

## **Memorandum**

**To:** Mr. Steve Hill, Chairman, Las Vegas Stadium Authority  
**From:** Jeremy Aguero, Applied Analysis  
**Date:** March 27, 2018  
**Subject:** Grand Canyon Development Partners Project Review, Summary Update  
**CC:** Mr. Lawrence Epstein, Vice Chairman; Mr. Ken Evans; Ms. Jan Jones Blackhurst; Mr. Tito Tiberti;  
Mr. Michael Newcomb; Mr. Dallas Haun; Mr. Bill Hornbuckle; Mr. Tommy White; Ms. Laura Fitzpatrick

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In November, the Stadium Authority (“Authority”) engaged Grand Canyon Development Partners (“Grand Canyon”) for the purposes of reviewing the design, fit and finish of the Las Vegas Stadium Project and assessing whether it is consistent with first-class, premier NFL facility standard required by Senate Bill 1 of the 30<sup>th</sup> Special Session of the Nevada State Legislature (“Senate Bill 1”). As the foundation for the review, Authority staff and Grand Canyon developed a document summarizing the numerous design and operational elements that have been incorporated at recently constructed NFL stadiums. This document, called Preliminary Stadium Design Issues for Consideration, lists more than 300 stadium design features and considerations related to stadium operations and spectator experience. The list was previously reviewed and discussed by the Authority board and is attached as an exhibit to this memorandum.

As part of the review process, the Raiders development team provided Grand Canyon with access to nearly 9,000 pages of documents. Grand Canyon’s review focused on the architectural, interiors and site design documents; it also included a cursory review of other design aspects, including technology, broadcast, mechanical, electrical, site, traffic and structural considerations. The documents were made available for review electronically as well as at the office of Holland & Hart in Las Vegas, Nevada, and the office of HNTB in Kansas City, Missouri. Additionally, Grand Canyon and the Raiders development team held two meetings to facilitate a discussion about the stadium’s design elements.

Because the stadium is a design-build project, the construction and design documents provided for review were not yet complete and final. This is to be expected at this point in the process as there will be changes to the building design, site design, features and operations in the coming months. Respecting the fact that some design elements may change as the project evolves, the preliminary assessment of Grand Canyon is that the facility is consistent with a first-class, premier multipurpose NFL stadium. Grand Canyon has noted that the variety of premium spaces, premium seating and general public seating is generally consistent with contemporary NFL stadiums. Additionally, the variety of spaces, the architecture and expansive volumes will be visually appealing and provide for an enriched fan experience.

Based on the design documents and information available at this time, Grand Canyon’s overall assessment is that many of the stadium’s elements are exceptional in their design, delivery and execution. However, Grand Canyon has highlighted some areas worthy of further monitoring and evaluation as the design evolves through the remainder and completion of the design-build process. Grand Canyon has identified other areas of the design where additional study may be warranted or information would be useful as it becomes available.

### **Design Elements for Attention**

**Parking and Pedestrian Movement.** It is evident that the site design will change with the development of a comprehensive parking plan and further study regarding circulation and separation of pedestrians and vehicles. The ultimate location of parking lots will be an important factor in the design, placement and capacity of pathways and structures that ensure that pedestrians can safely navigate between the lots and the stadium with minimal interaction with vehicular traffic. Due to the importance of traffic and parking accommodations for the pre- and post-game fan experience, Grand Canyon recommends monitoring the ongoing process of developing off-site parking and pedestrian movement plans and infrastructure. It should be noted that parking and transportation remains a pending item under the Clark County High Impact Project process, and the county has granted the Raiders until September 2018 to identify and develop an appropriate parking solution. Additionally, the development and lease agreement both require the

Raiders provide and maintain sufficient parking facilities as required by the County Development Agreement and that are consistent with first-class, premier standard contemplated by Senate Bill 1.

Sightlines. Due to the unique nature of the stadium project's field design, events that do not use the natural grass field tray will be located at or near the concrete surface approximately 48 inches below the level of the grass field. As a result, some areas in the lower bowl that are used for events such as collegiate football may have additional field-level sightline obstructions. This is a compromise inherent in the design of a multipurpose stadium; however, it is also worth noting that for other events such as full house concerts and basketball, the lower event floor may be advantageous to sightlines. Representatives from UNLV have met with the Raiders design team to review and discuss the sightlines and have indicated that they are acceptable.

### **Areas for Additional Study**

Rigging. Grand Canyon noted that more information would be helpful regarding the various potential rigging configurations and recommends that rigging loads be reviewed by an outside structural engineer familiar with current show loads to assess their ability to accommodate the variety of musical and sporting events that may be held at the facility. This concern has been conveyed to the Raiders design team for review and consideration as they work to complete the stadium design.

Climate Control. Grand Canyon noted that climate control in a desert environment can be a challenge and that it may be helpful to have a peer review of climate control systems by a mechanical engineer familiar with southern Nevada climate conditions to confirm cooling assumptions and air conditioning tonnages. This concern has been conveyed to the Raiders design team for review and consideration in completing the stadium design.

### **Areas Requiring Additional Information**

Grand Canyon has identified other areas of the stadium design where an assessment could not yet be made due to pending information or ongoing developments in the design process. These include the potential design changes that may be required to accommodate a food service provider once it has been selected; the inclusion of exterior shading elements to protect attendees and employees at security lines, ticket booths, bus loading/unloading areas, etc.; the locations and extent of outdoor lighting; the seating and field configurations for various types of events; the effectiveness of the ETFE roof in shielding broadcasting operations, players, performers and technology from solar hot spots; the locations and design of trash chutes and odor control mechanisms; and the type of phone systems, networking, scoreboards and other technology to be used at the facility. These items have been conveyed to the Raiders design team, and a more completed review and assessment can be undertaken should additional information become available.

As the design-build process continues, additional areas may be identified for additional review. Notably, however, Grand Canyon recognizes that the Raiders development team is comprised of nationally recognized firms experienced in the design of similar facilities, many of whom have been involved in the design of the most recently completed multipurpose stadiums. Grand Canyon believes that the expertise of the professionals assembled will provide a state-of-the-art facility that will serve the Stadium Authority and the user groups as intended.