AECOM

Preliminary Buffalo Bills Stadium Analysis

Empire State Development

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Delivering a better world

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Introduction

Overview of Engagement

Empire State Development (ESD) retained AECOM to provide advisory services related to the potential development of a new stadium for the Buffalo Bills. The analysis addresses a variety of topics, including consideration of renovation of Highmark Stadium versus the development of a new stadium; consideration of a new stadium in a downtown Buffalo site versus near the existing stadium in Orchard Park; consideration of an open-air stadium versus an enclosed stadium; and consideration of economic and fiscal impacts related to potential ancillary development, the ongoing operations of the Bills, and the potential lost impact if the Bills were to relocate to another market. While it is understood that the Bills' preference is for a new stadium in Orchard Park, it is important for ESD to fully understand the difference between renovation and new construction.

The focus of this document is to provide ESD with a recommendation for renovation versus development of a new stadium, as well as a cost comparison between a stadium in Orchard Park and a downtown location. Note that the report identifies a specific site near downtown based on the availability of information and previous studies. However, the general cost assumptions and other factors are applicable to any potential site in or near the downtown area*. This is not indicative of a preference for this particular site.* This includes an understanding of the conceptual building program that forms the basis for all assumptions and findings presented herein, the general items to consider when evaluating investment in a new stadium, and the cost factors associated with a renovation versus development of a new stadium. In addition, a summary of the factors, both quantifiable and intangible, impacting the cost differential for a downtown stadium have been identified and are summarized herein.

It is important to note that all building cost estimates presented are based solely on the preliminary, conceptual building program assumptions outlined with this analysis. AECOM developed this program based on current NFL stadium trends and standards as well as discussions with and information provided by the Bills. Similarly, AECOM has relied primarily on previous site analyses conducted by the Bills and other entities to evaluate the cost differential between the Orchard Park site and a downtown site. Due to the preliminary nature of the analysis, these estimates are likely to change, potentially materially, as formal design and programming efforts commence.

AECOM Background and Experience

AECOM is a globally recognized infrastructure services firm, providing economic development and planning, architectural design, engineering and construction services to public and private sector clients across numerous specialty areas. The AECOM+Sports team is the only fully integrated sports economics + design consultancy providing the expertise needed to make fully informed decisions regarding stadium development as a single entity. While most economics firms work independently of the architecture and cost estimating firms, we take an integrated approach from Day 1. Our sports economists work alongside our sports design and cost estimating teams to deliver market research that informs design in real time.

Our team is comprised of nationally recognized leaders in sports economics and facility design, with over 100 years of combined experience among our team's leadership. Our Director of Sports Economics has been involved in over 250 sports and public assembly venue development efforts, including NFL stadium efforts in Virginia, Minnesota, Texas, New York, California and elsewhere. AECOM+Sports design studio has delivered design and/or construction services to over 295 professional and collegiate sports venues across the United States, including a 2014 effort to assess potential site options for a new NFL stadium in the Buffalo area.

Executive Summary

Based on the evaluation of the conceptual building program and limited review of existing conditions at Highmark Stadium, it is recommended that ESD, Erie County and the Bills proceed with evaluating a new stadium versus renovating the existing stadium. This is based on preliminary estimated cost (approximately **$862 million to renovate versus $1.354 billion to build new**), the many unknown factors associated with renovation projects and the general lifespan of renovations (typically 10 to 15 years) compared to a new stadium (30 years or more, with ongoing incremental upgrades and improvements).

It is also important to consider the location of the proposed stadium. Based on a review of site analysis previously conducted by the Bills and other entities, it is estimated that a **downtown stadium would cost a minimum of approximately $350 million more than a stadium in Orchard Park**, including the cost of land acquisition. This is due to the cost to acquire the properties, the need for structured parking, improvements to highway interchanges and surface streets, utilities relocation, upgrades and other factors specific to the supporting infrastructure. In addition, analyses and consideration of anticipated social, economic and environmental effects of developing a downtown stadium, required under the New York State Environmental Quality Review Act (SEQRA) requirements, would be much more extensive than that at the current Orchard Park site, potentially adding 12 months or more to the project timeline, and an incremental cost increase of roughly five percent per year. These required processes could further be complicated if downtown residents or businesses would be displaced by site assemblage, particularly if land had to be acquired through condemnation, and/or if significant negative public comment is expressed. The costs of these potential issues cannot be quantified at this time.

In evaluating the potential public investment in a new NFL stadium, it is also important to consider the annual fiscal impacts generated by the presence of the Bills and patrons at Bills games and other events. Based on an analysis conducted by a third party and reviewed by AECOM, it is estimated that approximately **$27 million** in annual revenues from income, sales and other taxes can be directly attributed to the presence of the Bills ($482 million net present value). While a new stadium may drive a slight increase in these revenues, particularly if located in an urban area with enhanced retail and dining opportunities in close proximity, the potential increase is likely to be relatively minor. However, the analysis must also consider the potential loss of these revenues if the team were to leave the market if unable to secure a stadium agreement. In addition, there are significant intangible benefits associated with serving as the home of an NFL franchise that can impact policy decisions related to investment in a stadium and surrounding neighborhoods.

In addition, the AECOM team assessed the potential for ancillary development around the Downtown site and the Orchard Park site, developing estimates of the potential increase in property tax revenues that could result from development taking place along with the development of a new stadium. While there is little historical or projected demand for ancillary development at the Orchard Park site, a downtown site could potentially attract development to an area that has historically not seen significant new development. The net present value of the increase in property tax revenues from the properties surrounding the downtown site is estimated total approximately $53 million over the next 30 years.

In summation:

- The cost to renovate the existing stadium is estimated at approximately **$862 million**, compared to **$1.354 billion** for a new stadium at Orchard Park (a difference of approximately **$492 million**)
- The cost to build the same stadium in a downtown location is estimated to add an additional **$350 million** to the project cost, not including the potential cost to relocate residents and businesses and the potential time required to move through the SEQRA process **(potentially up to $100 million additional costs)** as well as the cost to add a roof to the stadium if required to address orientation issues of downtown site **(an additional $300 million).** With these additional costs, a new downtown stadium could cost up to **$2.1 billion** or more.

- The Bills currently generate approximately **$27 million per year ($482 million net present value)** in fiscal revenues to the City, County and State; if the Bills were to relocate out of the market, these revenues would also be lost
- Both the Orchard Park and Downtown sites have limited potential to attract significant upfront real estate investment; however, public investments in infrastructure surrounding a downtown stadium could potentially result in increased property values in the area, resulting in increased property tax collections, estimate to total approximately **$53 million (net present value)** over the next 30 years.
- There are additional, intangible factors that cannot be quantified but must also be considered in any analysis related to public investment in a new stadium.

Additional supporting information is provided in the main body and appendices of this report.

New vs. Renovation Discussion

Building Program Overview

In conducting the analysis presented herein, AECOM developed a conceptual building program that would be sufficient to accommodate the needs of the Bills in either a new or renovated stadium. While the Bills provided general parameters related to overall seating capacity, inventory of premium seating and other basic amenities, it is critical to recognize that the building program outlined herein has been developed based primarily on current NFL stadium trends and standards. For purposes of the analysis, all assumptions and estimates presented herein should be considered baseline assumptions and estimates that will need to be updated as actual stadium design and development commences and all stakeholders are able to be provide full input.

For purposes of this analysis, it is assumed that the building program for both a renovated Highmark Stadium and a new stadium will effectively be identical, although specific building layout will vary. At a minimum, it is assumed that the following program elements will be incorporated into any new or renovated stadium development:

- The primary assumption is that the stadium will be **open-air**
- Total seating capacity of at least **60,000 seats**
- Approximately **60 private suites**, each with 16 seats
- Approximately **60 loge boxes**, each with four to eight sets
- Approximately **5,000 to 6,000 club seats**
- Enclosed and conditioned club spaces sufficient to accommodate all suite, loge and club seat patrons
- Additional spaces throughout the stadium providing general seating fans with some level of protection against the element, including fully-enclosed and partially enclosed spaces with supplemental heating sources during inclement/cold weather
- Improved concessions accessibility, capabilities and offerings
- Enhanced concourse circulation
- Improved access to the playing surface for trucks/equipment to accommodate both NFL and non-NFL events
- Improved Bills and visiting team locker rooms and training facilities

General Considerations

In evaluating the decision to invest in a renovated Highmark Stadium or a new stadium, it is important to understand the following industry standards and considerations:

- In general, when the cost of renovation exceeds approximately 60 percent of the cost to replace with a new facility, assuming comparable building program, scope, size, operational capabilities, etc. the project reaches a tipping point where new construction is the generally recommended approach
- It is important to consider the useful life of renovation versus new construction. Past experience demonstrates that significant renovations may extend the useful life of a venue for approximately 15 to 20 years, assuming regular, incremental improvements and upgrades throughout this period. Conversely, a new venue can generally be expected to have a useful life of 30 years or more, assuming the same level of incremental investment and upgrades.
- Historically, renovation projects are considered more likely to encounter situations that require either additional investment or a reduction in building program to stay within the original budget. The

renovation estimates presented herein are based on a tour of the stadium and review of previous stadium condition analyses. AECOM has not conducted any independent stadium condition assessment and has relied solely on the work conducted by others. Given the extensive renovations necessary to bring the stadium up to current standards, it is considered highly likely that a renovation will encounter challenges throughout the design and construction phases that will drive the estimated costs higher than presented herein.

- Additional considerations related to renovation and constructability issues are provided in Appendix A to this report

New Versus Renovation Summary

The following section presents a summary of the estimated costs of a new stadium versus a renovation to Highmark Stadium. Additional information related to these estimates is presented in Appendix B to this report. This estimate represents an initial order of cost assessment to provide an indicative comparison of a New Build option versus a Renovation option. Certain assumptions have been made pertaining to the nature of changes that might be realized during a renovation and allowances have been made for elements of a future design. With future and further design development, opportunities will exist to reduce, but changes to scope and design may also increase cost.

Table 1 New Stadium vs. Renovation Cost Estimate

	New Construction		Renovation	
	Total ($) Construction	**$/SF on GIA**	**Total ($) Construction**	**$/SF on GIA**
	(rounded)		*(rounded)*	
GIA *(Gross internal Area)*	*913,164 SF*		*925,000 SF*	
GFA *(Gross floor area - bowl / spectator spaces)*	*500,638 SF*		*475,000 SF*	
	1,413,802 SF		*1,400,000 SF*	
Base Project:				
New 60,000 seat NFL football stadium	$1,354,000,000	$ 958 / SF	$862,000,000	$ 616 / SF
Adjacent site works	incl.		incl.	
TOTAL CONSTRUCTION COST	**$1,354,000,000**		**$862,000,000**	
% of New Construction	100%		64%	

As shown, it is estimated that a new or renovated stadium would encompass approximately 1.4 million square feet in total. Based on this assumption, it is estimated that a new stadium would cost approximately $1.354 billion to construct, while a renovated stadium is estimated to total approximately $862 million, or approximately 64 percent of the cost to build new. As noted previously, and given the level of unknown factors related to the renovation, the cost to renovate is likely to vary more significantly than the cost to build new. Therefore, based on the relative estimated cost, the unknown factors related to renovation and the expected useful life of a renovation relative to a new construction, it is generally recommended that ESD, the County and the Bills proceed with options for a new stadium over renovating the existing stadium.

Roof-Ready Versus Roofed Stadium

While the estimates presented above reflect an open-air stadium, ESD has requested that AECOM provide estimates related to either preparing a new construction to be able to accommodate a roof at some point in the future or to build a new, roofed stadium from the outset. The following table summarizes the estimated incremental cost for each scenario.

Table 2 Roof-Ready versus Domed Stadium Cost Estimate

	Roof-Ready	Build New Roof
Hard Construction Cost	$83,800,000	$229,200,000
Allowance for Soft Costs	25,200,000	68,800,000
Total Cost - Roof	**$109,000,000**	**$298,000,000**
Total Construction Cost - New Stadium	**$1,463,000,000**	**$1,652,000,000**

As shown, the cost to prepare a new, open-air stadium to be able to accommodate a roof at some point in the future, is estimated to add $109 million to the cost of the stadium. The cost to build a stadium as described herein with a roof from the outset is estimated to add $298 million to the cost of the stadium, bringing the total cost of a new stadium to approximately $1.463 billion to $1.652 billion. These estimates assume a fixed roof with a basic structure and the costs are derived from an estimated area of roof – there is no specific design at this stage. More advanced structures, complex geometry, site constraints or the ability to retract the roof will add significantly to these costs.

Downtown versus Orchard Park

Overview

The downtown site (also called “South Park site”) is defined as the properties bound by Louisiana Street to the west, South Park Avenue to the south, Hamburg Street to the east, and I-190 to the north. The AECOM site analysis in 2014 identified two additional sites within approximately ½ mile of this site that could also potentially be considered for a new stadium. For purposes of this analysis, the incremental costs for the South Park site are estimated to be comparable to the costs associated with any of these three potential sites.

Figure 1 South Park Site

The Orchard Park site is located immediately to the west of Highmark Stadium, across Abbott Road, on what is currently parking Lots 3 and 4 for events at the Stadium. The site is owned by Erie County, therefore it is assumed no additional site acquisition costs are required. Further, while the site is generally considered to be “shovel ready,” a stadium would require a formal SEQRA process to be completed. It can reasonably be assumed that assessments of impacts would be limited to those that may occur during the construction period (e.g. temporary effects to traffic, noise, air quality, parking, etc.), given that once completed the new stadium’s operations would be similar to the current stadium’s. The cost estimates presented herein reflect all estimated costs associated with a new stadium on this site, including hard and soft costs directly related to the stadium, demolition of Highmark Stadium, relocation and expansion of utilities as well as limited roadway and interchange improvements as identified in previously conducted studies.

Site Acquisition Issues

A stadium near downtown Buffalo will incur additional costs for site acquisition, relocation of displaced residents and businesses, relocation and upgrades to utilities servicing the site, improvements to surface streets and highway access, construction of required parking structures and lots, urban delivery constraints and other factors. To assess the impact of these costs, AECOM first reviewed recent bulk land sales in and near downtown Buffalo to establish a reasonable benchmark for valuation of the property parcels. This analysis indicates an average value of approximately $530,000 per acre, or approximately **$14 million** to acquire all of the parcels identified.

It is important to note that while the majority of these parcels are currently owned by the Buffalo Municipal Housing Authority, there are a number of privately-owned residential parcels on the southeast quadrant of the site, with privately-owned commercial properties on the southwest and northwest corners as well. With multiple landowners, the acquisition negotiation process often adds significant time to a project timeline, potentially adding to the cost as well as pushing the stadium completion date further into the future. While both downtown and Orchard Park sites will require the SEQRA process, it is estimated that this process would take a minimum of 12 months or longer for the South Park site than the Orchard Park site due to the fact that it represents the introduction of a major new facility in a densely populated location. For example, various neighborhood impacts to the Commodore Perry and First Ward communities would need to be assessed, both during construction and operation of the stadium complex. Localized and regional traffic effects would need to be fully modeled, as well as associated air quality impacts. In turn, many of the properties downtown, including the now vacant former public housing at the South Park site, which date back to the Great Depression, will likely trigger consultation with the State Historic Preservation Office as they are likely eligible for inclusion on the National Register for Historic Places. Finally, any property owners that may be displaced as part of this project would need to be relocated elsewhere within Buffalo, incurring additional costs to the project.

Infrastructure Considerations

AECOM reviewed the site and infrastructure analyses conducted by prior consultants for the Bills. These studies highlighted a number of potential traffic and utility improvements that would be necessary to accommodate attendance at an NFL game or other large event at the new stadium. The AECOM team reviewed these initial recommendations and provided additional, independent analysis to quantify the estimated costs of these improvements. Specific items quantified as part of this analysis include:

- Improvements to Oak and Elm Streets to alleviate congestion, including adding turn lanes to Oak Street, adding a dedicated lane on the ramp from I-190 South onto Seneca Street and re-striping Michigan Street with a center two-way turn lane
- Improvements to the I-190, Louisiana and Hamburg interchanges, including closing Scott Street on game days, signalizing Scott Street at Louisiana with MIOVISION signal, add lane to Louisiana Street and re-stripe for two lanes northbound from South Park to I-190 ramp, and widen Hamburg Street under the I-190 bridge to accommodate four full lanes. In turn, depending on the extent of changes to I-190, and/or if they are financed through federal transportation funds, would have the added potential of triggering federal environmental review requirements under the National Environmental Policy Act (NEPA). While such NEPA documentation could be combined with the SEQRA process, its administration and approval process, which would need to be processed through the Federal Highway Administration, could further elongate the review process for a downtown site.
- Consideration of reversible lanes for portions of South Park Avenue and Louisiana Street and restrict parking on South Park Avenue on game days, allowing traffic to use parking lane as a driving lane
- Improvements to Smith Street interchange with I-190, widening the on-ramp to two lanes, restriping Smith Street for two lanes with a narrow shoulder on the west side and wider shoulder on the east, installing a MIOVISION signal at Elk Street and South Park Avenue

- Improvements to the ITS system, including upgrading and expanding the NITTEC control center, installing fiber along South Park to Abbott Road, installing MIOVISION signals at strategic locations noted above, install three MIOVISION cameras on Church Street, install MIOVISION control and monitoring at NITTEC control center, add approximately 25 variable messaging signs along South Park, Elm and Oak Streets, construct a total of 12 Crash Investigation Sites along I-190 and Route 33, and dedicate two tow trucks to I-190 and Route 33 on event days.
- Construct a 1,500-space parking structure as well as approximately 3,000 additional surface parking spaces
- Add primary and secondary pedestrian connections, upgrade walkways and secure pathways, provide elevated pedestrian connections/bridge to green zones south of South Park
- Expansion of water service to the site, including new domestic, hydrant and fire suppression loops; additional fire hydrants; emergency power generator for fire pump
- Sanitary sewer improvements, including realignment of storm relief sewer and detention tank (if needed)
- Enhance NFG gas distribution capacity
- Electrical system enhancements, including relocation of existing substation (requires further study to determine capacity sufficiency), relocation of Perry Street power facilities and new street lighting

The incremental cost for these improvements is estimated to total approximately **$336 million** compared to a new stadium at Orchard Park. With the additional land acquisition cost, the total cost associated with a new stadium at the South Park site is estimated at approximately **$1.7 billion**, compared to $1.354 billion at Orchard Park. Additional detail on the improvements outlined herein is included in Appendix B to this report.

Additional Considerations

While the quantifiable costs are a significant factor in assessing where a new stadium should be located, it is also important to consider several intangible or other less definable factors that cannot specifically be quantified at this time. These include, but are not limited to:

- Cost inflation due to prolonged acquisition process, SEQRA documentation requirements and site preparation issues, estimated at approximately five percent per year, adding approximately $85 million per year over the time required for an Orchard Park stadium. In addition to the added cost, further delay would push the Bills beyond the termination date of their existing lease for Highmark Stadium, requiring renegotiation or other measures to satisfy the Bills.
- Public comment on locating a stadium at the South Park site could potentially be significant given the historic nature of the adjacent First Ward neighborhood, environmental justice issues related to potential effects to the Commodore Perry public housing project, potential displacement of existing residents and businesses, increased traffic and congestion and other factors. The public engagement process for a project of this magnitude may result in a further delay in project commencement, potentially adding additional costs due to inflation.
- Due to site constraints, it may be difficult to orient the stadium in the North-South orientation required for an open-air stadium. If this orientation cannot be accomplished on the downtown site, it may be necessary to enclose the stadium, adding approximately $300 million or more to the project as noted previously.
- While a new NFL stadium is unlikely to drive new private ancillary development in and of itself, it could serve as a centerpiece for a larger mixed-use urban redevelopment effort, although this would require a broad public consensus and additional specific policy actions and funding to facilitate.

NFL Fiscal Impact Discussion

In evaluating the potential investment of public funds in a new NFL stadium it is also helpful to understand the annual fiscal impact generated by the Buffalo Bills in the greater Buffalo region. The presence of the Bills attracts visitors from throughout Western New York as well as visitors from out of state, including Canadian visitors. These visitors spend money locally that would not otherwise be spent in the market, resulting in a positive impact to the overall community, which is most directly recognized through revenues from sales and income taxes as well as other tax sources.

As part of this analysis, AECOM has reviewed the economic and fiscal impact analysis previously conducted by a separate entity on behalf of the Buffalo Bills. Based on this review of assumptions and methodology, as well as discussions with the Bills and the team's current stadium consultants, the findings of this analysis are considered reasonable and consistent with the methodology typically utilized in this type of analysis.

The previous report focused specifically on the net new economic and fiscal impacts related to the presence of the Bills. In developing these estimates, the report utilized information gathered from fan intercept surveys conducted before, during and after Bills games. These surveys were used to quantify spending by patrons before and after entering the stadium, with specific adjustments made to reflect the patrons' reason for attending. For instance, spending from patrons who noted they were visiting Buffalo specifically to attend the Bills game is assumed to be higher than patrons who were in Buffalo for a business trip, and attended a Bills game out of convenience. In addition, the analysis assumes that all spending outside the stadium before and after games is considered "substitution" spending which would take place by patrons regardless of the presence of the Bills. *This methodology is considered appropriately conservative when assessing potential economic and fiscal impacts*.

Table 3 Estimated Annual Fiscal Impacts Related to Operations of the Buffalo Bills

	City of Buffalo	Erie County	State of New York	Total
Revenue Streams				
Sales and Use (a)	$328,000	$2,534,000	$2,274,000	**$5,136,000**
Hotel Occupancy		609,000		**609,000**
Team Rent		862,000		**862,000**
Gasoline			535,000	**535,000**
Personal Income			19,482,000	**19,482,000**
Rental Car			51,000	**51,000**
Total	**$328,000**	**$4,005,000**	**$22,342,000**	**$26,675,000**

(a) County sales tax is net of amount allocated to specific municipalities within the County, including $328,000 allocation to City of Buffalo

As shown, the presence of the Bills is estimated to generate approximately $27 million in net new total fiscal impacts for the City ($328,000), County ($4.0 million) and State ($22.3 million). Personal income tax, primarily related to Bills team payroll, is the largest single fiscal revenue source, generating approximately $19.5 million per year for the State of New York.

The development of a new NFL stadium will provide significant new revenue streams for the Buffalo Bills, primarily through new premium seating offerings and sponsorship opportunities. However, those revenues do not necessarily flow through to the greater economy in terms of economic or fiscal impact as they represent team profit as well as local expenditures. Similarly, visitor levels are considered unlikely to change significantly with the development of a new stadium. Therefore, the more relevant question revolves are the potential loss of fiscal impacts if the team were unable to secure a new stadium and decided to relocate to another market.

As noted previously, the analysis previously conducted on behalf of the Bills represents the net new impacts on the local economy, meaning the fiscal impacts generated by the Bills are due specifically to the team's presence. Therefore, if the team were to relocate outside of the Western New York region or the state entirely, these tax revenues would no longer be generated within the market, resulting in the loss of nearly $27 million annually in total tax revenues to the City, County and State combined.

In addition to the potential loss of these annual fiscal impacts, there are other, non-quantifiable factors that directly affect local residents and businesses. While these factors cannot be quantified, they must also be considered in a comprehensive review of the benefits derived from hosting an NFL franchise. These benefits may include, but are not limited to:

- Enhancing community pride, self-image, national and global media exposure and reputation
- Serving as a significant component of the region's collective position as a tourist destination, which indirectly supports associated visitation at other locations in the region
- Providing quality of life amenities to assist with business attraction to the community, or for existing businesses to utilize in recruiting potential employees to the area
- Acting as a tourist destination for NFL fans and others considering visiting Western New York
- Labeling the Buffalo market's select status as an "NFL caliber" market, which contributes to positive perceptions that influence private sector investment in the region

By hosting one of only 32 NFL franchises, the Buffalo market receives a significant amount of recognition through national and international television, media and internet broadcasts. This exposure can serve to raise the profile of the Buffalo area in the eyes of corporations and individuals considering relocating to or visiting Western New York, in turn helping strengthen the overall economy of the area.

Conversely, losing an NFL franchise to relocation can have a significant negative impact on the area's reputation and attractiveness. Collective pride in an NFL franchise often inspires an entire city and region. Losing a franchise can foster a perception that the community lacked a coherent direction and ability to move forward with complicated projects to retain important assets. The loss of the Bills would also result in the loss of the national and international exposure generated by the NFL.

Ancillary Development Analysis

AECOM explored the potential of ancillary development on both the Orchard Park and Downtown locations. Both sites have limited potential to spark significant upfront real estate investment, but the Downtown location can potentially improve surrounding property values, and subsequently increased local property tax collections.

AECOM modeled historic development and absorption in Orchard Park and the City of Buffalo (Buffalo or the City). These rates are projected forward linearly to understand broadly what future development in the two geographies may look like over the next 30 years. In this analysis, absorption is used as a proxy for real estate demand, which is dependent on a multitude of factors including future demographics and employment, existing supply, and market trends.

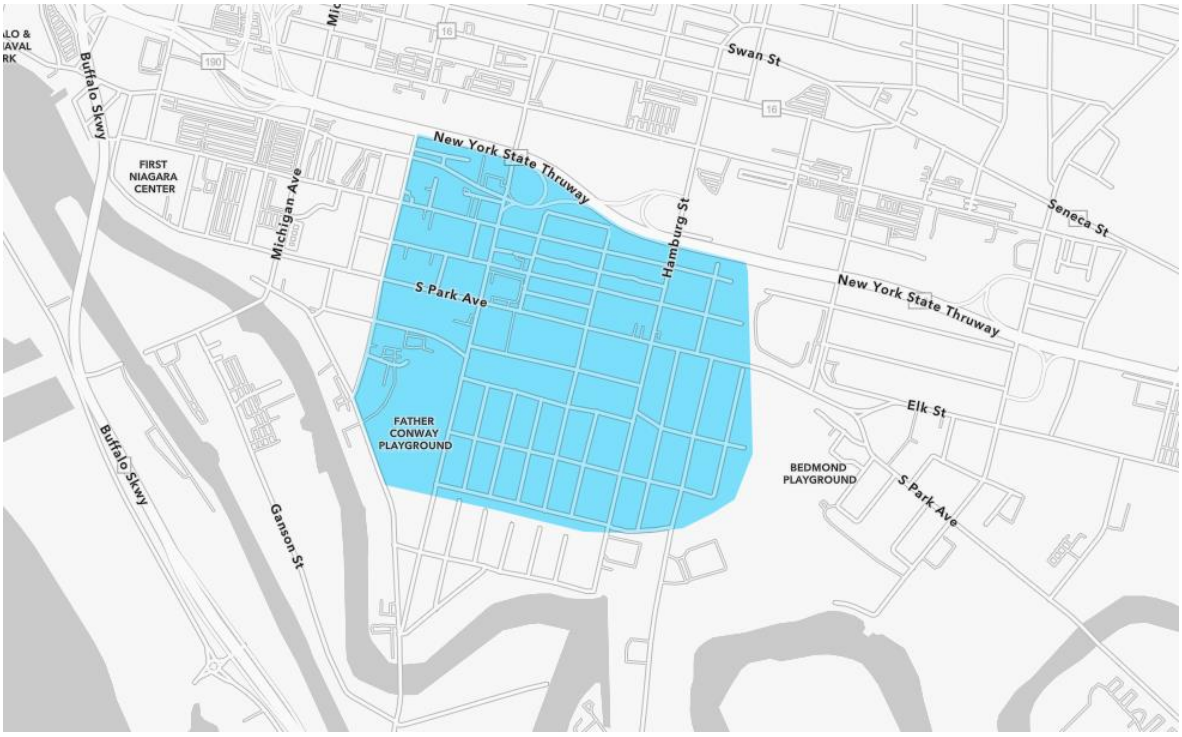
It should be noted that in both geographies, the 'capture rate' of new development by the stadium district ("the district"), or the area immediately surrounding the existing or proposed stadium sites, has been limited. In addition, it is not expected that a new/renovated stadium in either geography will significantly change real estate development trends, which are driven by the underlying demographics and economics of the area. However, with specific policy support from the public sector (City of Buffalo, Erie County, and/or State of New York) and/or the Buffalo Bills ("the Bills" or "the Team"), additional capture of development projected to occur *in* the broader geography *to* the future stadium district could be contemplated. Over time, the development of a robust stadium district may increase property values in the area, generating some "net new" fiscal impact.

When considering the Orchard Park location, fiscal impacts are limited. In the Downtown location, the net present value of the net new fiscal impacts to the City of Buffalo and Erie County from increased future property tax collections is estimated at a net present value of approximately $53 million in the baseline capture rate scenario over a 30 year period. This incremental value would be driven by reaction of the real estate market to the public infrastructure investment surrounding a downtown stadium.

Figure 2 South (Orchard Park) Submarket Boundary

Figure 3 City of Buffalo Boundary

Figure 4 Downtown Study Area Boundary



Quantifying Ancillary Development Potential

Historic absorption trends in Orchard Park and Buffalo are shown below. Growth in Orchard Park has been limited to marginal increases in commercial and retail product with more concrete growth in residential and hospitality. Hospitality growth has eroded in the last 5 years with only an average of 16 units added from 2017 to 2021 per year. Retail and Office additional lag with 10,186 square feet and 11,700 square feet per year added through the last 5 years.

Table 4 Orchard Park – Existing Growth Trends

Year	Multifamily Residential	Commercial Office	Retail	Hospitality
2007	7,960 units	3,170,061 sf	12,120,150 sf	918 units
2008	7,960 units	3,175,461 sf	11,930,725 sf	918 units
2009	8,080 units	3,175,461 sf	12,326,444 sf	1,109 units
2010	8,443 units	3,178,461 sf	12,365,399 sf	1,111 units
2011	8,533 units	3,178,461 sf	12,340,561 sf	1,111 units
2012	8,533 units	3,215,135 sf	12,349,861 sf	1,219 units
2013	8,807 units	3,215,135 sf	12,356,236 sf	1,219 units
2014	8,807 units	3,374,472 sf	12,244,264 sf	1,219 units
2015	8,975 units	3,408,332 sf	12,296,070 sf	1,218 units
2016	9,085 units	3,423,332 sf	12,321,509 sf	1,218 units
2017	9,235 units	3,459,123 sf	12,343,509 sf	1,298 units
2018	9,235 units	3,479,123 sf	12,366,841 sf	1,298 units
2019	9,361 units	3,479,123 sf	12,368,941 sf	1,298 units
2020	9,672 units	3,479,123 sf	12,372,441 sf	1,298 units
2021	9,922 units	3,479,123 sf	12,372,441 sf	1,298 units
Last 5 Year Average Change	167 units	11,700 sf	10,186 sf	16 units

Growth within the City of Buffalo has increased over the past decade, especially in the multi-family residential category. New deliveries totaled an average of 457 units per year from 2017 through 2021.

Table 5 City of Buffalo – Existing Growth Trends

Year	Multifamily Residential	Commercial Office	Retail	Hospitality
2007	18,997 units	20,372,571 sf	16,652,772 sf	1,546 units
2008	18,997 units	20,740,189 sf	16,657,349 sf	1,546 units
2009	18,997 units	20,740,189 sf	16,663,570 sf	1,728 units
2010	19,029 units	20,746,093 sf	16,681,770 sf	1,728 units
2011	19,085 units	20,663,003 sf	16,712,336 sf	1,728 units
2012	19,120 units	20,663,003 sf	16,724,034 sf	1,728 units
2013	19,120 units	20,463,003 sf	16,581,313 sf	1,728 units
2014	19,257 units	20,704,923 sf	16,106,181 sf	1,954 units
2015	19,411 units	21,434,909 sf	16,074,154 sf	2,159 units
2016	19,807 units	21,339,909 sf	16,094,257 sf	2,274 units
2017	20,337 units	21,431,069 sf	16,110,834 sf	2,446 units
2018	20,679 units	21,456,469 sf	16,112,684 sf	2,446 units
2019	21,011 units	21,623,469 sf	16,264,453 sf	2,556 units
2020	21,626 units	21,638,369 sf	16,276,453 sf	2,556 units
2021	22,090 units	21,657,747 sf	16,416,453 sf	2,556 units
Last 5 Year Average Change	457 units	65,260 sf	65,813 sf	42 units

Projected future growth in Orchard Park and Buffalo are shown in Table 6 and Table 7. As shown, little to no ancillary development is projected in Orchard Park. This could change through concerted policy efforts by the municipality, County, State, and/or Team, however, community facility uses are likely the most feasible given demand trends. Assessed property values are unlikely to change significantly.

Table 6 Orchard Park Study Area – Projected Growth Trends

Baseline Capture - With New Stadium - Orchard Park

Year	Multifamily Residential	Commercial Office	Retail	Hospitality
2022	0 units	0 sf	0 sf	0 units
2023	0 units	0 sf	0 sf	0 units
2024	0 units	0 sf	0 sf	0 units
2025	0 units	0 sf	0 sf	0 units
2026	0 units	0 sf	0 sf	0 units
2027	0 units	0 sf	0 sf	0 units
2028	0 units	0 sf	0 sf	0 units
2029	0 units	0 sf	0 sf	0 units
2030	0 units	0 sf	0 sf	0 units
2031	0 units	0 sf	0 sf	0 units
2032	0 units	0 sf	0 sf	0 units
2033	0 units	0 sf	273 sf	0 units
2034	0 units	0 sf	818 sf	0 units
2035	0 units	0 sf	1,163 sf	0 units
2036	0 units	0 sf	1,508 sf	0 units
2037	0 units	0 sf	1,895 sf	0 units
2038	0 units	0 sf	2,249 sf	0 units
2039	0 units	0 sf	2,656 sf	0 units
2040	0 units	0 sf	3,130 sf	0 units
2041	0 units	0 sf	3,451 sf	0 units
2042	0 units	0 sf	3,841 sf	0 units
2043	0 units	0 sf	4,289 sf	0 units
2044	0 units	0 sf	4,725 sf	0 units
2045	0 units	0 sf	5,150 sf	0 units
2046	0 units	0 sf	5,628 sf	0 units
2047	0 units	0 sf	6,152 sf	0 units
2048	0 units	0 sf	6,765 sf	0 units
2049	0 units	0 sf	7,299 sf	0 units
2050	0 units	0 sf	7,680 sf	0 units
2051	0 units	0 sf	8,287 sf	0 units
2052	0 units	0 sf	8,844 sf	0 units
Baseline Capture Rate	0.0%	0.0%	1.6%	0.0%

While there is little projected growth for a new stadium in Orchard Park, in Buffalo, there is increased potential to spur investment in the stadium district. Over the 30-year time horizon, the area could capture 6.1% of all residential units, depending on the assumed capture rate. A stadium in the Downtown location has a greater potential to improve the characteristics of the existing neighborhood. Significant investments in infrastructure will improve accessibility to the area, introduce new sidewalks, and revamp old improvements that are past their useful life. These expenditures are more likely to spur investment in the community versus investments in the Orchard Park location and therefore support increased property values and assessed values.

Table 7 Downtown Study Area – Projected Growth Trends, Baseline

Baseline Capture - With Downtown Stadium				
Year	**Multifamily Residential**	**Commercial Office**	**Retail**	**Hospitality**
2022	0 units	0 sf	0 sf	0 units
2023	0 units	0 sf	0 sf	0 units
2024	3 units	0 sf	0 sf	0 units
2025	22 units	0 sf	0 sf	0 units
2026	49 units	0 sf	0 sf	0 units
2027	76 units	0 sf	0 sf	0 units
2028	99 units	0 sf	149 sf	0 units
2029	125 units	0 sf	1,681 sf	0 units
2030	154 units	0 sf	3,892 sf	0 units
2031	183 units	490 sf	6,100 sf	0 units
2032	216 units	5,724 sf	8,156 sf	0 units
2033	245 units	10,253 sf	10,629 sf	0 units
2034	273 units	15,007 sf	13,187 sf	0 units
2035	304 units	20,461 sf	15,330 sf	0 units
2036	336 units	25,043 sf	17,918 sf	0 units
2037	367 units	30,935 sf	20,238 sf	0 units
2038	397 units	35,699 sf	22,963 sf	0 units
2039	429 units	39,451 sf	25,489 sf	0 units
2040	459 units	44,019 sf	28,760 sf	0 units
2041	486 units	49,750 sf	30,641 sf	0 units
2042	515 units	55,178 sf	33,034 sf	0 units
2043	550 units	60,990 sf	35,382 sf	0 units
2044	582 units	67,259 sf	37,639 sf	4 units
2045	615 units	73,753 sf	39,813 sf	8 units
2046	652 units	79,213 sf	42,703 sf	13 units
2047	685 units	85,612 sf	45,339 sf	16 units
2048	720 units	90,840 sf	47,896 sf	19 units
2049	755 units	97,746 sf	50,441 sf	24 units
2050	785 units	103,763 sf	52,993 sf	29 units
2051	817 units	108,824 sf	55,710 sf	33 units
2052	849 units	114,911 sf	58,071 sf	37 units
Baseline Capture Rate	6.1%	3.2%	3.0%	16.6%

These projections are conservative and based on historical deliveries of product delivered in the Buffalo area. These values are dependent on several factors including availability of soft sites, willingness of market participants to transact, management of transportation, connectivity issues, and market trends.

It is important to note that the development projections are not considered net new development demand in the Buffalo market, rather this development would likely be replacing development that may have taken place elsewhere in Buffalo. However, development in the area surrounding the stadium is anticipated to result in increased property values and resulting tax revenues relative to development that may take place in other areas of Buffalo. This revenue is considered net new to the market. The downtown area is expected to attract residents from other parts of the city, but not new residents outside of Buffalo. The fiscal impacts of this pull include increases in property values in the First Ward to be more reflective of current pricing in the Downtown (Central) and Ellicott neighborhoods. Ancillary development around the Downtown site is expected to be slow and start with renovations of existing or vacated properties. As accessibility to the site improves, more mixed-use development with greater density is expected around the stadium.

Fiscal Impacts of Ancillary Development

The following section focuses on the net fiscal impacts from property taxes of the Downtown stadium location. Due to the limited projected development around the proposed Orchard Park location, fiscal impacts from property taxes on ancillary development are not detailed below.

As described above, ancillary development is not considered as “net new” to the City of Buffalo. However, property tax values are expected to increase, generating net fiscal impact to the City and County. This analysis assumes a new stadium in the Downtown location causes assessed values in the stadium district increase to mirror the assessed values in the nearby Downtown (or Central) and Ellicott neighborhoods. Fiscal impacts from sales and income taxes are not modeled because development is not considered to be net new. This is a conservative approach – additional development scenarios with net new ancillary development could be considered, however such efforts would require additional public and private investment along with concerted policy efforts from the public sector beyond the scope being considered in this analysis.

In the Downtown location, net new fiscal impact from the increase in property taxes to the City of Buffalo and Erie County are estimated to total approximately $53 cumulatively over a 30 year period. This is calculated using two scenarios:

- Status Quo: no Downtown stadium, existing property assessed values (First Ward), no additional capture
- Baseline: new Downtown stadium, higher assessed values (average of Downtown and Ellicott), accelerated additional capture

Note that these impacts do not take into consideration property tax exemption and abatement programs that may be applied to ancillary development.

Table 8 Downtown Stadium – Property Tax Impacts – Net Present Value

	City of Buffalo	Erie County	Total NPV
Total Impacts			
Status Quo - No New Stadium	$6,000,000	$2,000,000	$8,000,000
Baseline - New Downtown Stadium	42,000,000	19,000,000	61,000,000
Net Impacts	**$36,000,000**	**$17,000,000**	**$53,000,000**

See Appendix D for detailed property tax assumptions.

Additional net new ancillary development in the Buffalo stadium district may be supported by coupling new stadium development with other public policy priorities. Policy priorities could include but are not limited to:

- Additional infrastructure investment: New public investments have the potential to drive additional development to the area as households and companies are making competitive location decisions between the City of Buffalo and other areas.
- Convention Center events, Hospitality, and Tourism: Through additional programming, the public sector could incentivize increased hotel development with the goal of supporting a more robust convention and tourism industry after the COVID-19 crisis.[1] Additional analysis would be needed to understand required thresholds for hosting large-scale events such as the Super Bowl and whether these are feasible to achieve. Though this strategy may require upfront subsidy, additional analysis could quantify the trade-off with over-time fiscal and economic benefits.
- Multifamily Residential: Through continued support for downtown living by empty nesters and young professionals via existing and/or new condo/multifamily programs, current development trends could extend or accelerate, benefitting ancillary development in the stadium district. This could also be coupled with additional emphasis on affordable housing development to address existing needs within the City.
- Commercial Office: Via concerted corporate attraction efforts, including but not limited to PSE / AdPro portfolio companies or others with natural sports synergies. Note office vacancy rates have increased as a result of the 2020 pandemic and have yet to fully recover.

[1] The Buffalo hotel market has suffered tremendously through the pandemic. Only one hotel project is under construction totaling 115 keys and occupancy rates hover around 45%. Normal occupancy rates for the City of Buffalo averaged 65% before the pandemic.

Appendix A - Renovation Considerations

The AECOM team visited Buffalo and met with ESD and Bills to tour Highmark Stadium as well as a proposed downtown site on August 23 and 24, 2021. A primary focus of this visit was to gain an understanding of the operational constraints and challenges of Highmark Stadium and provide initial insight into the potential for renovations. Upon completion of the tour, and in recognition of the program elements described in the body to this report, the following issues have been identified and potential pathways for improvement have been noted:

- Main concourse is located below grade, resulting in a fan experience inconsistent with other venues in the league.
- Premium level is currently accessed from grade level; however, this configuration introduces excess capacity to the premium level while restricting access to the main concourse to relatively few, narrow staircases
  - OPTION: move main concourse to grade level and expand to accommodate increased traffic and shift premium concourse and seating to existing lower level main concourse location.
    - This would require reconfiguration of lower seating bowl for premium seating
    - Reduced occupancy demand is better accommodated by existing configuration of lower concourse levels.
    - With main concourse at grade, perimeter could be expanded to provide adequate circulation and amenities for general seating patrons
- Field level vehicular access is limited to single tunnel at east end of stadium; presents logistical issues for football operations as well as hosting non-football events such as concerts
  - OPTION: rebuild east endzone seating to provide increased access to field, improved team locker rooms and training facilities; may also consider multiple field access points in other areas of the stadium, requiring further reconstruction and reconfiguration of lower bowl seating structure
- Upper deck has extensive deterioration and pending confirmation of applicable engineering assessment is assumed to be near the end of usable life span. Any consideration of renovation would likely to require a complete replacement of this component
  - OPTION: in conjunction with concourse reconfiguration and associated renovation strategies noted previously, a new upper seating tier and accompanying circulation would be provided to enhance circulation, accessibility, egress, fan amenities, and increase seating options.
    - Reconstruction and/or renovation will require extensive rebuild of core stadium elements below the upper deck; any solution considering this approach may require a phased replacement strategy to minimize any potential disruption
- Existing stadium does not include contemporary food service/catering facilities; majority of catering is serviced from satellite facilities built outside the stadium footprint, requiring product to be prepared off-site and transported to stadium to be distributed to final sale/distribution points. This condition while functional is inconsistent with other venues across the league.
  - OPTION: develop expanded accommodation including modern food services/catering facilities within building footprint; the specific location would be subject to development of redevelopment plans.

- Existing southeast and southwest corner, enclosed club spaces, while providing climate controlled space for premium patrons, do not provide game-day atmosphere desired by patrons and ownership; these seats are currently not fully sold, resulting in increased effort by sales team to sell individual gameday tickets
  - OPTION: pending other improvements noted herein, retain majority of existing structure, but modernize and rebuild glass wall with view to playing surface to allow partitions to be retracted and allowing the outdoor stadium experience indoors, while still offering partial climate controlled environment
- Recent trends in NFL stadium renovation or new construction have varied, depending on political or other factors:
  - Seattle, Minnesota and Atlanta each elected to build new facilities on the exact site or very near to their previous facilities, minimizing disruption and expense to infrastructure related elements; these projects could be considered hybrid new/renovation projects compared to locations where the venue was located in a completely new site
  - Other projects, like Miami, Green Bay, Kansas City and New Orleans have shown that massive transformations are possible regardless of the condition or age of the original venue; New Orleans is a prime example, with the renovations to the Superdome after Katrina and subsequent storms have greatly improved the facility at a fraction of the cost of a new stadium
  - Based on the high-level renovation concepts and program outlined herein, it is estimated that the cost to renovate Highmark Stadium would start at approximately $862 million, with the real potential to increase from that baseline.
- Additional considerations when evaluating renovation vs. new construction:
  - Infrastructure and incoming services – if these are sufficient to accommodate the needs of a renovated stadium, the project could see savings of 3-5% overall vs. new construction
  - Primary distribution and main systems in the building – if this is good (>10 years life remaining) and you are not changing layout drastically – then this is a saving (4-5%)
  - Secondary distribution – this is largely driven by accommodation layout and if you are changing this and/or re-doing ceilings and partitions – then you won't save anything here (likely cost more to try salvage anything)
  - Age of building and asbestos risk – a full abatement could run $20/SF across the suspect areas
  - Primary structure – if you need to change this, that's a big cost and design risk; It's one thing augmenting on the periphery, but changing bays/geometry etc. – will be a big portion of budget, particularly if any of the structural changes are below ground.
  - Water damage – if the core and fabric have damage – you'll need to strip back to the structure – the interior construction and fit out is 10-12% of your cost
  - MEP – typically runs at 25-30% (the higher end driven by low-voltage / ITAV etc.) – chances are if the infrastructure is old and one is moving things around (see points 2+3), you'll be spending as much as you would on new systems regardless; technology progresses quickly and it's likely that there is very little to salvage
  - Roof and enclosure – roof might be in good condition and you can keep or do basic repair/painting, but that's only 3-4% of the building. The cladding is likely wanting an upgrade, so depending what you can keep (maybe existing concrete or masonry), you could be allocating 5-10%. The proportion creeps up quickly if you start adding more panel and glazing with complex geometry – something a new building likely wants (smaller gestures could also tick the box if they are focused and meaningful)

- Foundations – likely good and providing you don't want to add more load to existing, you can probably save this cost. However, any changes to building footprint will be additional costs and there could be a premium for surcharge on adjacent and some expensive below groundwork to “tie” structure together. The anticipated changes are likely to lead to foundation modifications.
- GC/CM costs – complexity, phasing and schedule will be key determinants of the market price this – perception of risk too; renovation is a black box, so expect a premium for RFI’s and carry higher contingency for unforeseen costs

Appendix B – Cost Estimate

AECOM

Empire State Development - Buffalo Bills Stadium Analysis

New Build versus Refurbishment - Summary

October 10, 2021

Document Issue Sheet

Issue Nr.	Document	File Path	Issue Date	Parties Sent To	Prepared By	Checked By	Reviewed By
A	New Build versus Refurbishment - Summary - DRAFT	O:\BP\PCC\Sports\06 STADIUMS\007 Opportunities & Team Jobs\02 USA\Buffalo_bills	9/24/2021	AECOM	HIR	JL	JN / BL
B	New Build versus Refurbishment - Summary	O:\BP\PCC\Sports\06 STADIUMS\007 Opportunities & Team Jobs\02 USA\Buffalo_bills	10/4/2021	AECOM	HIR	JL	JN / BL
C	New Build versus Refurbishment - Summary	O:\BP\PCC\Sports\06 STADIUMS\007 Opportunities & Team Jobs\02 USA\Buffalo_bills	10/10/2021	AECOM	HIR	JL	JN / BL
D							
E							
F							

Project code = 60518110

Contents

Executive Summary

The following cost estimate represents an initial order of cost assessment to provide an indicative comparison of a New Build option versus a Refurbishment option. Certain assumptions have been made pertaining to the nature of the changes that might be realized during a refurbishment and allowances have been made for elements of a future design. The Qualitative Program Narrative provides insight into the expected features of either facility and the cost models include corresponding ROM allowances. With future and further design development, opportunities will exist to reduce such provision (e.g. structural design; internal fit-out; excavation "means-and-methods"). The provided summary represents the key program areas (zones) as well as the likely costs of construction (incl. CM allowances).

NEW STADIUM DEVELOPMENT (INCL. SITE)	**TOTAL ($) Construction**	**$/SF on GIA**
	(rounded)	
GIA *(Gross internal Area)*	*913,164 SF*	
GFA *(Gross floor area - bowl / spectator spaces)*	*500,638 SF*	
	1,413,802 SF	
Base Project:		
New 60,000 seat NFL football stadium	1,354,000,000	$ 958 / SF
Adjacent site works	incl.	
SUB-TOTAL	**1,354,000,000**	

EXISTING STADIUM RE-DEVELOPMENT (INCL. SITE)	**TOTAL ($) Construction**	**$/SF on GIA**
	(rounded)	
GIA *(Gross internal Area - new + refurbished)*	*925,000 SF*	*Estimated*
GFA *(Gross floor area - bowl / spectator spaces)*	*475,000 SF*	*Estimated*
	1,400,000 SF	
Base Project:		
Refurbished 60,000 seat football stadium	862,000,000	$ 616 / SF
Adjacent site works	incl.	
SUB-TOTAL	**862,000,000**	

1.0 Cost Summary - New Build vs. Refurbishment

The tables below represents a summary of the costs, on an elemental basis, including base construction costs representing the scheme specifics, as well as the cost of utilities, appurtenances, site improvements and recommended allowances for soft costs including contingencies. The impact of the schedule considerations and escalation have note been incorporated - values are compared at current day. The basis of the New Build model are Lumen Stadium, Levi's Stadium and Farmer's Field proposed stadium concept. The basis of the refurbishment model are the suggested improvements as listed within this report in conjunction with historic comparative elemental data. The delta column reflects the areas where one would anticipate any potential savings during a major refurbishment.

Base Construction		NEW BUILD			REFURBISHMENT			Likely % of new cost	DELTA			Comments on scope
		Refurb existing GFA (SF):		0	Refurb existing GFA (SF):		1,100,000 SF		Refurb existing GFA (SF):		1,100,000 SF	
		New / Expanded GFA (SF)		1,413,802 SF	New / Expanded GFA (SF)		300,000 SF		New / Expanded GFA (SF)		-1,113,802 SF	
		Gross Area (incl. bowl):		1,413,802 SF	Gross Area (incl. bowl):		1,400,000 SF		Gross Area (incl. bowl):		-13,802 SF	
		Capacity:		60,000 Seats	Capacity:		60,000 Seats		Capacity:		Seats	
		Gross Area (incl. bowl):		23.6 SF/seat	Gross Area (incl. bowl):		23.3 SF/seat		Gross Area (incl. bowl):		n/a	
A10	Foundations and substructure	2.6%	18.89	26,700,000	0.4%	1.91	2,670,000	10%	-2.3%	(17.00)	(24,030,000)	1) Expanded footprint; 2) enhancing existing to take new loads; 3) remedial work
A20	Below ground construction	1.7%	12.59	17,800,000	0.1%	0.64	890,000	5%	-1.6%	(11.96)	(16,910,000)	1) new services; 2) elevator depressions
A	**SUBSTRUCTURE**	**4%**	**31.48**	**44,500,000**	**0%**	**2.52**	**3,560,000**	**8.0%**	**-4%**	**-28.96**	**- 40,940,000**	
B10	Superstructure	17.1%	125.97	178,100,000	11.8%	55.97	78,364,000	44%	-9.6%	(70.54)	(99,736,000)	1) Expanded footprint; 2) re-building seating bowl; 3) modifying concourse
B20	Exterior Enclosure	4.6%	34.02	48,100,000	6.5%	30.92	43,290,000	90%	-0.5%	(3.40)	(4,810,000)	1) Replacement of existing to enhance; 2) Enclose expanded footprint; 3) refurb ex
B30	Roofing	1.4%	10.11	14,300,000	0.4%	2.04	2,860,000	20%	-1.1%	(8.09)	(11,440,000)	1) Remedial work; 2) Cover new footprint
B	**SHELL**	**23%**	**170.11**	**240,500,000**	**12%**	**88.07**	**124,514,000**	**51.8%**	**-11%**	**-82.04**	**- 115,986,000**	
C10	Interior Construction	6.8%	50.43	71,300,000	6.8%	32.09	44,919,000	63%	-2.5%	(18.66)	(26,381,000)	1) Refurb majority of existing spaces; 2) New expanded footprint
C20	Stairs	0.5%	3.75	5,300,000	0.4%	1.89	2,650,000	50%	-0.3%	(1.87)	(2,650,000)	1) Refurb existing and enhanced new circulation
C30	Interior Finishes	4.9%	35.93	50,800,000	6.1%	29.03	40,640,000	80%	-1.0%	(7.19)	(10,160,000)	1) Redecoration of entire building; 2) new spaces
C	**INTERIORS**	**12%**	**90.11**	**127,400,000**	**8%**	**62.39**	**88,209,000**	**69.2%**	**-4%**	**-27.72**	**- 39,191,000**	
D10	Conveying	0.7%	5.02	7,100,000	0.4%	2.03	2,840,000	40%	-0.4%	(3.01)	(4,260,000)	1) Upgrading end-of-life equipment; 2) Enhanced conveying; 3) revised circulation
D20	Plumbing	4.4%	32.75	46,300,000	4.9%	23.15	32,410,000	70%	-1.3%	(9.82)	(13,890,000)	1) New distribution; 2) replace old systems; 3) reinforcement of systems
D30	HVAC	5.0%	36.57	51,700,000	6.2%	29.54	41,360,000	80%	-1.0%	(7.31)	(10,340,000)	1) Upgrade end-of-life; 2) changed distribution; 3) increased capacities
D40	Fire protection	0.8%	5.94	8,400,000	0.6%	3.00	4,200,000	50%	-0.4%	(2.97)	(4,200,000)	1) changed layouts and new distribution
D50	Electrical	8.2%	60.48	85,500,000	9.0%	42.75	59,850,000	70%	-2.5%	(18.14)	(25,650,000)	1) New distribution/lighting ; 2) replace systems; 3) reinforcement for higher loads
D60	ICT / AV	2.4%	17.61	24,900,000	3.0%	14.23	19,920,000	80%	-0.5%	(3.52)	(4,980,000)	1) New technology upgrades; 2) new distribution
D	**SERVICES**	**21%**	**158.37**	**223,900,000**	**15%**	**113.58**	**160,580,000**	**71.7%**	**-6%**	**-44.79**	**- 63,320,000**	
E10	Equipment	3.4%	25.18	35,600,000	3.0%	13.99	19,580,000	55%	-1.5%	(11.33)	(16,020,000)	1) Upgrading of end-of-life items; 2) new spaces; 3) new installations
E20	Furnishings	2.7%	20.16	28,500,000	2.6%	12.21	17,100,000	60%	-1.1%	(8.06)	(11,400,000)	1) upgrading existing and new spaces; 2) enhancement of premium

1.0 Cost Summary - New Build vs. Refurbishment

		%	$/SF	TOTAL	%	$/SF	TOTAL	Likely % of new cost	%	$/SF	TOTAL	
E	**EQUIPMENT & FURNISHINGS**	**6.2%**	**45.34**	**64,100,000**	**3.5%**	**25.94**	**36,680,000**	**57.2%**	**-2.6%**	**-19.39**	**- 27,420,000**	
F10	Special Construction (Field)	0.2%	1.77	2,500,000	0.0%	0.07	100,000	4%	-0.2%	(1.70)	(2,400,000)	1) Minor work to field
F20	Selective Building Demolition	0.9%	6.30	8,907,000	1.1%	5.09	7,125,600	80%	-0.2%	(1.26)	(1,781,400)	1) Demolition of revised spaces; seating bowls; etc.
F	**SPECIAL CONSTRUCTION & DEMOLITION**	**1%**	**8.07**	**11,407,000**	**1%**	**5.11**	**7,225,600**	**63.3%**	**0%**	**-2.96**	**- 4,181,400**	
G10	Site Preparation / mass excavation	2.1%	15.14	21,400,000	2.6%	12.23	17,120,000	80%	-0.4%	(3.03)	(4,280,000)	1) Minor works to expanded footprint and revised infrastructure
G20	Site Improvements	0.8%	6.15	8,700,000	0.3%	1.55	2,175,000	25%	-0.6%	(4.62)	(6,525,000)	1) Upgrades to site and public realm
G30	Site Mechanical Utilities	0.2%	1.63	2,300,000	0.1%	0.66	920,000	40%	-0.1%	(0.98)	(1,380,000)	1) Infrastructure upgrades / remedial work
G40	Site Electrical Utilities	0.3%	1.91	2,700,000	0.2%	0.93	1,296,000	48%	-0.1%	(0.99)	(1,404,000)	1) Infrastructure upgrades / remedial work
G90	Other Site Construction	0.2%	1.27	1,800,000	0.1%	0.39	540,000	30%	-0.1%	(0.89)	(1,260,000)	1) Allowance for site enhancements
G	**SITEWORK AND UTILITIES**	**4%**	**26.1**	**36,900,000**	**2%**	**15.6**	**22,051,000**	**59.8%**	**-1%**	**-10.5**	**- 14,849,000**	
SUB-TOTAL ELEMENTAL COST BEFORE ALLOWANCES		**72%**	**529.57**	**748,707,000**	**43%**	**313.21**	**442,820,000**	**59.1%**	**-29%**	**-216.36**	**- 305,887,400**	
Contractor Allowances												
Z10	B&O Tax	0.0%	0.0	0	0.0%	0.00	0		0.0%	0.0	0	
Z12	Sales Tax - incl.	4.9%	0.0	0	4.9%	0.00	0		0.0%	0.0	0	
Z15	Phasing	0.0%	0.0	0	0.0%	0.00	0		0.0%	0.0	0	
Z20	Escalation	10.0%	53.0	74,870,700	10.0%	31.64	44,290,000		0.0%	(21.6)	(30,580,700)	
Z25	A/E Design Contingency	5.0%	26.5	37,500,000	10.0%	31.64	44,290,000		5.0%	4.8	6,790,000	
Z28	General Requirements	3.00%	18.3	25,900,000	6.00%	22.79	31,900,000		3.0%	4.2	6,000,000	1) higher allocation to temporary works and phasing
Z30	CM Staff, GC's, Insurances	6.00%	37.7	53,300,000	6.00%	24.14	33,800,000		0.0%	(13.8)	(19,500,000)	
Z32	Builders Risk / G&L / CDI	2.15%	14.4	20,300,000	2.15%	9.21	12,900,000		0.0%	(5.2)	(7,400,000)	
Z36	Construction Risk	3.50%	23.8	33,700,000	3.75%	16.36	22,900,000		0.3%	(7.6)	(10,800,000)	1) Refurbishment carries high risk for unforeseen
Z34	Construction Management fee	4.75%	33.5	47,300,000	4.75%	21.50	30,100,000		0.0%	(12.2)	(17,200,000)	
CONTRACTOR ALLOWANCES		**28.1%**	**207.15**	**292,870,700**	**21.1%**	**155.74**	**220,180,000**	**75.2%**	**-7.0%**	**-51.42**	**- 72,690,700**	
TOTAL ELEMENTAL COST FOR CONSTRUCTION		**100%**	**736.74**	**1,041,600,000**	**64%**	**468.95**	**663,000,000**	**63.7%**	**-36%**	**-267.77**	**- 378,578,100**	
Additional Professional Services Costs												
Z40	Allowance for soft costs	30.00%	221.0	312,480,000	30.00%	140.7	198,900,000		0.0%	(80.3)	(113,580,000)	1) Likely equivalent development costs; 2) Allowance would include any Public Right of way works
OWNER/OPERATOR DIRECT COSTS		**30.0%**	**221.02**	**312,480,000**	**19.1%**	**140.68**	**198,900,000**	**63.7%**	**-10.9%**	**-80.34**	**- 113,580,000**	
TOTAL PROJECT COST		**130%**	**957.7**	**1,354,000,000**	**83%**	**609.7**	**862,000,000**	**63.7%**	**-47%**	**-348.11**	**- 492,158,100**	

1.0 Cost Summary - New Build vs. Refurbishment

		%	$/SF	TOTAL	%	$/SF	TOTAL	Likely % of new cost	%	$/SF	TOTAL	
ALTERNATES												
The base costs as reflected above represent an out-of-town site (Orchard Park) with no roof over the field.												
The Alternates as reflected below estimate the potential ROM uplift to construct a roof over the field or future proof the base design/construction to add a roof in the future.												
The Alternates also include a ROM assessment of the cost premium of constructing the equivalent stadium in a down-town location - i.e. Orchard Park												
The following are all inclusive PROJECT costs (incl. escalation to 2024) - indicative ROM $												
ALT 1	Premium to construct with capability for future roof (out of town site - Orchard Park)	8%	330	108,970,000	*Note: The cost to complete the roof in the future may exceed the delta between the day-1 cost and the initial cost to future-proof the venue due to escalation (beyond 2024); changing market conditions; other design considerations and venue needs at that point in time.*							1) Impact on current design; 2) Over-sizing of foundations; 3) Over-sizing of adjacent roof structure (assuming field portion ties into portion over seats); 4) Building layout/design to accommodate vertical structure (likely in corners) - impact on seating bowl layout to optimize spans; 5) Impact on HVAC and lighting; 6) Strategy defers cost to future, which may have cash flow benefits in short-term, but carries risk and escalation cost into the future
ALT 1.2	Premium to construct full roof on day-1 (out of town site)	22%	903	297,960,000								1) Same technical and cost-driver issues as above; 2) Strategy does not defer cost to future, which may impact cash flow/funding in short-term, but mitigates risk and escalation cost into the future; 3) no demobilization issues and risk that same contractor available in the future to complete the work
ALT 2	Premium to construct in down-tow (South Park) city site (no roof)	25%	214	336,000,000								1) Noise and working hour constraints; 2) Site access and logistics; 3) Temporary service connections, utility upgrades and costs for new work; 4) Parking requirements for stadium locations; 5) Traffic mitigation measures; 6) Site clearance and demolitions;
ALT 2.1	Premium to construct in down-town city site (with capability for future roof)	33%	544	450,418,500	Note: a 5% premium has been allowed to construct the "roof-ready" stadium down-town in a more constrained environment							1) As above; 2) Refer impact of future roof on design
ALT 2.2	Premium to construct in down-town city site (with a full roof from day-1)	49%	1,117	663,756,000	Note: a 10% premium has been allowed to construct the "day-1" roof down-town in a more constrained environment							1) As above; 2) Refer impact of day-1 roof on design
	Note: *Above premium is related to construction only, not economic impact*											

2.0 Areas - New build (indicative)

Gross Internal Areas:

	Description / Program	Field Level	Concourse level	Club Level	Suites	Press	L5	TOTAL
1	Public Restrooms							52,828
2	Guest Services							4,125
3	Food Service							53,586
4	Concession Stands							39,578
5	Merchandise Sales							19,250
6	Home Team Locker Facilities							21,204
7	Coaches Locker Room							2,970
8	Training/Taping/Medical							7,104
9	Auxiliary Locker Rooms							11,160
10	Cheerleaders Locker Rooms							3,410
11	Visiting Team Locker Room							6,875
12	Star Dressing Rooms							2,400
13	Officials Dressing Room							2,040
14	Chain Crew Dressing Room							1,560
15	Press Box							16,934
16	Media Facilities							5,640
17	TV Truck Parking Area							13,629
18	Stadium Operations							6,168
19	Ticket Office							2,850
20	Building Staff Facilities							5,445
21	Building Operations							9,680
22	Janitorial							8,832
23	Grounds							7,260
24	Security							2,904
25	Playing Field							135,234
26	Storage							41,800
27	MEP							91,200
28	Dock/Staging							9,000
29	Concourse							218,334
30	Vertical Circulation							110,165
31								-
	TOTAL GIA (gross internal area)	**-**	**-**	**-**	**-**	**-**	**-**	**913,164**

2.0 Areas - New build (indicative)

Gross External Areas

	Description	Bowl	Seats
1	Spectator Seating	354,450	52,680
2	Suites (Lounges)	41,272	960
3	Loge Boxes	9,504	360
4	Club	95,412	6,000
5			-
6			-
8			-
	TOTAL Bowl AREAS / count	**500,638**	**60,000**
1	External Concourse (SOG)		
2	Outdoor Suite level		
3	GA Tunnels x 1		
4	Outer Stairs (4 flights to level 3)		-
	TOTAL EXTERNAL AREAS	**-**	**-**

Roof areas

Description	Area SF
Metal (press)	-
Concrete	-
Seating canopy	-
Canopy to plaza	-
Plant deck	15,000
total	15,000

Control Quantities **Ratio to GIA (sf)**

Functional units	-	Seats	
Number stories	5	Each	n/a
Gross Area (internal)	913,164	SF	
Gross Floor Area	1,413,802	SF	
Covered Area (ceiling)		SF	
Footprint Area		SF	
Gross wall Area	-	SF	
Retaining wall Area	-	SF	
Finished wall Area (external)	-	SF	
Windows or Glazing	-	SF	
Roof Area flat	19,233	SF	
Roof Area sloping	-	SF	
Roof Glazing Area	6,290	SF	
volume / function	-	CF	
Interior wall length	-	LF	
Interior wall Area (allowance)	-	SF	

3.1 Cost Buildup - Refurbishment ROM Assumptions

CSI	Description	Quantity	UoM	Rate	ROM $	Comment
	The following scope and associated costs are indicative requirements that have been identified from the initial site and venue assessment undertaken by AECOM. While not exhaustive, they serve to provide the basis of an indicative ROM cost assessment for a refurbishment scheme and help to inform the likely relative elemental spend that could be realized during a renovation. It should be noted that refurbishment schemes on large complex stadia come with inherent risk and it is very likely that there will be some unforeseen issues that will require additional funding or reduction of scope to fund such work. A 10% contingency has been included within the construction budget as part of this initial ROM assessment.					
A	**MOVE MAIN CONCOURSE**	Estimate		**Area =**	**415,500 SF**	
	Main concourse is located below grade, resulting in a fan experience inconsistent with other venues in the league. Also, Premium level is currently accessed from grade level; however this configuration introduces excess capacity to the premium level while restricting access to the main concourse to relatively few, narrow staircases - the following requirements and allowances could be considered:					
	1) Move main concourse to grade level and expand to accommodate increased traffic	300,000	SF	30	9,000,000	
	2) Shift premium concourse and seating to existing lower level main concourse location - allow minor modifications for circulation; access/egress; spectator services	82,500	SF	55	4,537,500	*structural mods.*
	3) Reconfiguration of lower seating bowl for premium seating (new seats and minor aisle modifications; painting; making good)	33,000	SF	65	2,145,000	*say 5000 to 6000 club seats*
	4) Reduced occupancy demand is better accommodated by existing configuration of lower concourse levels - allow for minor layout modifications and decoration work	82,500	SF	180	14,850,000	*fit-out; interior constr.*
	5) With main concourse at grade, perimeter could be expanded to provide adequate circulation and amenities for general seating patrons	1	LS	4,000,000	4,000,000	*allowance*
	6) Allowance for new conveying	1	LS	700,000	700,000	*Allowance*

3.1 Cost Buildup - Refurbishment ROM Assumptions

CSI	Description	Quantity	UoM	Rate	ROM $	Comment
	7) Allowance for associated MEP work and BWIC; general diversions; minor demolition; horizontal infrastructure augmentation	1	LS	2,500,000	2,500,000	*allowance*
	Sub-total direct construction cost				**$ 37,732,500**	*$ 91 / SF*

3.1 Cost Buildup - Refurbishment ROM Assumptions

CSI	Description	Quantity	UoM	Rate	ROM $	Comment
B	**IMPROVE FIELD LEVEL ACCESS**			**Area =**	**75,000 SF**	
	Field level vehicular access is limited to single tunnel at east end of stadium; presents logistical issues for football operations as well as hosting non-football events such as concerts - the following requirements and allowances could be considered:					
	1) Rebuild east endzone seating to provide increased access to field, improved team locker rooms and training facilities;	35,000	SF	275	9,625,000	
	2) Extra for accommodation re-build	40,000	SF	250	10,000,000	
	3) Allow for multiple field access points in other areas of the stadium, requiring further reconstruction and reconfiguration of lower bowl seating structure - demolition / diversions	1	LS	1,000,000	1,000,000	*Allowance*
	4) Re-construction of bowl / reconfiguration	1	LS	5,000,000	5,000,000	*Allowance*
	5) Allowance for new conveying	1	LS	1,000,000	1,000,000	*Allowance*
	6) Allowance for associated MEP work and BWIC; general diversions; minor demolition; horizonta6 infrastructure augmentation	1	LS	1,500,000	1,500,000	*allowance*
	Sub-total direct construction cost				**$ 28,125,000**	*$ 375 / SF*
C	**UPPER DECK IMPROVEMENTS**			**Area =**	**280,000 SF**	
	Upper deck has extensive deterioration and pending confirmation of applicable engineering assessment is assumed to be near the end of usable life span. Any consideration of renovation would likely to require a complete replacement of this component - the following requirements and allowances could be considered:					

3.1 Cost Buildup - Refurbishment ROM Assumptions

CSI	Description	Quantity	UoM	Rate	ROM $	Comment
	1) In conjunction with concourse reconfiguration and associated renovation strategies noted previously, a new upper seating tier and accompanying circulation would be provided to enhance circulation, accessibility, egress, fan amenities, and increase seating requirements - allow for demolition; foundation enhancement; new vertical structure; new terracing; new seating; new MEP and ancillary work	120,000	SF	400	48,000,000	*Demolition and re-build of seating*
	2) Reconstruction and/or renovation will require extensive rebuild of core stadium elements below the upper deck; any solution considering this approach may require a phased replacement strategy to minimize any potential disruption - allow replacement of associated amenities and re-construction of concourse services	160,000	SF	275	44,000,000	*Demolition and re-build of associated concourse and amenities*
	3) Associated allowance for MEP infrastructure services including diversion; reinforcement and new provisions	1	LS	3,000,000	3,000,000	*Allowance*
	4) Allowance for new conveying	1	LS	1,000,000	1,000,000	*Allowance*
	Sub-total direct construction cost				**$ 96,000,000**	*$ 343 / SF*
D	**FOOD SERVICES OFFERING**			**Area =**	**55,000 SF**	
	Existing stadium does not include contemporary food service/catering facilities; majority of catering is serviced from satellite facilities built outside the stadium footprint, requiring product to be prepared off-site and transported to stadium to be distributed to final sale/distribution points. This condition while functional is inconsistent with other venues across the league.					

3.1 Cost Buildup - Refurbishment ROM Assumptions

CSI	Description	Quantity	UoM	Rate	ROM $	Comment
	1) Develop expanded accommodation including modern food services/catering facilities within building footprint; the specific location would be subject to development of redevelopment plans.	20,000	SF	650	13,000,000	*Allow for expanded building envelope and tie-in to existing*
	2) Allowance for refurbishment within existing footprint	35,000	SF	250	8,750,000	*Refurb of spaces*
	3) Extra for food services equipment and specialist fit-out of kitchen and commissary	1	LS	10,000,000	10,000,000	*New kitchen*
	Sub-total direct construction cost				**$ 31,750,000**	*$ 577 / SF*
E	**IMPROVE CLUB EXPERIENCE**			**Area =**	**40,000 SF**	
	Existing southeast and southwest corner, enclosed club spaces, while providing climate controlled space for premium patrons, do not provide game-day atmosphere desired by patrons and ownership; these seats are currently not fully sold, resulting in increased effort by sales team to sell individual gameday tickets - the following requirements and allowances could be considered:					
	1) Pending other improvements noted herein, retain majority of existing structure, but modernize and rebuild glass wall with view to playing surface to allow partitions to be retracted and allowing the outdoor stadium experience indoors, while still offering partial climate controlled environment	15,120	VSF	150	2,268,000	*Allowance; reconstruct secondary steel; demolition of existing; re-waterproof*
	2) Refinish associated premium spaces including decoration work; bathroom upgrades; new millwork and joinery; IT/AV upgrades	40,000	SF	275	11,000,000	*Allowance*
	3) Extra for food services equipment associated with premium offer	1	LS	2,500,000	2,500,000	
	4) Allowance for new conveying	1	LS	470,000	470,000	*Allowance*
	Sub-total direct construction cost				**$ 16,238,000**	*$ 406 / SF*

3.1 Cost Buildup - Refurbishment ROM Assumptions

CSI	Description	Quantity	UoM	Rate	ROM $	Comment
F	**CODE / ADA / MEP IMPROVEMENTS**			**Area =**	**4,444 SF**	
	At this point, it is difficult to quantify the potential cost of renovation; while there are certainly code, ADA and mechanical system improvements required to update the stadium - the following allowances could be considered:					
	1) General MEP code upgrades	1	LS	20,000,000	20,000,000	*Allowance*
	2) General ADA modifications	1	LS	10,000,000	10,000,000	*Allowance*
	3) Deferred maintenance work	1	LS	14,000,000	14,000,000	*Allowance*
	4) Supplementary Demolition and excavation	1	LS	13,420,000	13,420,000	*Allowance*
	5) Upgraded IT/AV infrastructure, including new large video boards; control systems and distribution	1	LS	30,000,000	30,000,000	*Allowance*
	6) Allowance for outdoor terrace ambient and/or in-slab heating system, including distribution back to infrastructure and upgrading with new infrastructure and modifications to MEP accommodation spaces (i.e. plant rooms etc.)	1	LS	7,000,000	7,000,000	*Allowance*
	7) Allowance for decoration work; fit-out upgrades; making good; remedial aesthetic repairs; etc. to residual building	800,000	SF	93.0	74,400,000	*Allowance*
	8) Allowance for team facilities including upgrades and expansion	50,000	SF	475	23,750,000	*Allowance*
	9) Allowance for re-skinning of facade and envelope augmentation; including demolition; new secondary steel	259,000	SF	156	40,404,000	*Allowance*
	Sub-total direct construction cost				**$232,974,000**	*$ / SF*
	TOTAL indicative direct cost				**$442,820,000**	
	Allowance for Contractor mark-ups				220,180,000	
	Total construction cost				**$663,000,000**	
	Allowance for Developer Soft Costs	30	%		198,900,000	
	Total Project Cost				**$862,000,000**	

3.2 Cost Buildup - ROM assessment of Alternates

CSI	Description	Quantity	UoM	Rate	ROM $	Comment
	The Alternates as reflected below estimate the potential ROM uplift to construct a roof over the field or future proof the base design/construction to add a roof in the future. The costs are not based on a specific design, but rather a basic parametric assessment of the fundamental building elements needed to construct a functional roof over the open field area. It should be noted that once a design is developed, this baseline cost could vary.					
ALT 1	**ROOF ALTERNATE - FUTURE OPTION**			**Area =**	**330,000 SF**	
	Key considerations: 1) Impact on current design (incl. additional design work cost); 2) Over-sizing of foundations; 3) Over-sizing of adjacent roof structure (assuming field portion ties into portion over seats); 4) Building layout/design to accommodate vertical structure (likely in corners) - impact on seating bowl layout to optimize spans; 5) Impact on HVAC and lighting; 6) Strategy defers cost to future, which may have cash flow benefits in short-term, but carries risk and escalation cost into the future					
	1) Design work for roof and related structure, services and architectural impact - design needs to consider the ability to have an appropriate "interface" between the initial and future elements. The biggest impact is likely structural because the load transfers and strategy will likely vary between the two states (i.e. prior to roof and after roof)	1	LS	2,400,500	2,400,500	*Allow 10% on construction cost below*
	2) Over-sizing of foundations, plus additional foundations potentially - depends on design); assumes that long span trusses spring from 4 main corners;	4	EA	5,000,000	20,000,000	*Allowance*
	2.1) Extra for secondary bracing or tie-downs may be required for central portion (future roof over field); additional foundations for central roof could be added in the future, but it depends whether their location will impact accommodation in the end-zones or not	2	EA	3,000,000	6,000,000	*Allowance*

3.2 Cost Buildup - ROM assessment of Alternates

CSI	Description	Quantity	UoM	Rate	ROM $	Comment
	2.2) Extra for additional foundations for central roof could be added in the future, but it depends whether their location will impact accommodation in the end-zones or not; some re-arrangement of layouts could be achieved to mitigate future impact	-	EA	-	-	*Defer to future*
	3) Modifications (up-sizing) to adjacent roof structure to receive central roof in the future); uplift to two leaves of approximately 115,000 SF each (assuming 10lbs/SF of added steel plus 20% for connections)	1,380	T	5,000	6,900,000	*Allowance*
	4) An optimized roof design would seek to minimize the long span (assuming this is base approach) and therefore corner structure may impact bowl and accommodation design; may not be a huge cost driver, but could impact certain design preferences	4	EA	3,000,000	12,000,000	*Allowance*
	5) A future enclosed roof will impact the lighting design for the field and bowl and will also impact the air-flow over the field and portions of the seating bowl; in the initial build, one will need to include the accommodation space for future equipment and/or include some additional or larger capacity equipment in the initial build	1	LS	5,000,000	5,000,000	*Allowance*
	6) General code impacts - could be modifications related to fire and life safety - modifications for access/egress and places of safety	1	LS	8,000,000	8,000,000	*Allowance*
	Sub-total direct construction cost				**$ 60,300,500**	*$ 183 / SF*
	Allowance for Contractor mark-ups	39	%		23,520,000	
	Total construction cost				**$ 83,820,500**	*$ 254 / SF*
	Allowance for Developer Soft Costs	30	%		25,150,000	
	Total Project Cost - for ALT 1				**$108,970,000**	*$ 330 / SF*

3.2 Cost Buildup - ROM assessment of Alternates

CSI	Description	Quantity	UoM	Rate	ROM $	Comment
ALT 1.2	**ROOF ALTERNATE - DAY-1 BUILD**			**Area =**	**330,000 SF**	
	1) Same technical and cost-driver issues as above; 2) Strategy does not defer cost to future, which may impact cash flow/funding in short-term, but mitigates risk and escalation cost into the future; 3) no demobilization issues and risk that same contractor available in the future to complete the work					
	1) Base upgrades to building (direct cost) as per phased approach; excl. design (re-calculated e/w)	1	LS	11,005,000	11,005,000	
	2) Additional foundations for central roof; impact on accommodation in the end-zones factored into design at outset	4	EA	10,000,000	40,000,000	*Allowance*
	3) Modifications (up-sizing) to adjacent roof structure to receive central roof); uplift to two leaves of approximately 115,000 SF each (assuming 10lbs/SF of added steel plus 20% for connections)	1,380	T	5,000	6,900,000	*Allowance*
	4) Central roof structure of approximately 330,000 SF (assuming 30lbs/SF of added steel plus 20% for connections)	5,940	T	5,000	29,700,000	*Allowance*
	4.1) Central roof cladding secondary/tertiary steel based on approximately 330,000 SF (assuming 12lbs/SF of steel plus 20% for connections)	2,376	T	5,000	11,880,000	*Allowance*
	4.2) Central roof cladding of approximately 330,000 SF - assume fabric covering (PTFE)	330,000	SF	150	49,500,000	*Allowance*
	5) An optimized roof design would seek to minimize the long span (assuming this is base approach) and therefore corner structure may impact bowl and accommodation design; But would be factored in from the outset, so no premium	-	EA	-	-	*N/A*

3.2 Cost Buildup - ROM assessment of Alternates

CSI	Description	Quantity	UoM	Rate	ROM $	Comment
	5) A future enclosed roof will impact the lighting design for the field and bowl and will also impact the air-flow over the field and portions of the seating bowl; in the initial build, one will need to include the accommodation space for equipment and include some additional or larger capacity equipment in the initial build, plus the additional distribution	1	LS	10,000,000	10,000,000	*Allowance*
	6) General code impacts - building designed for roof from day-1, so no changes needed	-	LS	8,000,000	-	*Allowance*
	7) General MEP code upgrades - N/A	-	LS	20,000,000	-	*Allowance*
	8) Design work for roof and related structure, services and architectural impact - included in day-1	1	LS	5,902,015	5,902,015	*Allow 10% on construction cost above*
	Sub-total direct construction cost				**$164,887,015**	*$ 500 / SF*
	Allowance for Contractor mark-ups	39	%		64,310,000	
	Total construction cost				**$229,197,015**	*$ 695 / SF*
	Allowance for Developer Soft Costs	30	%		68,760,000	
	Total Project Cost - for ALT 2				**$297,960,000**	*$ 903 / SF*

3.2 Cost Buildup - ROM assessment of Alternates

CSI	Description	Quantity	UoM	Rate	ROM $	Comment
ALT 2	**DOWN-TOWN CITY SITE (SOUTH PARK)**			**Area =**	**1,568,160 SF**	
	Primary considerations including: 1) Noise and working hour constraints; 2) Site access and logistics; 3) Temporary service connections and costs; 4) City code compliance during construction; 5) Traffic and transportation issues including parking and public right of way improvements (requires further analysis and assessment)					
	1.1) Noise constraints will directly impact the types of machinery permissible on site - e.g. driven piles may be too loud compared to auger-type piles - this could be resolved during design, but auger piles could carry a slight premium (but technically may preferred in any event); assume 10% increase on deep foundations	1	LS	2,136,000	2,136,000	
	1.2) Noise constraints will directly impact the times of day when a certain decibel limit may not be exceeded and thus may limit the ability to work after hours - depending on whether a certain schedule is being targeted or not, shift work may not be required. Assuming it is, the outcome is likely that the day-work schedule will be prolongated - for certain elements, offset by a reduction on premium shift labor. Assuming this adds 4 months to the overall schedule, there is a net add.	1	LS	8,065,000	8,065,000	
	2) The location of the site may have implications in terms of physical access; narrow streets; minimal lay-down area; one-way roads; limited space for storage; etc. - such impact could have a 10-15% increase on a CM's General Requirements cost	1	LS	3,885,000	3,885,000	*Assume higher impact 15%*

3.2 Cost Buildup - ROM assessment of Alternates

CSI	Description	Quantity	UoM	Rate	ROM $	Comment
	3) The location of the site may have implications in terms of utilities and the need to either reinforce services; divert services and bring in new services; The ability to bring in temporary services may also be impacted by adjacent properties and the location of connection points. However, compared to an out-of-town site, these costs be may be equivalent (in some instances) to what is required elsewhere - a detailed comparison of major utilities has been completed (e/w) and it appears that the down-town site would require significantly more work based on initial assessments conducted by others	1	LS	29,918,903	29,918,903	*Note: this is the uplift or premium over the out-of-town site*
	4) Primary considerations including: parking and spectator / staffing movements; transportation infrastructure including roads, highways, pedestrian walkways; intersections; clearance and demolitions work and utilities (refer Section 3.2) - initial studies by others suggest the following requirements:	1	LS	141,931,764	141,931,764	*Note: this is the uplift or premium over the out-of-town site*
	Sub-total direct construction cost				**$185,936,667**	*$ 119 / SF*
	Allowance for Contractor mark-ups	39	%		72,520,000	
	Total construction cost				**$258,456,667**	*$ 165 / SF*
	Allowance for Developer Soft Costs	30	%		77,540,000	
	Total Project Cost - for ALT 2				**$336,000,000**	*$ 214 / SF*

3.3 Cost Buildup - ROM assessment of utility work

CSI	Description	Quantity	UoM	Rate	ROM $	Comment
	The following high level assessments consider the varying traffic and transportation needs of an "out-of-town" site (Orchard Park) versus a "down town" site (South Park).					
A	**DOWN-TOWN CITY SITE (SOUTH PARK)**			**Area =**	**1,413,802 SF**	
	The location of the site may have implications in terms of utilities and the need to either reinforce services; divert services and bring in new services; The ability to bring in temporary services may also be impacted by adjacent properties and the location of connection points. The following has been considered:					
	Water					
	1) services diversions- existing 48" transmission line on Fulton is located right under the proposed stadium footprint and would need to be relocated	2,500	LF	1,008	2,520,000	
	2) Three private domestic, hydrant and fire suppression loops would be built around entire stadium (total ± 11,000 feet).	11,000	LF	250	2,750,000	
	2.1) Extra for hydrants	31	EA	8,000	251,429	
	2.2) Emergency power generator for fire pump	1	LS	600,000	600,000	
	3) Allow for permits; connections; code administrative requirements	1	LS	153,036	153,036	*allow 2.5%*
	Sanitary sewer					
	4) Allow for flow offsets and fixed fee payments (mitigation fees) for additional peak flow have not been traditionally been required by the BSA - calculated at capacity of detention tank	1	LS	1,102,328	1,102,328	
	5) Allow to re-align existing 60" storm relief sewer	2,500	LF	750	1,875,000	
	6) Potential cost of detention tank - 210,000 gallons (33,714 CF equiv.)	1	LS	8,000,000	8,000,000	

3.3 Cost Buildup - ROM assessment of utility work

CSI	Description	Quantity	UoM	Rate	ROM $	Comment
	7) Allowance for general and miscellaneous sewer diversions, capping and making good	1	LS	500,000	500,000	*Allowance*
	Storm Drainage					
	8) Allowance for stormwater permit and associated mitigation measures - design work	1	LS	250,000	250,000	
	9) Allowance for on-site harvesting	1	LS	500,000	500,000	
	10) Allowance for green roofs	100,000	SF	40	4,000,000	
	11) Allowance for detention holding tank for storm water - per flow regulation requirements	1	LS	6,000,000	6,000,000	
	11.1) Extra for distribution to river outflow	2,000	LF	750	1,500,000	
	Gas					
	12) Enhance NFG distribution capacity - TBC	1	LS	-	-	
	13) Allow to re-align 12" NFG gas pipelines	2,500	LF	280	700,000	
	14) Allowance for general and miscellaneous gas line diversions, capping and making good	1	LS	550,000	550,000	*Allowance*
	15) Allow for new 4" to 6" new gas service and dual metering	500	LF	160	80,000	
	Power					
	16) Allow for existing substation to be relocated (Note: further study is required to determine if there is sufficient capacity in the overall grid)	1	LS	8,000,000	8,000,000	*Allowance*
	17) Allow for existing primary power facilities on Perry Street to be relocated to accommodate the proposed stadium	1	LS	1,200,000	1,200,000	*Allowance*
	17.1) Allow for Perry Street new street lighting.	70	EA	15,000	1,050,000	
	18) Allowance for general and miscellaneous electrical line diversions, capping and making good	1	LS	800,000	800,000	*Allowance*
	19) Allowance for new medium voltage distribution to stadium	1	LS	1,200,000	1,200,000	*Allowance*

3.3 Cost Buildup - ROM assessment of utility work

CSI	Description	Quantity	UoM	Rate	ROM $	Comment
	Communications					
	20) No major upgrades or improvements anticipated - allow for typical connections	1	LS	150,000	150,000	
	Sub-total direct construction cost				**$ 43,731,793**	*$ 31 / SF*
	Allowance for Contractor mark-ups	39	%		17,060,000	
	Total construction cost				**$ 60,791,793**	*$ 43 / SF*
	Allowance for Developer Soft Costs	30	%		18,240,000	
	Total Project Cost				**$ 79,030,000**	*$ 56 / SF*
B	**OUT OF TOWN SITE (ORCHARD PARK)**			**Area =**	**1,413,802 SF**	
	The location of the site may have implications in terms of utilities and the need to either reinforce services; divert services and bring in new services; The ability to bring in temporary services may also be impacted by adjacent properties and the location of connection points. The following has been considered:					
	Water					
	1) Allowance for booster pumps for domestic water systems (DWS) and fire suppression	1	LS	300,000	300,000	
	1.1) Extra to extend 24" service from 42" main to site	1,600	LF	190	304,000	
	1.2) Allow for secondary services - TBC	1,500	LF	190	285,000	*allow 1500LF*
	2) Allow for domestic, hydrant and fire suppression loops would be built around entire stadium (total ± 11,000 feet).	11,000	LF	250	2,750,000	
	2.1) Extra for hydrants	31	EA	8,000	251,429	
	2.2) Emergency power generator for fire pump	1	LS	600,000	600,000	

3.3 Cost Buildup - ROM assessment of utility work

CSI	Description	Quantity	UoM	Rate	ROM $	Comment
	2.3) Allow to extend combination dws and fp line to new pumping facility on site - assume 8"	1,200	LS	140	168,000	
	3) Allow for permits; connections; code administrative requirements	1	LS	116,461	116,461	*allow 2.5%*
	Sanitary sewer					
	4) Allow for sanitary extension permits and design work	1	LS	250,000	250,000	
	5.1) Allow to re-inforce 8" service lines	1,500	LF	180	270,000	*Allowance*
	5.2) Allow to re-inforce 10" service lines	1,500	LF	200	300,000	*Allowance*
	6) Allowance for new gravity sewer and/or pump station and force main would be required to connect into the existing ECSD No. 3 Smokes Creek west trunk sewer	3,400	LF	240	816,000	
	6.1) Extra to connect into existing stadium detention system - assume 10" dia pipework	1,850	LF	200	370,000	*Allowance*
	7) Allowance for general and miscellaneous sewer diversions, capping and making good	1	LS	250,000	250,000	*Allowance*
	Storm Drainage					
	8) Allowance for stormwater permit and associated mitigation measures - design work	1	LS	250,000	250,000	
	9) Allowance for on-site harvesting	1	LS	500,000	500,000	
	10) Allowance for green roofs	100,000	SF	40	4,000,000	
	11) Allowance for detention holding tank for storm water - per flow regulation requirements	-	LS	5,000,000	-	
	12) Allow for surface water run-off management and mitigation	1	LS	750,000	750,000	
	Gas					
	12) Enhance NFG distribution capacity - TBC	1	LS	-	-	
	13) Allow to re-align 12" NFG gas pipelines		LF	280	-	*NIC*

3.3 Cost Buildup - ROM assessment of utility work

CSI	Description	Quantity	UoM	Rate	ROM $	Comment
	14) Allowance for general and miscellaneous gas line diversions, capping and making good	1	LS	150,000	150,000	*Allowance*
	15) Allow for new 4" to 6" new gas service and dual metering	200	LF	160	32,000	
	Power					
	16) Allow for existing New Era Field electrical substation to be re-used with some modifications to conform with the new stadium design and maintain the existing stadium and training facilities in operation.	1	LS	1,000,000	1,000,000	*Allowance*
	Communications					
	17) No major upgrades or improvements anticipated - allow for typical connections	1	LS	100,000	100,000	
	Sub-total direct construction cost				**$ 13,812,889**	*$ 10 / SF*
	Allowance for Contractor mark-ups	39	%		5,390,000	
	Total construction cost				**$ 19,202,889**	*$ 14 / SF*
	Allowance for Developer Soft Costs	30	%		5,760,000	
	Total Project Cost				**$ 24,960,000**	*$ 18 / SF*

3.4 Cost Buildup - ROM assessment of parking / transport needs

CSI	Description	Quantity	UoM	Rate	ROM $	Comment
	The following high level assessments consider the varying traffic and transportation needs of an "out-of-town" site (Orchard Park) versus a "down town" site (South Park).					
A	**DOWN-TOWN CITY SITE (SOUTH PARK)**			**Area =**	**1,568,160 SF** 36 ACRE	
	Primary considerations including: parking and spectator / staffing movements; transportation infrastructure including roads, highways, pedestrian walkways; intersections; clearance and demolitions work and utilities (refer Section 3.2) - initial studies by others suggest the following requirements:					
	Site Clearance and demolition work					
	Allowance for demolition of existing buildings on site, including removal of shallow foundations and trenching, small power and equipment pads and associated services and cart off site complete including:					
	Open site	-				
	General site clearance and level	36	AC	22,000	792,000	
	Building structures					
	Domestic houses / dwellings	74,800	SF	15	1,122,000	
	Multi-story apartments / buildings	113,000	SF	20	2,260,000	
	Industrial buildings	65,000	SF	40	2,600,000	
	Civic buildings	262,000	SF	35	9,170,000	
	Asbestos abatement					
	Extra for asbestos abatement to above buildings - assume 75%	386,100	SF	25	9,652,500	
	Extra for asbestos abatement to above site areas and residual brownfields sites - assume 15%	341,232	SF	10	3,412,320	
	Roadways and servitudes					

3.4 Cost Buildup - ROM assessment of parking / transport needs

CSI	Description	Quantity	UoM	Rate	ROM $	Comment
	Allowance for demolition of existing road and highways on site, including removal of shallow foundations, curbs and trenching, small power and associated services (not included elsewhere) and cart off site complete including:					
	East / West Streets	238,739	SF	15	3,581,085	
	North / South Streets	86,688	SF	15	1,300,320	
	Miscellaneous hardscape	25,740	SF	12	308,880	
	Hidden services					
	Allowance for removal of non-visible underground structures associated with abandoned services	1	LS	2,500,000	2,500,000	*Allowance*
	Linear structures					
	Allowance for removal of small fences, walls, curbs and general linear structures; dispose off-site	16,800	LF	30	504,000	
	Services diversions - refer utility section 3.2		LS		-	
	Vegetation					
	Tree removal	600	EA	500	300,000	
	Miscellaneous landscape	1	LS	1,460,000	1,460,000	
	Parking					
	1) Approximate number of additional spaces required in structured garages - allow 1,500 spaces off-site	525,000	SF	120	63,000,000	
	2) Approximate number of additional spaces required in grade parking - assume remedial work and minor upgrades to existing facilities - allow 3,000 spaces	1,050,000	SF	15	15,750,000	*upgrades to existing*
	Note: Area of parking based on 350SF per space for purposes of calculation *Note: The allowance assumes on grade parking with surface water management; site lighting; curbing; signage; fencing and landscaping*					
	Transportation and traffic infrastructure					

3.4 Cost Buildup - ROM assessment of parking / transport needs

CSI	Description	Quantity	UoM	Rate	ROM $	Comment
	AECOM has considered some of the potential improvement opportunities (OPP's) as suggested in 2019 studies (by others) and provided additional / alternative commentary and a ROM pricing assessment:					
	OPP 1: Provide direct connection of Elm/Oak south over/under I-190 to Scott Street.·					
	1) Providing a direct connection over the I-190 to Scott Street is not feasible because the I-190 is already elevated. From a profile standpoint as well as the local topography, it cannot be accomplished.				Note	
	1.1) Going under the I-190 would mean shifting the alignment to the east in order to avoid the new train station and the Buffalo News building. This would place that section of Elm/Oak very close to Michigan Street.				Note	
	Alternative / additional commentary: 1.2) Instead of trying to extend Elm Street and Oak Street, divert some of the traffic to local roads with improvements, keeping the traffic north of I-190 to use those lots on that side and avoid the congestion on the south side of I-190. Or encourage the use of lots just south of I-190. This could be done by:				Note	
	1.2.1) Using the existing Oak Street section but allow a double left turn onto Seneca Street (330LF)	7,000	SF	180	1,260,000	
	1.2.2) Provide a dedicated lane from I-190 south onto to Seneca to meet the I-190 northbound off-ramp. It appears the bridge is long enough to accomplish this (2.3miles)	145,728	SF	38	5,537,664	
	1.2.3) Stripe Michigan Street as one lane with a center two-way left turn lane but allow traffic in the center left turn lane on event days. This gets traffic to valuable parking lots around the Arena.	3,000	LF	5.00	15,000	

3.4 Cost Buildup - ROM assessment of parking / transport needs

CSI	Description	Quantity	UoM	Rate	ROM $	Comment
	1.2.4) If this change is made, outbound vehicles could take Michigan to Swan to get to Elm and/or continue on Michigan to get to Route 33.	-				Note
	OPP 2: Investigate opportunity to reconfigure Louisiana / Hamburg interchanges to provide direct ramp access to/from stadium circulator roadway.·					
	2.1) Close Scott Street on game days. This would be an operational cost in conjunction with local law enforcement - allow capitalized budget to fund	1	LS	250,000	250,000	
	2.2) Signalize Scott Street and Louisiana Street with a MIOVISION signal.	1	LS	230,000	230,000	
	2.3) If the buildings along Louisiana are being demolished, provide an additional lane southbound from I-190 off ramp to South Park (electrical in right-of-way relocated as needed by others)	11,844	SF	45	532,980	
	2.4) Stripe Louisiana for two lanes northbound from South Park to I190 off ramp – some road widening along the length - +/- 500LF	6,000	SF	35	210,000	
	2.5) Widen the I-190 bridge over Hamburg Street to accommodate four full lanes and widen Hamburg Street to I-190 from South Park. Allow to relocate power pole over – (at utilities expense) + land grab to accommodate width	1	LS	6,170,000	6,170,000	
	2.6) Re. MIOVISION camera to (1) control intersections and (2) tied back to Nittec to alert VMU - allow fiber upgrade +/- 1 mile back to Nittec Operations building	5,280	LF	18	95,040	
	OPP 3: Utilize stadium circulator roadway to provide non-event connections of roadway network·					

3.4 Cost Buildup - ROM assessment of parking / transport needs

CSI	Description	Quantity	UoM	Rate	ROM $	Comment
	3) This would like involved the re-routing of Perry street - Re-locate to north between Louisiana and Hamburg +/- 1,600LF; allow for enhancements to pedestrian environment and public realm	62,400	SF	60	3,744,000	
	OPP 4: Investigate major improvements to the I-190 & Elm/Oak interchange to address mixing issues with Route 5 and concentration of traffic to Swan and Seneca Streets.·					
	Refer opportunity 1 described above				Note	
	OPP 5: Explore construction of new parallel ramp connection from I-190 NB to Michigan Avenue.·					*peace bridge to I190*
	5.1) Based on this proposal, a ramp could be built to connect I-190 to Michigan. However, with the above changes, the existing ramp can be used to get to the same location. If this new ramp is built, it would mean traffic would take a left turn onto Michigan Street which is a difficult unless signalized and the signal would delay traffic flow. – Redundant and at odds with prior improvement				Note	
	OPP 6: Consider use of reversible lanes for portions of South Park Avenue and Louisiana Street on gamedays.·					
	6.1) Refer above for Louisiana Street improvements				Note	
	6.2) From the lift bridge to Smith Street, eliminate parking and stripe South Park as three lanes with narrow shoulders; resurface and stripe	55,080	SF	5.00	275,400	

3.4 Cost Buildup - ROM assessment of parking / transport needs

CSI	Description	Quantity	UoM	Rate	ROM $	Comment
	6.3) On event days, parking on South Park should be prohibited. Allow traffic to use the parking lane as a driving lane - This would be an operational cost in conjunction with local law enforcement - allow capitalized budget to fund	1	LS	335,000	335,000	
	OPP 7: Explore opportunity to relocate I-190 Smith Street interchange to provide direct egress from South Park to I-190.·					
	Note: To provide a direction connection from South Park to I-190, 2 ½ blocks of buildings would need to be demolished - Alternatively:				Note	
	7.1) Widen the Smith Street on-ramp to two lanes. Transition to one lane before the I-190 - +/- 700LF; includes excavation of embankment; concrete elevated foundations; re-construct berm; build road and barriers etc,	14,700	SF	170.00	2,499,000	*After Fulton*
	7.2) Stripe Smith Street for two lanes with a narrow shoulder on the west and a wide enough shoulder to drive on for the east. This shoulder can be used for parking on non-event days. This is from the I-190 off-ramp back to South Park.	16,224	SF	5.00	81,120	
	7.3) Provide a MIOVISION signal at Elk (connect via fiber back to Nittec ideally - can operate its control function - "off-grid"	11,458	LF	18	206,237	
	7.4) Provide a left turn signal head at South Park and Smith with a left turn arrow. (the signal will need to be upgraded to a MIOVISION)	1	LS	250,000	250,000	
	OPP 8: Investigate potential to construct proposed Tifft Street Connector (included in Southtowns Connector/Buffalo Outer Harbor FEIS), which would provide another means of access from Route 5, considering new Tesla facility on South Park Avenue.					

3.4 Cost Buildup - ROM assessment of parking / transport needs

CSI	Description	Quantity	UoM	Rate	ROM $	Comment
	Note: This is well south of the stadium. Other major improvements are possible as listed in the Scoping document for the Skyway removal project. But these have major financial implications. Also - it leads people back onto South Park which already has congestions issues, so is not recommended				Note	
	OPP 9: The following are other ideas not listed in the reports by other, but have been assessed in terms of ROM cost and technical viability					
	Note: ITS (Intelligent Transportation System) will be crucial for the inclusion of a stadium downtown. Items shall include:				Note	
	9.1) Upgrade and expand the NITTEC video wall. As the wall is currently at capacity, add a second wall with operation stations.	1	LS	500,000	500,000	
	9.2) Run fiber down South Park to Abbott Road. Use the NYSDOT fiber on Oak Street or run new fiber along Oak and Elm Streets.	6,970	LF	18	125,453	
	9.3) Install MIOVISION signals at all signals along South Park, Elm Street, Oak Street and at Smith and Elk Streets. Add three (3) MIOVISION cameras on Church Street.	1	LS	300,000	300,000	
	9.4) Install MIOVISION control and monitoring at NITTEC	1	LS	350,000	350,000	
	9.5) Add Variable Message (VMS) signs along South Park, Elm Street and Oak Street. Assume 25 new signs - of varying size and complexity; allow an average cost	25	EA	50,000	1,250,000	
	9.6) Install three (3) Crash Investigation Sites along I-190 northbound from I-190 to Route 198, I-190 southbound for the same limits, and Route 33 in each direction. This gives a total of 12 sites. Allow for land reclamation, earthworks; curbing, paving, signage, barriers; etc.	12	EA	45,000	540,000	

3.4 Cost Buildup - ROM assessment of parking / transport needs

CSI	Description	Quantity	UoM	Rate	ROM $	Comment
	9.7) Dedicate two tow trucks to I-190 and Route 33 on event days. This would be an operational cost in conjunction with local law enforcement - allow capitalized budget to fund	1	LS	250,000	250,000	
	9.8) Primary and Secondary pedestrian connections; allow upgraded walkways and secure pathways along main north/south routes	28,560	SF	25	714,000	
	9.9) Elevated pedestrian connections; allow bridge connection to south of stadium to green zones; allow 2Nr. 400LF bridges (20LF wide)	16,000	SF	1,650	26,400,000	
	Note: Further analysis is recommended in terms of the traffic related issues and required mitigation or improvement measures that could be considered and implemented to public right of ways and road networks and infrastructure - based on the available information prepared by others, the above broad assessments have been considered					
	Sub-total direct construction cost				**$169,833,999**	*$ 108 / SF*
	Allowance for Contractor mark-ups	39	%		66,240,000	
	Total construction cost				**$236,073,999**	*$ 151 / SF*
	Allowance for Developer Soft Costs	30	%		70,820,000	
	Total Project Cost				**$306,890,000**	*$ 196 / SF*

3.4 Cost Buildup - ROM assessment of parking / transport needs

CSI	Description	Quantity	UoM	Rate	ROM $	Comment
B	**OUT OF TOWN SITE (ORCHARD PARK)**			**Area =**	**2,924,183 SF**	
	Primary considerations including: parking and spectator / staffing movements; transportation infrastructure including roads, highways, pedestrian walkways; intersections; clearance and demolitions work and utilities (refer Section 3.2) - initial studies by others suggest the following requirements:					
	Site Clearance and demolition work					
	1) clearance	2,924,183	SF	0.20	584,837	
	2) Demolition (excl. existing stadium)	1	LS	500,000	500,000	
	3) Services diversions - refer utility section 3.2				Note	
	4) Tree removal	1	LS	50,000	50,000	
	5) Miscellaneous	1	LS	1,500,000	1,500,000	
	Parking					
	1) Substitute +/- 14 acres of lost parking with new lots within surrounding sites and neighborhoods; this assume old stadium site would be re-developed with a use other than parking	609,840	SF	15	9,147,600	
	NOTE -> loss of parking during the construction ??					
	Note: Area of parking based on 350SF per space for purposes of calculation Note: The allowance assumes on grade parking with surface water management; site lighting; curbing; signage; fencing and landscaping					

3.4 Cost Buildup - ROM assessment of parking / transport needs

CSI	Description	Quantity	UoM	Rate	ROM $	Comment
	Transportation and traffic infrastructure					
	AECOM has considered some of the potential improvement opportunities (OPP's) as suggested in 2019 studies (by others) and provided additional / alternative commentary and a ROM pricing assessment:					
	OPP 1: I-90 Blasdell Exit Road intersection with Milestrip Road (signal timing, game day control).					
	1.1) Add signal time to I-90 Blasdell Exit Road intersection with Milestrip Road	1	LS	200,000	200,000	
	1.2) Allow for Game Day Control at I-90 Blasdell Exit Road intersection with Milestrip Road - This would be an operational cost in conjunction with local law enforcement - allow capitalized budget to fund	1	LS	372,047	372,047	
	OPP 2: Milestrip Road & McKinley Parkway intersection (signal timing, game day control).·					
	2.1) Add signal time to Milestrip Road & McKinley Parkway intersection	1	LS	200,000	200,000	
	2.2) Allow for Game Day Control at Milestrip Road & McKinley Parkway intersection - This would be an operational cost in conjunction with local law enforcement - allow capitalized budget to fund	1	LS	372,047	372,047	
	OPP 3: Explore opportunities to improve northern movements to I-90 interchange					
	3.1) New Interchange along I-90 with Southwestern Boulevard to accommodate movements from / to north.·	52,962	SF	120.00	6,355,440	

3.4 Cost Buildup - ROM assessment of parking / transport needs

CSI	Description	Quantity	UoM	Rate	ROM $	Comment
	OPP 4: Narrowing and realignment of Abbott Road (between Routes 20 and 20A) east into the existing stadium parking area to create a larger parcel on the west of Abbott Road and an improved pedestrian environment.					
	4.1) Narrowing and realignment of Abbott Road (between Routes 20 and 20A) east into the existing stadium parking area	95,928	SF	38.00	3,645,264	
	4.2) Create a larger parcel on the west of Abbott Road and an improved pedestrian environment - allow for public realm improvements	1	LS	2,000,000	2,000,000	
	OPP 5: It is recommended that Big Tree needs an additional lane or at least restriped. If there was a signal at Big Tree and 219 and the potential for a double left for ingress and a double right for egress, that would help the existing situation.					
	5.1) Allowance for Big Tree additional lane or at least restriping	1	LS	750,000	750,000	
	5.2) Allowance for Big Tree signaling	1	LS	225,000	225,000	
	Note: ITS (Intelligent Transportation System) will be crucial for the inclusion of a new stadium even in the out-of-town context Items shall include:				Note	
	Allowance for ITS upgrades including signaling upgrades; connectivity; camera technology; etc.	1	LS	2,000,000	2,000,000	

Note: Further analysis is recommended in terms of the traffic related issues and required mitigation or improvement measures that could be considered and implemented to public right of ways and road networks and infrastructure - based on the available information prepared by others, the above broad assessments have been considered

	Sub-total direct construction cost			**$ 27,902,235**	*$ 18 / SF*
	Allowance for Contractor mark-ups	39	%	10,880,000	
	Total construction cost			**$ 38,782,235**	*$ 25 / SF*
	Allowance for Developer Soft Costs	30	%	11,630,000	
	Total Project Cost			**$ 50,410,000**	*$ 32 / SF*

4.0 Basis and Assumptions

The following information has been utilized in the compilation of this estimate.

Feasibility Design documentation, including:

1 ESD Summary - Renovation vs New Stadium.docx
2 NFL New Buffalo Program Summary
3 Buffalo NFL Stadium Qualitative Program Narrative

Assumptions - pertaining to refurbishment option

1 Minor service modifications and reinforcements will be required
2 Secondary steel assumed for certain internal walls
3 Basic IT/AV infrastructure elements included in construction; loose equipment included in soft costs
4 Air-conditioning to suites/lounges generally assumed - requires new distribution and equipment
5 No specific renewables allowed for; best practice assumed
6 Basic metal cladding, or masonry veneer with interior insulation for the majority of façade, where not glazed
7 Floor finishes not limited to materials requiring floor height modifications - modifications assumed
8 Area is based on an assumed extent of refurbishment and likely expanded footprint
9 Allowances reflect the minimum scope parameters:

Total seating capacity of at least 60,000
Approximately 60 private suites (16 seats)
Approximately 60 loge boxes (4 to 8 seats)
Approximately 5,000 to 6,000 club seats
Enclosed, conditioned club spaces to accommodate premium seating patrons
Improved concessions accessibility and offerings
Enhanced concourse circulation
Improved access to playing surface for trucks/equipment to accommodate non-NFL events
Improved Bills locker rooms and training facilities

Assumptions - pertaining to new build option

1 The cost model is intended to reflect the requirements and aspirations as described in the Qualitative Program Narrative document
2 Program area is per included indicative area schedule
3 Allowances reflect the minimum scope parameters as reflected above in item 9.

5.0 Risks and Opportunities

The following risk and opportunities exist and will be evaluated further as the design progresses:

Risks - may apply to both scenarios

1 Demolition works; extent of asbestos (likely low risk)
2 Ground conditions where services are required to be modified below slab; embankment works
3 Extent of bulk excavation and carting away (over excavation required) - sinking new bowl for example
4 Constraints imposed by phasing and adjacent buildings
5 Extent of additional landscaping required (if any)
6 Incoming services (electrical); minor provision for reinforcement;
7 Outside broadcast requirements
8 Ground water, in particular impact in retaining wall excavation
9 Escalation delays to start-on-site due to planning; design decisions etc.
10 Extent of plant/equipment space provisions generally - issue for refurbishment
11 Means and Methods to implement bulk excavation work; shoring strategy - issue for both scenarios

Opportunities - may apply to both scenarios

1 Rationalization of facades / cladding
2 Optimization of roof structures
3 Utilization of existing structures / buildings
4 MEP strategy to optimize energy demand;
5 Ventilation / air cooling & heating strategy (certain locations only)
6 Installation of Solar thermal heating (roof level)
7 Installation of Photovoltaic (PV) panels to generate electricity
8 Installation of a geothermal heating/cooling system within the excavation / pitch build-up

6.0 Exclusions

The following are excluded, but may have an impact on the financial robustness of this scheme. It is advised that this list is reviewed and managed in conjunction with the design team in order to make alternative provision for these items as required - in conjunction with the client.

1. Pre-construction escalation to future start date (escalation during construction included in rates)
2. Reinforcement to off-site infrastructure
3. No allowance for temporary facilities during construction
4. Taxes (other than sales tax)
5. Client administration/project liaison costs; marketing or branding costs
6. Finance charges and client project insurance cost
7. Demolitions are limited to existing stadium
8. Masterplan-wide / Campus-wide or off-site Municipal contributions
9. Out of hours working
10. Remediation of contaminated land
11. Asbestos discovered during demolition works
12. Loose FFandE

Appendix C – Qualitative Program Narrative

AECOM

Buffalo NFL Stadium

Program Space Qualitative Narrative

Empire State Development

September 23, 2021

Delivering a better world

Prepared for:

Empire State Development

Prepared by:

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2380 McGee Street
Kansas City, MO 64108
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Table of Contents

1. Category One: Spectator Facilities

The Seating Bowl will be constructed with precast concrete units creating a repetitive series of seating treads separated by vertical risers. Fixed seating will be fastened to these units to create the spectator seating in a variety of seat sizes and configurations.

- The following guidelines will be observed when establishing the seating bowl:
- Minimum tread width in the general spectator seating area will be 34 inches
- Minimum tread width in premium seating areas will be 35 inches
- Minimum aisle widths will be 48 inches at double loaded aisles. 48” aisles with have center handrails
- An even number of seats will be provided in the straight sections and whenever possible in faceted sections

Access and design requirements for the physically disabled will continue thought the planning and design of the project. Disabled access to all public facilities will be provided and shall comply with ADA guidelines.

All permanent seats will include the following features:

Typical general spectator fixed seating is 20 inches wide in the lower and upper seating bowl. Some 19” wide general spectator seating in the upper seating bowl will be applied as space limitations and geometry allows. Spectator seating shall be riser mounted, with polymer back panel, seat panel and armrests. Cup holders mounted to the back of the chairs shall be included. Cup holders will not reduce the clear exit width of the seating row.

Club and Suite seating shall be similar to the general spectator seating but include upgrades to differentiate these two seat types from the general spectator seat. At a min8um, these seats will be 22” wide. Additional possible upgrades include upholstered back and seat panels, higher chair back, screen printed logo on row end standard, embroidered logo on chair back fabric, chair back lumbar support, and wood armrests.

Loge seating is a fixed premium or theater quality fixed armchair at a 22 inch to 24-inch minimum width. Seating shall be floor or riser mounted and upholstered. Each row of seating may include a fixed ledge along the front seating row, as well as small TV monitors per pairs of seats, and Wi-Fi-enabled food ordering capabilities. Where possible in an open-air stadium solution, it would be desirable to locate these elements under cover from structure overhead. Radiant heat can be provided either from overhead or from below the seating/counter areas to improve fan comfort.

Wheelchair seating will be provided in accordance with the 2010 ADA standards for Accessible design.

A wheelchair space will be a minimum width of 36 inches for a single space and 33” for two spaces side-by-side. The minimum depth of a wheelchair apace shall be 48 inches. Space for the companion seat will be an average width of 20 inches. The companion seat shall be located to provide shoulder alignment with the adjacent wheelchair space. The spaces may be constructed to be reconfigured readily by providing removable companion seating. The use of folding chairs for the companion seat is typical.

Fixed rails within the seating bowl will be shop primed with an exterior/interior alkalide primer for ferrous metal and shall be field finish painted with epoxy paint. Tempered glass rails will be used in various locations in premium seating areas and in the upper deck if there are sightlines for spectators below the top of the guardrails.

Concourse Levels:

The Concourse Level is planned to be an average width of 25 to 30 feet. The concourse is designed so that queuing at the concession stands is provided outside the 25' concourse width wherever possible. The 25' wide concourse should provide sufficient width to comfortably accommodate capacity crowds. Concessions, merchandising, public toilets, guest's services, and other spectator amenities would fall outside this area and be distributed conveniently around the public concourse.

Provide well-distributed utility connections (power, drain, and water) for flexible placement of portable food and novelty carts in the concourse.

Please see Category Seven: Circulation later in this report for further descriptions of design character of public concourse areas.

Janitor's Closets - Provide in the proximity of the public restrooms. Each will include a floor sink, hot and cold water, mop hanger/shelf and shelf for storage of cleaning supplies. The Concourse Level includes one large janitor's closet for floor scrubber storage.

Electrical, Telephone Rooms and Mechanical shafts - each quadrant

Condiment Counters - A minimum of one stainless steel condiment counter is provided at each quadrant. Space is allotted for free standing trash receptacles.

Trash receptacles - evenly distributed throughout the concourse, integrated where possible with stand-up eating tables. Provide pairs of receptacles at all locations for recycling.

Guest Services - One permanent Guest Services space is provided on the Concourse Level for general service to patrons. The Guest Services room dispenses Arena information, hearing assistance devices, etc.

Public Toilets

Toilet rooms for men and women will be provided at convenient locations at the public concourses. The toilet rooms shall be configured to eliminate views into the toilet rooms from adjoining areas. These rooms will be provided without doors unless required by local health department. The mechanical system will provide the appropriate ventilation to keep odors away from the food service areas. Air curtains will not be used to separate the toilets from the concourses. The fixtures are provided based on the current International Plumbing Code

Toilet partitions will be floor supported, solid plastic. All water closets and urinals will be wall-hung type. Lavatories will be individual type wall-hung units except at the toilet rooms within clubs where lavatories will be set into countertops. Provide individual 18" x 36" mirrors over each lavatory except at the lavatories set into counters where continuous mirrors will be provided. Full-length mirrors will be provided only in toilet rooms within the clubs. All lighting in toilets will be a high level and will be controlled from a central location. Provide automatic flush valves on all plumbing fixtures. All fixtures will be ADA approved style. Trash receptacles will be large freestanding barrel type receptacles. Infant changing stations can be off the shelf purchased items or could be a larger and more durable plastic laminate counter. Changing stations will be provided in all the public toilet rooms. Provide Sharps dispenser for diabetic needles in all public toilet rooms

In an open-air stadium solution, toilet rooms on main public concourses are not typically fully conditioned but instead may feature radiant heating treatment provided at the exposed ceiling areas in these spaces.

Gender Neutral Restrooms

Four gender neutral toilet rooms will be provided on the Concourse Levels. Intent is that these facilities will be available for patrons needing assistance

Millwork:

- Stainless steel condiment counters - one per quadrant minimum on the public concourse with openings for use over trash receptacles.
- Solid surface lavatory countertops in the toilet rooms utilized by the Suite and Club spectators.

First Aid Facilities

These facilities will be staffed by trained medical personnel (EMTs) during events and will provide for treatment of various injuries/illnesses of patrons. In some cases, patrons may be treated and returned to their seats and in other cases patrons may need to be transferred from the First Aid Facilities to off-site medical facilities. This space should be fully enclosed and conditoned.

The Concourse Level *First Aid /Assistance* area will include a Receiving/Treatment Area, which will have space for a cot. The cot area will be partially screened from the rest of the room by hospital type curtains. This area will also include a space for a nurse's work area, which will have a base cabinet, sink, and lockable upper cabinets. A storage closet with overhead shelf for first aid personnel lockers and wheelchair, gurney and stretcher storage will also be provided as part of the receiving/ treatment area. The area will serve as headquarters/supplies for EMTs who roam with radio contact. No doctor is permanently on staff. A Unisex Toilet will be provided, opening into the Receiving/Treatment area.

Millwork:

Approximately 15" long x 24" deep plastic laminate counter base, partially open below to allow a workstation for medical personnel. Provide drawers, hand sink, under-counter ice machine, under-counter refrigerator. All casework will be lockable.

Provide rod/shelf above open storage area for gurney, wheelchair, and stretcher.

Provide storage space or shelf for a defibrillator with an outlet nearby

Club Spaces

Provide space for a capacity as identified on the tabular program document. The facility is planned as a non-simultaneous occupancy, with the guests admitted during the event having other seats within the seating bowl. It is planned as a gathering place from pre-event time to post event.

The Clubs are intended to be used on football game day for pre-game entertainment and food service. They could house other events at non-event times at roughly any time during the day up until roughly midnight. It is likely that events could be in progress in this space while changeover is taking place in the Stadium.

Food for all events will be prepared in the adjacent Event Level Kitchen, (see "Food Service" for more details on the Kitchen.).

Millwork

- Custom Millwork bar/serving area
- Wood wainscoting and wood trim or other specialized high-level finishes

Electrical, Miscellaneous Requirements

Following items are in addition to standard convenience outlets for power, telephone and data outlets at all workstations, and general lighting per accepted standards. All outlets in concourses shall be the covered type.

Public Concourses - Provide a 20-amp duplex outlet at each location designated for a food cart or kiosk. Provide power/data outlets for 2 TV's at each concession stand. Provide special power for advertising and sponsor displays as required by the design.

Provide power for overhead grilles separating Club Red from the concourse. Provide power and data for ATM machine.

Mechanical, Miscellaneous Requirements

Standard requirements.

Plumbing/Fire Protection, Miscellaneous Requirements

Public Concourses - provide water and floor drain at selected food cart locations. Provide one ADA accessible electric water cooler in each quadrant.

Public Toilets - Provide floor drain and hose bib for general cleaning - locking type to prevent vandalism.

Specialty, Miscellaneous Requirements

Public Areas - provide PA/Sound system throughout.

Door and Hardware Requirements

All doors and frames to be 3'-0" x 7'-0" painted hollow metal doors and frames unless otherwise noted.

Main entrance doors to be heavy-duty clad full glass type doors. At each entrance one of the doors will be equipped with disabled access power assist unit.

Sign and Advertising Requirements

Room ID Signage will be provided throughout.

General directional and Section ID signage will be provided in the public concourse.

Miscellaneous advertising signage will be provided, distributed throughout the concourses.

2. Category Two: Food Service + Merchandise Facilities

Recent renovation projects at Highmark Stadium have added satellite food service prep spaces in the areas around the periphery of the stadium grounds. This requires food to be transported from these locations to the various concessions inside the facility and does not meet NFL standards or modern service expectations for fans at a major entertainment venue. Therefore, in a renovation OR new stadium build project, a modern kitchen prep facility must be included inside the stadium. To be determined is who shall be responsible for equipping and operating all the foodservice areas, whether that will remain with existing operating vendors or new vendors. Assumption for programming is that one contractor will manage all the foodservices at the stadium. Should that change, it will affect the operating and spatial requirements.

The commissary and related offices are typically located on the event/field level and are the primary back-of-house spaces for all the foodservice operations in the stadium. Deliveries (dry, refrigerated, and frozen) are received at the loading dock and either brought into the Commissary by forklift, pallet jack or four-wheel carts or into the Kitchen by hand cart, depending on the product delivered. The Kitchen will prepare the bulk quantity of all hot and cold food for premium areas and may prepare food to the point it is ready to be served in these areas. Alternatively, the premium areas may have smaller satellite finishing kitchen areas as final design program and desired menu approach dictates. The Kitchen may also prep some food to be distributed to remote concessions around the public concourses where it will be finished and finally sold to patrons. The kitchen will require refrigeration, freezer, and dry storage for event use.

Bulk and longer term storage of dry goods, frozen and refrigerated storage for the Kitchen and all concession supplies will be warehoused in the Commissary The bulk of concession foods are warehoused in the Commissary and sent out to specific concessions prior to an event in the same packaging as delivered. All food items are then prepared or cooked in the individual concession stands during the event, as part of the food merchandising program. Commissary finishes must therefore be easily cleanable and meet health safety code requirements. The same requirements apply to each concession located throughout the facility.

The freight elevator should be located with easy access to the Commissary for efficient access to all concourses.

All Concessions and Club areas will utilize disposable service. Ware washing for the cooking pots and pans, permanent service ware, plates, glassware, and utensils will all be performed at the Commissary/Kitchen dishwasher which must be sized accordingly.

The offices, food service staff areas, and cash room/vault for the foodservice operator are located on the event/field level. Employees will need access to enter the stadium, pick up their u7niform, and in some cased starting cash and then go concessions or club areas, so will also utilize the freight elevator and stairs.

Catering

The stadium catering staffs will coordinate any group sales menus, suite menus, marketing of the services and the ordering process. Catering can be performed in and of the club areas. Catering would utilize china, glass, and silverware with all production from the kitchen.

Clubs and Suite Services

Clubs are anticipated to offer buffet style of foodservice on a regular basis. Buffet would be prepared in the commissary /kitchen and removed once the second half of events commences and replaced with desserts and coffees. Menus may vary based on price points in each club or suite, but may feature a mix of casual entrees such as hot dogs, burgers, etc. with more specialty items such as casseroles, pasta or roast meat along with an assortment of salads and desserts.

Self-service soft drink and iced tea dispensers will be available to the club patrons. Alcohol sales will also be provided, and a central beer distribution room will be located on the field level near the main kitchen commissary as well as the loading dock to make for easy deliveries of bulk bottled product and kegs. In seat service may also be a provided amenity associated with some premium seating areas, such as club seats or loge boxes. This service could be served from non-cooking pantry areas inside the clubs but may also be supplemented by the commissary/kitchen.

All stadium levels with premium seating areas will include pantries to provide storage and quick prep for simple food service items specifically to be served in these areas. These spaces will need workspace, dry storage space, and sinks with proper drainage.

Media/Back Stage Catering

AT sporting events a meal should be provided for the media. A typical media meal would consist of concession foods or a boxed lunch prepared and brought in from the commissary kitchen, served from

tabletop chafing dishes and/or a mobile cafeteria line. A soft drink dispenser and coffee dispenser may be permanently installed on a counter in this multipurpose room.

During concerts the caterer may be required to serve the artists and the road crew. The artists' requests can be quite elaborate and are served according to the concert manifest rider. Due to this some flexibility for concert staff meals must be maintained but meals will be served buffet style from tabletop chafing dishes.

All the backstage catering is normally invoiced at cost (labor and product) plus 10% as an administrative fee to the caterer.

Disposables are used for the media and road crews; however, the artists may request permanent ware depending on the menu. Permanent ware is washed in the commissary/kitchen.

Concessions

Concessions include both fixed and mobile stands. The menus served from concessions may include traditional fare such as hot dogs, nachos, and soft drinks, as well as brand name restaurant products, specialty and ethnic foods and confections.

Concession stands will be evenly distribution based on seating capacities. One point of sale (POS is defined as 5 linear feet of serving counter and 22 feet of depth or 110 square feet) per 250 seats is recommended for the public seating.

Portable concession carts will be placed around the concourse and for concerts or other events utilizing field seating, portables may be placed on field on top of protection paneled surfaces. Portables allow you to increase the points of service, reduce customer lines and are placed where needed based on customer traffic flows.

Approximately 50% of the permanent concession stands should be vented to allow for full cooking. Today's customers demand more than hot dogs and pre-wrapped sandwiches. Cooking at the stands is a must.

All permanent and portable points of service should utilize computerized registers accepting cash, credit cards and a student meal card. This means data conduit is needed to all permanent locations.

All concession items will be sold on disposables.

Utilities, Special Conditions and Design Parameters

The following bullet points represent the traditional utility, special conditions, and design requirements of public assembly facility foodservice. These items will need to be updated as the facilities are designed.

Concessions

- 50% of the stands are vented to allow for grilling and frying.
- Minimum depth for the front service rooms is 9'0" (10' preferred).
- Minimum depth for the side or back preparation rooms is 10' (12' preferred).
- These depths need to be reviewed on all concourses.
- Ideally, entrance to concession stands should be from a side door entering into the back. or side preparation room.
- Where possible concession products are delivered on the concourses by forklift or other motorized carts.
- All concession stands should have their own ice maker.
- All concession stands should have their own janitor's sink for clean up after each event.

Kitchens

- All are vented for full-service cooking.
- Must be code compliant – UL, NSF, and ADA.

Club Pantries

These are food holding and preparation rooms that do not require venting, as there is no cooking.

Electrical

- Although a central hot water system is preferred for the building, local electric water heaters can be used in each foodservice area. 80-gallon heaters per 6-line stand.
- Typical loads for a non-cooking concession stand are 85 to 100 amps, 208 3-phase power. Loads for other types of areas are dependent on equipment specified.
- Convenience outlets (20 amps each) should be placed on empty walls and columns throughout the stadium in addition to those specified for portable carts and kiosks. This allows for additional specialty portable stands when needed, family shows increase portable use as well as the plugging in of portable cleaning appliances for cleaning the stadium.
- Buffet equipment for the club will include electric induction warmers or warming tables. In addition, multiple 20-amp convenience outlets need to be spaced throughout the club space for flexibility in the buffet set up for non-event catering.

Gas and Plumbing

- Gas is recommended for all cooking concessions and kitchens.
- A central grease interceptor is recommended for the commissary and the kitchen.
- Local grease interceptors will be mounted under all two and/or three compartment sinks in each concession stand.
- The number of floor sinks will be specified based on the equipment requirements.
- The number of floor drains will be based on room size. At a minimum one floor drain is needed in any foodservice room or area and should handle up to 200 square feet.

HVAC

- All foodservice areas should be air conditioned or ventilated to allow for heat removal of the cooking and compressing equipment, as well as reasonable working conditions for the employees.
- If space is available, compressors can be moved outside of the foodservice production area to reduce heat buildup.
- Equipment compressors will be air-cooled.
- Make up air will be required for all back rooms (concessions) and kitchens with ventilator hoods.
- Make up air may or may not be required for all front room (concessions) ventilator hoods, depending on the availability of concourse airflow.

Freight Elevator

- Elevator must reach all concourses where food, beverages or portables are required.
- At least one 5,000-pound elevator is required in the stadium. Elevator cab will have a depth of 9’ and sized to handle a forklift and portable carts that are a maximum 8’ long.
- All foodservice storage or pantries must be secure from the elevator lobby and service corridor to the concourse.
- Elevator will have dual access and keyed controls.

Portables

- All portables need power (dependent on equipment, 20 to 65 amps).
- Portables require data lines needed for the POS system, unless a wireless network is available.

Cash Counting/Vault Room

- Must accommodate large safe approximately 48 cubic feet.
- Must be constructed as a secure room to prevent any overhead crawl space through false ceiling.
- Closed Circuit TV and/or door and motion detectors may be required.

POS Data/Phone Requirements

- Data conduit and cable is required at each foodservice location, including portables, pantries, commissaries, vending commissaries, and kitchens.
- Registers to accept cash, credit cards and student ID cards.
- An in-house phone is required in all permanent foodservice and merchandise areas.

Special Conditions

- Any local or management recycling requirements must be presented to the foodservice designer.
- All coolers and freezers on grade should have recessed insulated floors.
- All concession and foodservice areas where product is delivered should have 3' 6" wide doors or double doors.
- Condiment Counters are normally millwork or stainless steel permanently installed on a wall on the opposite side of a concourse from the concession stand. Portable condiment counters can also be used.
- Beverage lines will need sleeves to penetrate floors and conduit, if required by code.

ADA Requirements

- The owner, architect and the foodservice designer must determine what ADA interpretations will be used in the foodservice and merchandise areas.
- Traditionally all front service counters are 34" high.
- If a work aisle is 36" wide to over 60" long, then a 60" turn around must be available to eliminate a wheelchair from backing out of a space.
- All dining space is to be accessible.

Laundry Facilities

- Each employee is responsible for the care of their uniforms.
- Catering linens are to be laundered professionally off-site.

Trash Removal

The foodservice department can create a large quantity of refuse in the Stadium. The concessionaire is responsible for cleaning inside of their assigned spaces, (concessions, portables, kitchens, and pantries), bagging their trash and setting the trash outside on the concourse at the end of the event. The stadium's cleaning crew picks up those bags along with the seating bowl and concourse trash that the cleaning crew is responsible for. That cleaning crew then transports all the trash to the compactor.
The concessionaire uses garbage disposals for most wet garbage although some kitchen trash will include wet garbage. Concessionaires can also recycle cooking oils, cans, bottles, and cardboard if required by law, building policy or when economically feasible.

3. Category Three: Team Facilities

Home Locker Room

- (includes 90 – 42” x 36” lockers). The Team Locker room will also be used for pre-game team conferences. Design is to have a focal point wall for presentation. Locker Room shall have laundry cart area for placement of soiled laundry. Provide game clock.

- Family waiting room and kids’ playroom to be located adjacent to locker room and provided with separate toilet facilities and durable finishes as well as TVs, game clock and kitchenette area.

- Team Toilet/Shower/Drying - Provide toilet fixtures and showers as indicated on tabular program documents. Individual showers with individual drying areas and controls at 4’-6” (includes 1 accessible). Provide individual benches within drying area and shared towel storage.

- Coaches Locker Area: Provide toilet fixtures and showers as indicated on tabular program document. (1 accessible toilet, lounge area). Confirm any desired equipment within Coaches’ Locker such as: flat screen TVs with DVD, game clock, telephone, and computer desk with fax machine, etc.

- All doors 3’-0” x 8’-0”, wood with painted hollow metal frames. Ceilings 10’ minimum.

Millwork:

- Custom wood lockers for the players and coaches. Individual lockers shall include a hanging clothes rod, a lockable cabinet and coat hooks. Nameplates should be removable with a tool and large enough for name, number, and hometown.
- Solid Surface lavatory counter with back splash - 24” deep by 36” high (TBD-accessible vs. Team heights)
- Provide full height mirrors in toilet area.
- Provide GFCI power outlets at lavatory area.
- Provide biometric reader control devices to provide access into suite –TBD.

Visiting Team /Auxiliary /Cheerleaders Locker Rooms

Locate Visiting Team Locker Rooms on the Field Level with access to the field. The Visiting Locker Room will have a separate training room within their locker room. A small room will be provided within each locker room that can be used as a space for a training table or as a coach’s locker room.

Millwork: Plastic laminate lavatory-counter 24” deep by 34” high with back splash

Equipment: Lockers shall be off the shelf Stadium style lockers
Provide marker board, TV, and game clock

Officials/ Star Locker Rooms

Locate on the Event Level with access to the playing field. These locker rooms will also be used by performers or stars requiring a separate dressing room.

Millwork: Plastic laminate lavatory-counter 24” deep by 34” high with back splash

Equipment: Lockers shall be off the shelf Stadium style lockers

Provide marker board, TV, and game clock

Laundry Room / Team Storage

This space will only be used for gameday laundry. Locate on event level with access to home team and officials/star Lockers. Ideally, the room should be positioned so that the flow from the outside will lead the players by the laundry room on the way to their locker rooms so that they can pick up their gear on the way in.

- Provide a layout with washers and dryers facing each other.
- Provide area for storage of laundry carts.
- Provide a single oversized laundry door or a pair of doors into the room.
- Provide a utility sink.
- Provide a folding table, shelving, cabinets and hanging rods.

Training/Medical Treatment

Depending on the site determined for the stadium, the size and fit out for this space may change. If the current Orchard Park site is maintained the existing team training facility is on site and can provide some main day to day functions for the team with this space serving as a gameday only supplemental space to provide quick access to medical and treatment needs. Provide audio and visual privacy where appropriate. But locate near all locker room facilities on the field level. The Training Room may be used by Visiting Teams if the small training area within the Visiting Team Locker Room does not accommodate a visiting team player's need. Trainers will load equipment through the Marshaling/Loading Dock area.

- Staff office and Doctor's Office: Each office requires telephone, Internet, and data connections. Provide half height glazing with views to treatment areas and TV monitors for all offices that are not also exam rooms.
- Stereo and Cable TV systems provided in other areas throughout the Training Suite should be capable of central control from all staff offices.
- Game Clock
- Team Physician/Exam Rooms: Include exam table, built-in upper and lower casework with lockable storage and hand sink, and physician desk. Provide for x-ray viewing on wall.
- Unisex Rest Room: Accessible restroom for public use but locate in proximity to exam rooms.
- Hydrotherapy Area: Provide pools as indicated in tabular program document. Provide 10' ceilings, and 42" w. x 96" doors. The floor of the room is fully tiled with half height glazing to permit observation from other areas within the Training Suite. Tile lower half of walls and full height on other walls. Specify chemical resistant non-corrosive finishes for door/window frames in this area. Provide video/television monitors in this area, as well as satellite or cable music system, Provide a shower head, a hose to fill pools, a mop sink for rinsing and filling coolers, and a dry area to hang towels. Allow for cooler storage nearby. Provide drains near the shower area. Locate an ice machine near the work area. Type of ice machine and type of ice to be determined.
- Provide millwork counters and storage cabinets near the treatment and taping tables. Provide convenience outlets above counter and lower cabinets below and provide open shelving above the counter. Counter to include a sink.

Millwork/Notes:

(General: Review preferences for island type cabinet vs. wall cabinets)

- Plastic laminate minimum 7' long base cabinet (24" deep) and upper cabinet in taping and treatment area, lockable. Provide hand sink. Within this storage cabinet provide a 2' wide full height section of cabinet.
- Exam Rooms: Plastic laminate minimum 36" long base cabinet (24" deep) and upper cabinet in Physicians' areas with drawers, lockable. Provide a 2' wide full height section of cabinet

(confirm). Provide surgical lighting fixture. Provide hand sink. Provide lockable under counter refrigerator. Provide desk and under cabinet lighting.
- Electrical outlets should be a 30" AFF.
- Other special equipment requirements for the area might include a defibrillator in hallway and a hydrocollator in the treatment area. Confirm if this equipment is required.
- HVAC requirements much be strictly considered to provide proper air treatment and venting to control humidity and prevent damage to equipment.

4. Category Four: Media Facilities

The Press, Media and Camera Facilities are provided to meet the current NFL broadcaster standards and to provide accommodations for the press comparable to other new NFL facilities. Included with these facilities are the Press Work Facilities, Field Level Facilities, Broadcast Facilities and Miscellaneous Media Facilities. TV sets are recommended to be in each of the media areas.

Press Work facilities

The Press Work Facilities include a multi-purpose space intended to flexibly accommodate the Press Work Room, Interviews, and Still Photographer Facilities. Toilet facilities are included within the Press Work Area. These facilities provide for the basic work requirements of the press before and after events. The general location is on the field level, easily accessible to the event floor and both the Home team facilities and the Visiting team facilities.

The Press entry requires a secure location with a pass-thru window to allow distribution of press passes. Close access from the press entry to elevators and stairs is desired to provide a path for the press to access other levels of the stadium that house their dining area and seating/writing areas.

The Press Work Room/Interview is the central work room for all print, radio, and TV broadcast media. It must have a high level of noise isolation from surrounding rooms and sound attenuation within the space with sound absorbing panels, TV's on brackets for tracking the action of the game in progress, a PA system hooked up to the game PA and a small scoreboard and game clock to track ongoing game statistics. . Provide a minimum of 32 workstations with the ability to add 18 additional workstations. Print press and still photographers will use the Press Work Facilities. Each workstation location will include connections for a computer, electrical, cable and in-house TV hook-up capability. Wireless will also be provided for this area. Provide floor power/data. Removable press stations should be designed to include power/data raceways so they may be ganged

Interview capacity is 80.

The central area of this room can be left open, with portable tables

Press will eat at their defined media dining room. Dining tables for 10 to 15 shall be provided based on the assumption that not all press will eat at the same time and that some press will eat at their workstation. TV monitors will be provided.

Post-game interviews will also take place in the Interview room on the field level near the team locker rooms. A permanent raised platform will be provided for cameras. A removable platform will be provided for a stage with a curtain behind the stage. A removable portable ramp shall be provided to provide wheelchair access to the stage.

A nearby. *Fax/Copy/Work Area* will be provided for operation of duplication equipment and for workspace for stats crew. Open workspace will be provided for staff/stat crew along with a minimal amount of built-in

storage. Provide space for 9 people to photocopy, fax, and collate documents for distribution to Press on floor and in Multi-Purpose Space. This space will also serve as an office.

A portable coat rack will be provided for the Press' use, within the Press Interview/Work Room. Currently no lockers or lockable storage is planned for Press

Millwork:

- Plastic laminate work counter/workspace in Press Room, 15" deep and 24" wide workstations, but counter is continuous. 32 permanent units to be provided. Provide continuous wire way for data/cable/power and telephones. Provide connections and movable tables for an additional 18 workstations.
- 24" deep plastic laminate stat crew work counter, with power, computer, data outlets at 36" o.c.
- At maximum press capacity, 175 press positions will need to be provided within the sideline stadium tower enclosure. Wiring capability to all press positions will be provided for TV and statistics monitors, electrical power, computers, etc.

TV camera positions will be provided in the seating bowl in a way that will meet NFL facility guidelines and other desired positions without blocking the view from permanent seating locations. Removeable seats can be infilled for non-sporting events. Lens height is assumed as 4.5 to 5' above the tread for a standing camera position, and 3' for a sit-down position. Cameras should have an 8' vertical offset from the nearest seating directly in front of camera locations to avoid fan interference.

Broadcast Facilities

Broadcast facilities include spaces for remote game operations controls (scoreboards, video, etc.) as well as spaces, which would allow for in-house video production. Broadcast Facilities include the following spaces: Courtside Broadcast cabling, Head End/MATV/Broadcast Cable (cabling termination racks/room at truck location), possible ENG Room cabling, (Electronic news gathering), Scoreboard/AV Control Room (includes Scoreboard/Video and Tape library storage) and Interview Room (refer to Press multipurpose space). These facilities should have their own HVAC system to maintain adequate cooling and humidity control on a 24-hour basis.

The *ENG and MATV Rooms* will contain equipment and control operations and should be completely cross connected via cable tray systems, etc. to TV truck locations, Scoreboard/ Audio Control room and TV facilities in the bowl. These rooms should be highly sound isolated and ideally have raised computer floor for maximum cabling flexibility.

It is recommended that the ENG cabling termination and MATV headend equipment be in separate rooms if possible.

Head End/The *Broadcast Cabling ENG Termination Racks/Room* is to be located near the TV truck parking spaces. Essentially, this area will function as a large "junction box". TV truck power will be located on the exterior wall of this room. Upon University resolution of location, function and size of any in-arena video scoreboard display production system, coordination between space and adjacencies for the video production, TV truck and ENG cabling and MATV headend rooms must be finalized.

The *ENG Cabling Room* is equivalent in function to the Broadcast Cabling area with the exception that it services local radio and TV station cabling and equipment. As parking for these vehicles is not at the truck dock, it is not essential that this room be adjacent to the dock, however it should be easy for broadcasters to access. Cable tie-lines and pathways should be provided between the TV trucks, ENG room and Scoreboard Video control rooms.

Miscellaneous Media Facilities

Miscellaneous media facilities include TV truck parking areas and satellite truck parking areas. Regular "side-by-side" broadcasts are anticipated at the stadium. For stadium events provide area for four simultaneous trucks to be parked near the dock or near the IPF building. These trucks will have a space requirement of 70' long x 20*'* wide and must be provided with power patch panels, phone lines and data

links into the facility via cable tray or “hard-wired” box. The truck parking area should be flat, with less than a 1% slope in any direction. It is preferred but not mandatory to be able to pull the truck inside the stadium marshalling area.

“Satellite” uplink trucks must be parked in areas with “views” to the southern sky for satellite links. These spaces are 10’ wide by 24’ to 32’ spaces. A minimum of one (1) uplink should be provided. In addition to satellite uplinks, space for 2 local TV station vehicles is required. For big events, up to 12 parking locations may be required. While it is ideal for the TV station and uplink trucks to be parked in the same location, this may not be technically possible as the “view” to line-of-sight microwave receive sites may not be possible at the location where a view to the southern sky is available.

Empty conduits with pull wires to the parking location(s) from the cabling termination rooms is recommended.

5. Category Five: Administration Facilities

Ticket Office Administrative facilities

The Stadium Ticket Office will include day of game ticket sales, will call, future event ticket sales and spectator services for ticketing.

The Satellite Ticket Office is located at one of the Main entrances to the Stadium with proximity to the football stadium entrance to provide supplemental ticket sales for football events. There will be four exterior windows and one interior window within the stadium ticketed zone for advance ticket sales. It is anticipated that an ATM could be in proximity to the exterior ticket windows. The Ticket Office will be open during events and possibly specified non-event days. Electronic ticketing will be used (see details under “Millwork” concerning specifics of each ticket point of sale).

Ticket Windows

- Provide (4) exterior sales windows. The use of the ticket windows will be controlled by electronic signage above each ticket window. Ticket window use includes will call for players, will call for students, will call for the general public and advance sales. All windows shall be 34” high to the service counter height at both the exterior and interior sides of the windows.
- Provide (1) interior ticket window located near the entry with the exterior ticket windows for advance sales and for problem situations. The interior ticket window shall be accessible from within the Ticket Office Administrative area.
- The exterior ticket sales windows are stainless steel framed bullet resistant glazed with electronically transmitted speech (“speaking hole – similar to SC-100 model or Zephyr Industries”). Provide a method for closing off the transaction slots against drafts in cold weather. Provide opaque shade inside to pull down when the box office is closed. The windows will have a 1 ½” deep recessed deal tray and a check writing ledge on the exterior window side similar to the Exterior Service Window by Creative Industries.
- The exterior ticket windows will include a canopy over the ticket windows to allow approximately 4 people to queue at each ticket window under cover.
- The interior ticket sales window should match the exterior windows in appearance and security features. Weather tight features are not required.
- Each ticket window will include an electronic, LED reader board sign mounted to the inside face of the ticket window with signage visible to the exterior. The reader boards will be fully programmable, with a connection to a computer located within the Ticket Office.
- Ticket scanning will occur at the stadium gates. Provide an area prior to the gates for bag checking. Ideally there should be a buffer between the bag checkpoint and the ticket scanning.

Millwork

All transaction counters at each window will have a stainless-steel counter at 34" above floor for access by the disabled with adequate space for check writing. Provide a recessed stainless-steel transaction tray below the bullet-resistant window. The interior counter adjacent to the ticket window transaction counter will be plastic laminate construction with a grouted CMU wall construction below. Each sales station will incorporate the following features:

- 30" deep working space counter to accommodate monitors and keyboard with a return counter.
- Built-in drawer for printer at height that printed tickets can be reached without bending.
- Built-in lockable cash drawer sized to hold change fund dividers that will be lifted out and stored in the vault.
- Built-in lockable storage drawer sized to hold personal items- assume purse, books, or backpack.
- Grommets at each station to allow wiring to be concealed below the counter.
- Utility connections and space will be provided at each station for a computer terminal, credit card machine, ticket printer and ID card "swiper." Each ticket sales station will have a telephone.
- 18" deep plastic laminate rear work counter parallel to front ticket counter

Stadium Operations Administrative Facilities

Stadium Operations personnel are responsible for managing day-to-day operations of the building. Stadium Operations personnel manage changeovers from one event to another, manage the cleaning crew, manage the arena ushers during an event, manage deliveries, manage general arena maintenance and various other operational activities. Stadium Operations shall typically monitor and control all mechanical and electrical systems (BMS).

Millwork

- Provide plastic laminate countertops with partial base cabinets and above counter shelving in the Conference /Work Room.
- General Manager Office to have small conference area, concealed marker board, and coat closet.
- Building Operator's Office to have concealed marker board, and coat closet.

Electrical Miscellaneous Requirements:

Note: all spaces assumed to be provided with standard convenience outlets for power, telephones and data outlets at all workstations, and general lighting per accepted standards.

Power, phone and data outlets for ticket printers, phones, credit card machines, ID "swipers" and computers at each ticket sales station.

Mechanical Miscellaneous Requirements

Standard office-type HVAC requirements. System should be such as to allow for operating hours different from main facility hours.

Plumbing/Fire Protection Miscellaneous Requirements

Standard requirements.

Specialty, Miscellaneous Requirements

Provide CCTV security cameras to monitor ticket sales area, area outside ticket windows, area inside Ticket Office.

CCTV Monitors in Work Room.

"Panic Buttons" - each ticket sales window to provide audio and visual alarm to Security.

Door and Hardware Requirements

All doors and frames to be 3'-0" x 7'-0" painted hollow metal doors and frames unless otherwise noted.

Doors separating the Box Office area and the public to be heavy gage security type hollow metal doors (14 gage) and frames (12 gage), painted. These doors will be equipped with magnetic release locks or electric strikes for remote release via buzzer connection for release at the door by employee at the window. These doors can also be released by card key. These doors will be monitored by CCTV system. The Box Office will always be separated from the public by a "double lock" vestibule system where more than one door needs to be passed through for entrance.

6. Operations Facilities

Security Facilities

A security operations center will provide are for security personnel to watch monitors tied to various security cameras around the stadium and parking area, as well as view the loading dock, and be able to check building management systems including: lighting, fire alarm, CCTV cameras, emergency paging system and elevators/escalators. Work areas will include plastic laminate countertops with grommets for access to data and power below. Racks for countertop mounting of monitors and pc terminals with be provided along with base cabinetry.

Millwork:

- Plastic laminate countertop, 30" deep with grommets 30" o.c. to allow for telephone, data, and power cords to reach below. Provide racks for countertop mounting of monitors and spaces for PC terminals.
- File cabinets will provide portable storage below. Undercounter drawers provide storage for small items.
- U" shaped counter workstation with sliding glass window assigned to allow sign-in process or package transfer from Sallyport to Security Area. Window to be interior aluminum sliding glass, color to match exterior curtainwall, approximately 4'-0" height x 8'-0" width. Provide small counter extension on visitor side to permit sign-in.
- Base cabinet unit at rear of Security.

Bowl Security:

See narrative description of the counter noted above.

Employee Facilities:

Employee check-in will occur at a defined space near the Security room or at an exterior door near a stair and elevator core on the concourse level. Locker areas will be equipped with metal lockers with carpeted floors. Adjacent toilet and shower facilities will feature tile floors and wet walls and will provide individual shower stalls.

Loading/Trash Dock Facilities

The loading dock will accommodate all deliveries to the stadium on a day to day basis. Dock space will provide for the simultaneous unloading of event trucks and building operations or commissary deliveries. During events, the docks may be used for parking by buses to load and unload players, entertainers, or others. Trucks to have the ability to back into the Marshaling area to unload as well. Docks will be equipped with dock levelers and locks, insulated and overhead coiling doors, dock shelters with head and side curtains, dock bu7mpers, wall mounted steel bumpers and guttered metal hoods.
One dedicated trash dock will be provided. The compactor, storage containers, and sorting area will be located adjacent to the two loading dock bays.

Storage Facilities

A marshalling area will serve as an inside queuing (staging) area for events and transitional storage area. The area must be provided with maximum flexibility. Protect exposed mechanical, electrical, and building structural elements from truck and impact damage.

Storage Facilities will be flexible in use but will generally be laid out with specific storge purposes in mind. Some storage areas will be basically open areas but will be separated with chain link fence partitions to provide for security. Specific storage rooms for specific storage types/needs will be provided as necessary.

Shop Facilities

Shop facilities typically provide areas for carpenter, electrical, welding, seat maintenance and repairs necessary for the day to day operation of the stadium. Lockers for any permanent full-time shop employees should be within the shop. Provide desks for multiple engineers and a large work surface.

Corner Guards

All exposed corners in the field level corridor, marshalling, and storage areas are to receive metal angle corner guards 4’ in height. Provide stainless steel bumper rail at 18” A.F.F. at all walls where cart and forklift traffic are anticipated.

Enclosure and Conditioning requirements for all storage and operaions areas should be considered on a case by case basis depending on the final design solution and overall layout of the level of the building these elements exist on. Security of storage areas will often dictate overall enclosure considerations however.

7. Category Seven: Circulation

The character and design features of main horizontal circulation arteries and pathways will vary widely depending on the nature of the final design of the facility. If the facility contains a full roof for example, the majority, if not all main concourse areas will be fully enclosed and conditioned which will have ramifications for finishes of walking surfaces, HVAC and electrical requirements vs these same features in an open air environment. For the purposes of this narrative AECOM will identify considerations that must be accounted for an open-air design solution. This should not be interpreted as a recommendation for open air vs. a fully enclosed facility.

Main Concourse + Upper Concourse

In an open-air stadium environment, concourse slabs must be provided with appropriate slip protection. This can be accomplished via a proper surface finish to the exposed concrete or via applied toppings such as epoxy coatings which can also offer the ability to define specific areas and/or provide aesthetic treatment where desired with changes in color and texture. Widths of concourses has been covered earlier in this report.

In the Buffalo climate it is worth considering heated slabs in some areas, especially on an upper concourse at a raised elevation that is exposed to wind and air exposure on from both above and below. In addition, where overhangs exist from overhead level floor footprints or other construction, radiant heat can be incorporated into the exposed structure above the concourse areas to help provide improved fan experience in inclement weather and a shelter area for fans to visit periodically to warm up even if their ticketed seat is fully exposed.

Suite + Club (Premium) Concourses

Even if a stadium is otherwise an open-air environment, the modern fan expectation for premium level horizontal circulation spaces is that they are fully enclosed and conditioned. In other words, the circulation pathway is seen as an extension of the actual premium club or suite itself. These spaces will be fully finished with high quality finishes on floors, walls, and ceilings.

Millwork

High quality plastic laminate or wood cabinetry in public facing areas

High quality granite or solid surface countertops in public facing areas

Vertical Circulation

In an open-air stadium design vertically circulation elements such as ramps should receive the same considerations for surface treatment and temperature control outlined above for exposed public concourses. All ramps must meet ADA requirement for slope and surface treatment as well.

Stairs will be designed to meet all building code requirements and, if exposed, must also feature consideration for slip prevention. In a fully enclosed facility, a deics8on it may be acceptable to allow some part of some stairs to be unconditioned, however this should be fully analyzed based on final anticipated traffic quantities and types for all stairs on a case by case basis.

Railings will receive either a galvanized finish or an exterior grade paint solution as described earlier in the report for railings in the seating bowl areas.

The tabular program identifies targets for quantities for all vertical circulation elements including ramps, stairs, elevators, and escalators. Final quantities as well as placement, distribution will obviously vary based on the final facility design. A specific vertical circulation consultant will typically be part of the design team to provide expertise and analysis on number and types of vertical circulation features provided, especially with regards to escalators vs. elevators.

Appendix D – Ancillary Development Assumptions

Fiscal Impact Assumptions – Property Tax Impacts

Assessed value per built square foot was estimated across the property types listed below in the Downtown (Central), Ellicott, and First Ward neighborhoods. These estimates represent broad averages for these general categories based on available data. Additional research, beyond the scope of this analysis, would be required to model more specific development scenarios. Modeled stadium district values are the average of Downtown and Ellicott values. Note, a city-wide property tax revaluation occurred in FY2021, which may impact future assessed value and property tax trends.

Properties in Buffalo are categorized as Homestead or Non-Homestead, which generally correspond to residential and commercial use groups, respectively. Homestead property tax rates are applied to Apartments while Non-Homestead rates are applied to Office, Retail, and Hotel use groups. Sewer Rent and Erie County taxes are applicable to all properties.

All impacts were calculated for the relevant uses, scenarios, and geographies on an annual basis. These were projected forward for 30 years and discounted to 2022 dollars using a 6.25% discount rate. Assessed values are escalated by 0.5% annually; tax rates are held constant through the analysis period.

City of Buffalo – Property Tax Assumptions

Use Class	First Ward Neighborhood Average AV per Built SF	Downtown Neighborhood Average AV per Built SF	Ellicott Neighborhood Average AV per Built SF	Stadium District Modeled AV per Built SF
Apartments	$26	$125	$78	$102
Office	$38	$113	$74	$94
Retail	$38	$113	$74	$94
Hotel	$38	$113	$74	$94
Annual AV Increase				0.5%
Property Taxes				FY22 Tax Rates
Homestead Property Tax Rate				5.180%
Homestead School Tax Rate				4.696%
Non-Homestead Property Tax Rate				8.970%
Non-Homestead School Tax Rate				8.243%
Sewer Rent				0.095%
Erie County Tax Rate				5.041%

Sources: Property Tax - City of Buffalo, Erie County, New York State

Underlying Demographic and Employment Trends

Over the past decade, population has grown across the region and most significantly within the City of Buffalo. Buffalo has grown from 261,000 residents in 2010 to 278,000 in 2020 – a change of 7%. The Riverside, Upper West Side, Delavan Grider, Masten Park, and Broadway Fillmore neighborhoods have grown the most each contributing between 700-1,000 new residents for Buffalo. Much of this growth was driven by people of color, especially those identifying as Asian or Two or More Races. Though additional 2020 Census data has yet to be released, many of these residents are likely refugees and immigrants, a result of policies that have championed immigration as a means for reversing the area's long-term shrinkage. Increase in population is expected to benefit both the Orchard Park and Downtown sites.

Underpinning office and other commercial real estate demand is employment. Overall, employment in the City of Buffalo grew approximately 5% (or 0.7% per year) from 2011 to 2018. This outpaced growth in Erie County (3% or 0.4% per year), but lagged the US as a whole (15% or 2.1% per year) over the same time 2011-2018 time period. Sectors in Buffalo with the largest gains in number of employees were: Arts, Entertainment, and Recreation; Public Administration; Management of Companies and Enterprises; Transportation and Warehousing; Information; Professional, Scientific, and Technical Services; Retail Trade; and Educational Services. All except Transportation and Warehousing could be categorized as Office or Retail-using employment.

Appendix E – General Limiting Terms and Conditions

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