-up covers over 300 different operational elements.</li> </ul>
1.15	Additional approach items	<ul style="list-style-type: none"> <li>— Understood assumption of delivery model driving cost estimate and how is factored into the budget in areas such as on-costs and contingency.</li> </ul>	<p><b>LA24 approach</b></p> <ul style="list-style-type: none"> <li>— As is expected at this stage, no final decision has been made on the delivery model, although the cost estimates are based on a construction management (CM) at risk model.</li> </ul>

## 2. Sport, games services and operations

#	Element	Procedures	Remarks
2.1	Accommodations	<ul style="list-style-type: none"> <li>— Verified that games operations expenses do not exclude any major expense category.</li> <li>— Verified that assumptions used in estimating costs are appropriate.</li> <li>— Reviewed supporting documentation and verified cost model to determine accommodation costs have been appropriately calculated.</li> </ul>	<p><b>LA24 assumptions and benchmarks</b></p> <ul style="list-style-type: none"> <li>— Estimates based on figures available for London 2012 and adjusted for foreign exchange, inflation and Los Angeles market rates.</li> <li>— Cost estimates were reviewed by Subject Matter Experts that worked on London 2012.</li> <li>— Client group populations estimated from IOC Technical Manuals and adjusted based on Rio 2016 numbers and the LA24 workforce model.</li> <li>— Room nights based on length of the Games.</li> <li>— Room rates were determined based on July and August 2015 STR Global Average Room Rate for LA, and adjusted for inflation.</li> <li>— LA24 is currently signing agreements with each property that commits to rooms at a formula for the hotel rate. Formula matches previous Games.</li> </ul> <p><b>LA24 approach</b></p> <ul style="list-style-type: none"> <li>— Created a model that looked at mix of accommodation level required (e.g. star rating), requirements of regional athletes, plus actual athlete numbers from Rio 2016.</li> <li>— Utilized a conservative approach for determining Technical Official accommodation by calculating rooms based on single instead of double occupancy.</li> </ul>

#	Element	Procedures	Remarks
2.2	Food and beverage	<ul style="list-style-type: none"> <li>— Verified that assumptions used in estimating costs are appropriate.</li> <li>— Reviewed supporting documentation and verified cost model to determine food and beverage costs have been appropriately calculated.</li> </ul>	<p><b>LA24 assumptions and benchmarks</b></p> <ul style="list-style-type: none"> <li>— Estimates based on figures available for London 2012 and Rio 2016, and adjusted for foreign exchange, inflation, and Los Angeles market rates.</li> <li>— Client group numbers based on HCC, workforce modeling, and London 2012 and Rio 2016 numbers.</li> <li>— Model assumes the use of a master caterer.</li> <li>— Model uses UCLA's highest price for summer meal as the baseline and includes a premium for athletes.</li> <li>— UCLA meal costs adjusted for Games requirements and tiered for workforce versus athlete meals.</li> <li>— VUA with UCLA does not lock OCOG into a max number of meals and is based on usage to control costs.</li> </ul> <p><b>LA24 approach</b></p> <ul style="list-style-type: none"> <li>— Food cost calculated on the basis of number of meals for workforce.</li> <li>— Total headcount is determined for every competition day rather than peak headcount for competition plus other days (e.g. training, fit out).</li> </ul>

#	Element	Procedures	Remarks
2.3	Medical and anti-doping	<ul style="list-style-type: none"> <li>— Verified that assumptions used in estimating costs are appropriate.</li> <li>— Reviewed supporting documentation and verified cost model to determine medical and anti-doping costs have been appropriately calculated.</li> </ul>	<p><b>LA24 assumptions and benchmarks</b></p> <ul style="list-style-type: none"> <li>— Estimates based on figures available for London 2012 and 2015 European Games.</li> <li>— Considers the use of UCLA's lab and partnership with a medical services provider.</li> </ul> <p><b>LA24 approach</b></p> <ul style="list-style-type: none"> <li>— Costs calculated on the basis of highest price test for anti-doping and testing of 60% of all athletes, which is higher than previous Games, including Rio 2016.</li> <li>— Includes cost for upgrading lab to manage additional volume.</li> </ul>
2.4	Logistics	<ul style="list-style-type: none"> <li>— Verified that assumptions used in estimating costs are appropriate.</li> <li>— Reviewed supporting documentation and verified cost model to determine logistics costs have been appropriately calculated.</li> </ul>	<p><b>LA24 assumptions and benchmarks</b></p> <ul style="list-style-type: none"> <li>— Includes cost of furniture, fixtures &amp; equipment and moving costs.</li> <li>— Estimates for labor cost based on figures available for London 2012 and adjusted for foreign exchange, inflation, and Los Angeles market rates.</li> <li>— Model assumes an outsourced model.</li> <li>— Warehouse square footage per month based on Los Angeles market (CBRE - LA Report) and adjusted comparison of London 2012.</li> <li>— LA24 researched existing availability in LA within 10 to 15 miles.</li> </ul> <p><b>LA24 approach</b></p> <ul style="list-style-type: none"> <li>— Costs were calculated by modeling small, medium and large venues.</li> </ul>

#	Element	Procedures	Remarks
2.5	Security	<ul style="list-style-type: none"> <li>— Verified that assumptions used in estimating costs are appropriate.</li> </ul>	<p><b>LA24 assumptions and benchmarks</b></p> <ul style="list-style-type: none"> <li>— Security and safety-related costs as required by the OCOG have been distributed in relevant functions, such as temporary infrastructure, event services, transportation, municipal services.</li> <li>— Includes OCOG related costs around asset protection, access control and infrastructure related to securing the perimeter and screening such as fencing, power, cabling and cabins.</li> <li>— LA24 received confirmation of Games as a NSSE in LA2024 Guarantee 2.32, April 2, 2016.</li> </ul>
2.6	Sport	<ul style="list-style-type: none"> <li>— Verified that assumptions used in estimating costs are appropriate.</li> <li>— Reviewed supporting documentation and verified cost model to determine sport costs have been appropriately calculated.</li> </ul>	<p><b>LA24 assumptions and benchmarks</b></p> <ul style="list-style-type: none"> <li>— Includes athlete support grants, technical officials and sports equipment.</li> <li>— Estimates based on London 2012 and adjusted for foreign exchange, inflation, and Los Angeles market rates.</li> <li>— Plan includes assumption that training facilities will be available at UCLA or in competition venues for exclusive use during the period before competition.</li> </ul> <p><b>LA24 approach</b></p> <ul style="list-style-type: none"> <li>— Costs for sport competition modeled using a bottom-up approach based on IOC technical manuals and market research.</li> </ul>

#	Element	Procedures	Remarks
2.7	Transport	<ul style="list-style-type: none"> <li>— Verified that assumptions used in estimating costs are appropriate.</li> <li>— Obtained supporting documentation to determine transport costs have been appropriately calculated.</li> </ul>	<p><b>LA24 assumptions and benchmarks</b></p> <ul style="list-style-type: none"> <li>— Estimates based on figures available for London 2012 and Rio 2016 and market prices based on past events in LA such as the 2015 Special Olympic World Games.</li> <li>— Based on numbers quoted in LA Department of Transportation (LADOT) contracts for mega-events.</li> <li>— Includes OCOG responsibilities for client group transportation plus allowances for greater transportation operations, e.g. Olympic Route Network (ORN) and Traffic Demand Management (TDM).</li> <li>— Costs include pre-Games and Games-time requirements.</li> <li>— Spectator transportation costs relies on national Borrow-a-Bus Program numbers from the Atlanta 1996 and Salt Lake City 2002.</li> <li>— Fuel cost is based number of trips for a bus (athletes, media, and spectators).</li> </ul>
2.8	Event services	<ul style="list-style-type: none"> <li>— Verified that assumptions used in estimating costs are appropriate.</li> <li>— Reviewed supporting documentation and verified cost model to determine event services costs have been appropriately calculated.</li> </ul>	<p><b>LA24 assumptions and benchmarks</b></p> <ul style="list-style-type: none"> <li>— Estimates for sessions based on London 2012 and Rio 2016, hourly rates for the Los Angeles market and estimated volunteer requirements.</li> <li>— Cost model considers venue size (small, medium and large), days of operations, and estimated number of sessions.</li> <li>— Uses a conservative approach of assuming four shifts per day instead of three to provide for some contingency.</li> </ul> <p><b>LA24 approach</b></p> <ul style="list-style-type: none"> <li>— Costs estimated using a detailed bottom-up approach model.</li> </ul>

#	Element	Procedures	Remarks
2.9	Venue operations management	<ul style="list-style-type: none"> <li>— Reviewed sample VUA.</li> </ul>	<p><b>LA24 approach</b></p> <ul style="list-style-type: none"> <li>— Includes venue compensation, facilities &amp; maintenance and utilities cost.</li> <li>— Binding VUAs have been signed with all venues except for locations to be finalized.</li> <li>— VUAs include venue compensation, facilities &amp; maintenance, utilities, and an assignment clause to the OCOG.</li> </ul>
2.10	Olympic and Paralympic village operations	<ul style="list-style-type: none"> <li>— Verified that assumptions used in estimating costs are appropriate.</li> <li>— Reviewed supporting documentation and verified cost model to determine operation costs have been appropriately calculated.</li> </ul>	<p><b>LA24 assumptions and benchmarks</b></p> <ul style="list-style-type: none"> <li>— Includes entertainment, housekeeping, laundry services, project costs and supplier fees.</li> <li>— LA24 has negotiated with UCLA to use their student accommodation for the Athletes' Village.</li> <li>— Accommodation requirements determined on the basis of IOC Technical Manual and London 2012.</li> <li>— Estimates have been adjusted for foreign exchange, inflation and best practices from other major events.</li> <li>— Concept assumes no changes to room configuration will be required to existing student accommodation set-up.</li> <li>— Benchmarks have been tested with Los Angeles market unit costs for specific equipment and fit out, number of staff required, hours, days, and typical hourly rate.</li> </ul> <p><b>LA24 approach</b></p> <ul style="list-style-type: none"> <li>— Costs estimated using a bottom-up model and includes local rates for wages, consumables, estimated laundry schedule, and project management.</li> </ul>

#	Element	Procedures	Remarks
2.11	Media village operations	<ul style="list-style-type: none"> <li>— Verified that assumptions used in estimating costs are appropriate.</li> </ul>	<p><b>LA24 assumptions and benchmarks</b></p> <ul style="list-style-type: none"> <li>— Model considers the use of USC for the Media Village and cost estimates for media room nights based on regular hotel rates.</li> </ul>
2.12	Test events	<ul style="list-style-type: none"> <li>— Verified that assumptions used in estimating costs are appropriate.</li> <li>— Reviewed supporting documentation and verified cost model to determine test event costs have been appropriately calculated.</li> </ul>	<p><b>LA24 assumptions and benchmarks</b></p> <ul style="list-style-type: none"> <li>— Estimates based on event schedule of Rio 2016, input from International Sport Federations, expectations from World Championships and level of competition for each test event.</li> </ul> <p><b>LA24 approach</b></p> <ul style="list-style-type: none"> <li>— Determine a venue-by-venue estimate, and select the most conservative number between options.</li> <li>— Estimate overlay costs at the higher of three key Games-time component costs or 10% of overall Games-time overlay.</li> <li>— Include additional costs for operations (i.e. event services) and for Paralympic Games.</li> </ul>
2.13	Cleaning and waste	<ul style="list-style-type: none"> <li>— Verified that assumptions used in estimating costs are appropriate.</li> <li>— Reviewed supporting documentation and verified cost model to determine cleaning and waste costs have been appropriately calculated.</li> </ul>	<p><b>LA24 assumptions and benchmarks</b></p> <ul style="list-style-type: none"> <li>— Estimates based on London 2012 and local LA stadium janitorial staffing and costs.</li> <li>— Conservative estimate used to determine number of days of service and applies a consistent level of cleaning per day regardless of competition schedule.</li> </ul> <p><b>LA24 approach</b></p> <ul style="list-style-type: none"> <li>— Costs calculated by modeling small, medium and large venue categories in the LA24 Venue Plan.</li> <li>— Considered the use of both in-source and outsource models and used the average of the two for the budget.</li> </ul>

### 3. Technology

#	Element	Procedures	Remarks
3.1	Technology	<ul style="list-style-type: none"> <li>— Verified that assumptions used in estimating costs are appropriate.</li> <li>— Verified the HCC and payment schedule provided by IOC to determine revenue for TOP Program.</li> <li>— Determined technology costs have been appropriately calculated as a factor of IOC and TOP Revenue contribution.</li> </ul>	<p><b>LA24 assumptions and benchmarks</b></p> <ul style="list-style-type: none"> <li>— 80% of Technology budget comes from IOC and TOP Contribution as determined by the IOC.</li> <li>— Non-sponsorship technology costs are based on London 2012 and local market research.</li> <li>— Includes hardware &amp; software costs, back of house systems, results scoring and timing, in-venue technology, telecommunications, voice and data.</li> <li>— IOC provided valuation numbers following a sponsor workshop conducted in July 2016.</li> </ul>

#### 4. People management

#	Element	Procedures	Remarks
4.1	Workforce model	<ul style="list-style-type: none"> <li>— Verified the reasonableness of tiers, number of employees, salary basis and assumptions used to determine paid staff costs.</li> <li>— Verified that paid staff costs do not exclude any category/group of staff.</li> </ul>	<p><b>LA24 assumptions and benchmarks</b></p> <ul style="list-style-type: none"> <li>— Estimates based on London 2012 headcount.</li> <li>— 4-tier workforce model - C-Suite Executives, Directors and VP, Managers, and Staff – used.</li> <li>— Salary benchmarks by function and level based on Robert Half annual salary guides.</li> <li>— London 2012 headcount adjusted to account for better forward planning (early hiring, avoidance of last minute-hiring).</li> <li>— Volunteer numbers estimates based on opinion provided by London 2012 experts.</li> </ul> <p><b>LA24 approach</b></p> <ul style="list-style-type: none"> <li>— Workforce cost calculated as a factor of number of employees by tier, category type within tier and salary cost by category type.</li> <li>— Model assumes operating at 51% of London 2012 cumulative person months.</li> </ul>
4.2	HR operations, accreditation, uniforms and paid staff costs	<ul style="list-style-type: none"> <li>— Verified that assumptions used in estimating costs are appropriate.</li> </ul>	<p><b>LA24 assumptions and benchmarks</b></p> <ul style="list-style-type: none"> <li>— Estimates based on London 2012 headcount and adjusted for 2024 based on opinion of experts.</li> <li>— Salary benchmarks by function and level based on Robert Half annual salary guides.</li> </ul>

## 5. Ceremonies and culture

#	Element	Procedures	Remarks
5.1	Opening and closing ceremonies	— Verified that assumptions used in estimating costs are appropriate.	<p><b>LA24 assumptions and benchmarks</b></p> <ul style="list-style-type: none"> <li>— Estimates based on London 2012 and Rio 2016.</li> <li>— London 2012 cost adjusted to exclude government grant received by London 2012.</li> <li>— Includes additional dollars to cover other ceremonies programming such as Closing Ceremony portion of Tokyo 2020 and Opening Ceremony of the IOC Session.</li> <li>— Conservative approach used as LA24 is managing to 50% higher than Rio 2016 but significantly lower than London 2012 budget because of removal of UK government grant.</li> </ul>
5.2	Torch relay, culture & education and other ceremonies and culture expense	— Verified that assumptions used in estimating costs are appropriate.	<p><b>LA24 assumptions and benchmarks</b></p> <ul style="list-style-type: none"> <li>— Estimates based on London 2012.</li> </ul>

## 6. Communications, marketing and look

#	Element	Procedures	Remarks
6.1	Communications, community relations & public relations	— Verified that assumptions used in estimating costs are appropriate.	<p><b>LA24 assumptions and benchmarks</b></p> <ul style="list-style-type: none"> <li>— Estimates based on London 2012 and adjusted for Los Angeles market.</li> <li>— Assumes higher online content than previous Games.</li> <li>— Includes website, social media, public relations, press operations, publications, community, and government relations.</li> <li>— Cost estimates were reviewed by subject matter experts that worked on London 2012.</li> </ul>

#	Element	Procedures	Remarks
6.2	Look of Games	— Verified that assumptions used in estimating costs are appropriate.	<p><b>LA24 assumptions and benchmarks</b></p> <ul style="list-style-type: none"> <li>— Estimates based on London 2012 and adjusted for Los Angeles market.</li> <li>— Includes allowance for City look, venue look and way finding.</li> <li>— Model uses the concept of sports parks to reduce complexity and to benefit from synergies.</li> </ul> <p><b>LA24 approach</b></p> <ul style="list-style-type: none"> <li>— 25% discount applied to London 2012 costs based on use of existing venues.</li> </ul>
6.3	Marketing and commercial program	— Verified that assumptions used in estimating costs are appropriate.	<p><b>LA24 assumptions and benchmarks</b></p> <ul style="list-style-type: none"> <li>— Estimates based on London 2012 and adjusted for Los Angeles market.</li> <li>— Includes marketing campaigns, ticket delivery, hospitality programs and brand management.</li> </ul>

## 7. Corporate administration and legacy (including insurance)

#	Element	Procedures	Remarks
7.1	Administration and governance (including insurance)	— Verified that assumptions used in estimating costs are appropriate.	<p><b>LA24 assumptions and benchmarks</b></p> <ul style="list-style-type: none"> <li>— Estimates based on London 2012 and adjusted for Los Angeles market factors such as rent and fit out costs.</li> <li>— Insurance costs are developed by subject matter experts.</li> </ul> <p><b>LA24 approach</b></p> <ul style="list-style-type: none"> <li>— Rent costs estimated on the basis of workforce plan using local rent and utilities rates.</li> <li>— Insurance costs includes multiple categories of coverage based on opinion of local insurance experts.</li> </ul>

## 8. Other expenses

#	Element	Procedures	Remarks
8.1	Marketing rights and royalties	<ul style="list-style-type: none"> <li>— Verified that assumptions used in estimating costs are appropriate.</li> </ul>	<p><b>LA24 assumptions and benchmarks</b></p> <ul style="list-style-type: none"> <li>— Represents contractual obligations to IOC and International Paralympic Committee (IPC) as stated in the HCC.</li> <li>— Also represents contractual agreements to USOC noted in JMPA.</li> <li>— Calculation is based as a percentage of revenue from ticketing, domestic sponsorship, licensing &amp; merchandising.</li> </ul>
8.2	Athlete and innovation	<ul style="list-style-type: none"> <li>— Verified that assumptions used in estimating costs are appropriate.</li> </ul>	<p><b>LA24 assumptions and benchmarks</b></p> <ul style="list-style-type: none"> <li>— Includes amount for research and development.</li> <li>— Includes additional budget to allow for innovation and enhancements to athlete experience.</li> </ul>

## 9. Municipal services

#	Element	Procedures	Remarks
9.1	Enhanced event services	<ul style="list-style-type: none"> <li>— Verified that assumptions used in estimating costs are appropriate.</li> <li>— Determined a list of services and expenditures that are part of hosting Games and compared to budget to determine expenses gaps.</li> <li>— Obtained clarification for the excluded expenses to determine that municipal services costs in the budget are appropriate.</li> </ul>	<p><b>LA24 assumptions and benchmarks</b></p> <ul style="list-style-type: none"> <li>— Benchmarks based on public data in LA City contracts with major events.</li> <li>— Enhanced Departmental Services based on actual mega-events held in the area including current agreement with the City and the Los Angeles Rams, 1984 Los Angeles Games and the 2015 Special Olympic World Games.</li> </ul>

#	Element	Procedures	Remarks
9.2	Road closure/street services	<ul style="list-style-type: none"> <li>— Verified that assumptions used in estimating costs are appropriate.</li> <li>— Determined a list of services and expenditures that are part of hosting Games and compared to budget to determine expenses gaps.</li> <li>— Obtained clarification for the excluded expenses to determine that municipal services costs in the budget are appropriate.</li> </ul>	<p><b>LA24 assumptions and benchmarks</b></p> <ul style="list-style-type: none"> <li>— Includes costs associated with setting up and making field of play modification for road events, ensuring the safety of spectators, and providing services at road events.</li> <li>— Road events (e.g. cycling, marathon, triathlon) benchmarks based on London 2012 and 2015 Special Olympic World Games.</li> </ul>
9.3	Enhanced departmental services	<ul style="list-style-type: none"> <li>— Verified that assumptions used in estimating costs are appropriate.</li> <li>— Determined a list of services and expenditures that are part of hosting Games and compared to budget to determine expenses gaps.</li> <li>— Obtained clarification for the excluded expenses to determine that municipal services costs in the budget are appropriate.</li> </ul>	<p><b>LA24 assumptions and benchmarks</b></p> <ul style="list-style-type: none"> <li>— Benchmarks based on 2015 Special Olympic World Games adjusted for scope and time.</li> </ul> <p><b>LA24 approach</b></p> <ul style="list-style-type: none"> <li>— Budget calculated for a duration of: <ul style="list-style-type: none"> <li>— 6 years for cost associated with the coordination of general City services.</li> <li>— 50 days for City Information Technology services.</li> <li>— 50 days of City Emergency Management services.</li> </ul> </li> </ul>

#	Element	Procedures	Remarks
9.4	Enhanced sanitation and cleaning	<ul style="list-style-type: none"> <li>— Verified that assumptions used in estimating costs are appropriate.</li> <li>— Determined a list of services and expenditures that are part of hosting Games and compared to budget to determine expenses gaps.</li> <li>— Obtained clarification for the excluded expenses to determine that municipal services costs in the budget are appropriate.</li> </ul>	<p><b>LA24 assumptions and benchmarks</b></p> <ul style="list-style-type: none"> <li>— Includes additional cost of street cleaning and waste collection due to the presence of the Games.</li> <li>— Enhanced sanitation and cleaning benchmarks based on 1984 Los Angeles Games and 2015 Special Olympic World Games.</li> </ul> <p><b>LA24 approach</b></p> <ul style="list-style-type: none"> <li>— Enhanced Sanitation budget estimated by calculating cost per day by number of days and number of event venues and then scaled up to account for a larger number of athletes and spectators.</li> <li>— Enhanced Street Cleaning estimated by calculating number of road events by cost of street cleaning and scaled up to account for the Games.</li> </ul>

## 10. Contingency

#	Element	Procedures	Remarks
10.1	Contingency	<ul style="list-style-type: none"> <li>— Verified that assumptions used in estimating costs are appropriate.</li> <li>— Pressure tested assumptions used to calculate contingency to determine appropriateness.</li> </ul>	<p><b>LA24 assumptions and benchmarks</b></p> <ul style="list-style-type: none"> <li>— Conservative estimates in many functions means additional contingency may exist at budget line item level.</li> </ul> <p><b>LA24 approach</b></p> <ul style="list-style-type: none"> <li>— Centralized approach to presenting contingency.</li> <li>— Includes \$107 million for contingency on venue infrastructure costs. The remaining \$385 million represents contingency for the other budget categories.</li> <li>— For operations, contingency was estimated using a standard 10% rate.</li> </ul>

# Appendix C – Glossary

Term	Description
Atlanta 1996	Atlanta Committee for the 1996 Olympic Games
CAO	City Administrative Officer – City of Los Angeles
DHS	Department of Homeland Security
HCC	Host City Contract
IOC	International Olympic Committee
IPC	International Paralympic Committee
JMPA	Joint Marketing Program Agreement
LA24	Exploratory Committee to bring the 2024 Olympic and Paralympic Games to Los Angeles
LADOT	Los Angeles Department of Transportation
LAPD	Los Angeles Police Department
LOCOG	London Organizing Committee for the Olympic and Paralympic Games
London 2012	London Organizing Committee for the Olympic and Paralympic Games
NOC	National Olympic Committee
NSSE	National Special Security Event
OCOG	Organizing Committee for the Olympic and Paralympic Games
ORN	Olympic Route Network
Rio 2016	Organizing Committee for the Rio 2016 Olympic and Paralympic Games
TDM	Traffic Demand Management
TOK	Transfer of Knowledge
TOP	The Olympic Partner (TOP) Program
UCLA	University of California, Los Angeles
USC	University of Southern California
USSS	United States Secret Service
USOC	United States Olympic Committee

<b>Term</b>	<b>Description</b>
VA	US Department of Veterans Affairs
VANOC	Vancouver Organizing Committee for the 2010 Olympic and Paralympic Winter Games
Vancouver 2010	Vancouver Organizing Committee for the 2010 Olympic and Paralympic Winter Games
VIK	Value in Kind
VUA	Venue Use Agreement

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