AECOM

BUFFALO

NFL STADIUM SITE OPTIONS ANALYSIS

23, DECEMBER 2014

BUFFALO PRIDE

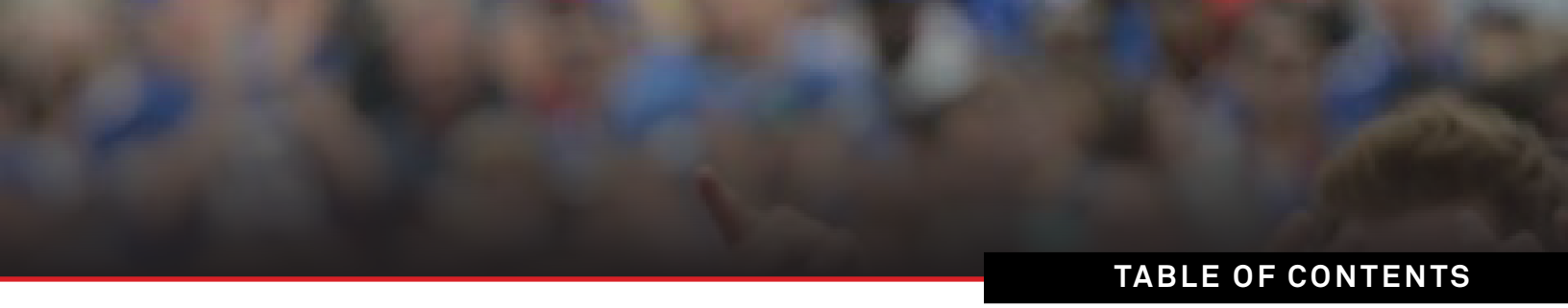


TABLE OF CONTENTS

I. EXECUTIVE SUMMARY 4
- A. GENERAL TASK DESCRIPTION
- B. SHORTLISTED SITES
- C. NON SHORTLISTED SITES
- D. RALPH WILSON STADIUM RENOVATION

II. METHODOLOGY 14
- A. INTRODUCTION
- B. HISTORY
- C. CONTEXT
- D. STADIUM PROGRAM DRIVERS
- E. PROCESS

III. SITE EVALUATION SUMMARY 28

IV. SHORTLISTED SITES 30

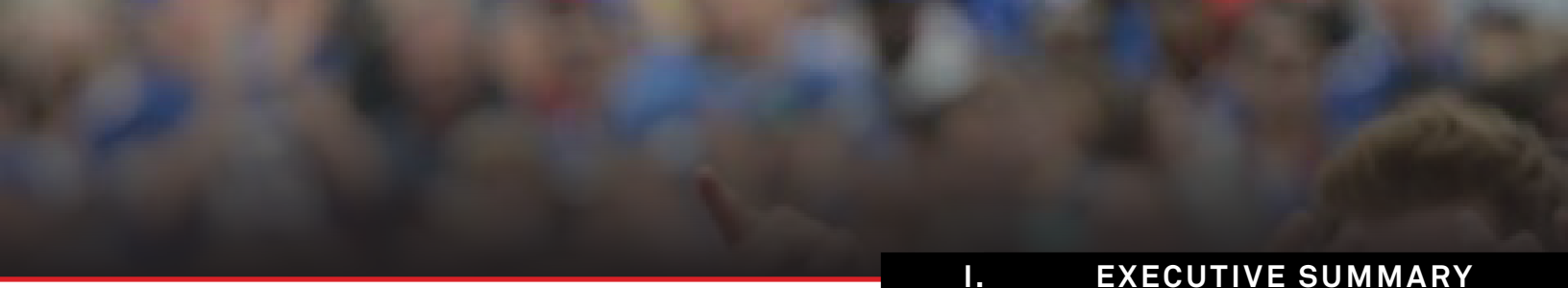
V. ECONOMIC DEVELOPMENT SCENARIOS 56

VI. NON-SHORTLISTED SITES 64

VII. FURTHER EVALUATIONS 70

VIII. EVALUATION TEAM 72

IX. APPENDICES 78
- A. NFL CASE STUDIES
- B. BASE NFL PROGRAM
  - i. OPEN AIR FOOTBALL STADIUM
  - ii. MULTI-PURPOSE STADIUM
- C. TRIP GENERATION ANALYSIS
- D. RELATIVE SITE COST ANALYSIS
- E. RALPH WILSON STADIUM RENOVATION



I. EXECUTIVE SUMMARY

A. GENERAL TASK DESCRIPTION

AECOM has been retained by the Foley & Lardner LLP, on behalf of the Governor's Office of the State of New York and Empire State Development, to evaluate potential locations for a future stadium venue of the NFL's Buffalo Bills. As Governor Cuomo has repeatedly indicated that keeping the Bills in Western New York is a priority, the purpose of this analysis is to evaluate potential locations in the greater Buffalo region that could support an NFL stadium and game experience worthy of Buffalo Bills fans and the citizens of Western New York. This analysis is intended to be a tool for use by various stakeholders in evaluating various stadium options and not as a definitive statement of positions or recommendations. This analysis includes the following:

Evaluation Criteria – A discussion of the essential and desired characteristics, both quantitative and qualitative, of modern NFL game day environments, which characteristics are used as evaluation criteria for potential stadium locations. Evaluation criteria include:

- Site size and ease of land acquisition
- Roadway and infrastructure improvement needs
- Parking and access to public transportation
- Ancillary development potential
- Iconic impression potential
- Additional revenue potential and sustainability potential

Site Comparisons - A site comparison study of 13 potential stadium locations, as proposed by various stakeholders. Of the 13 potential locations evaluated, 3 locations were "shortlisted" as being the most desirable sites based on the evaluation criteria. The existing Orchard Park site was analyzed for both its potential with a renovation of Ralph Wilson Stadium and for comparison, its potential as a site for a new stadium, alongside the other shortlisted sites. It is important to note that the identification of certain sites as "shortlisted" is not a definitive recommendation of such sites or exclusion of "non-shortlisted" sites; rather such categorizations merely reflect our views as to the most desirable sites based on information analyzed to date.

Existing NFL Case Studies – An analysis of certain existing stadium case studies applicable to the potential sites in the greater Buffalo region.

Cost Model – A presentation of a generic stadium cost and revenue model for the Buffalo market, based in part on recently completed NFL stadium projects.

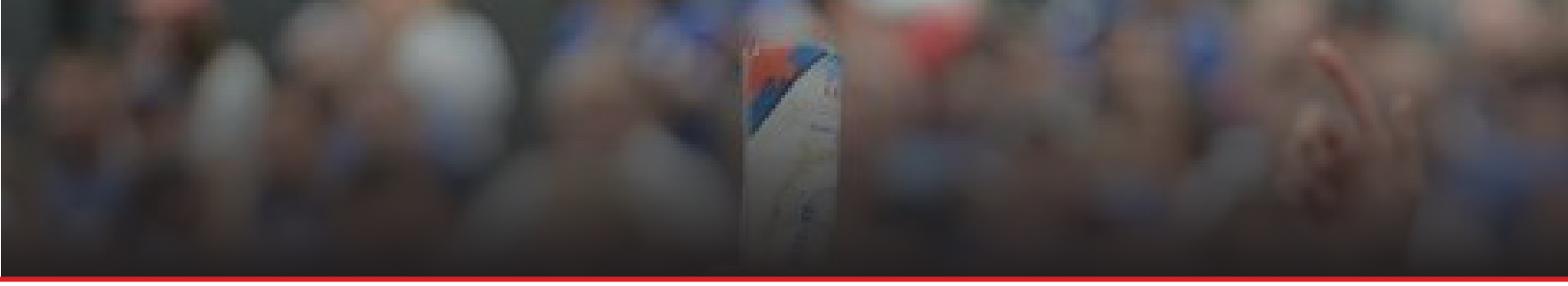
Stadium Program – A presentation of a program model for a generic NFL stadium, which accounts for the possibility of either an open-air or domed stadium.

Revenue Sources – A general description of revenue sources for a typical NFL stadium.

Ancillary Development – Analysis of potential development and related ROM costs that could be generated on or adjacent to each shortlisted site.

Economic Impact – Analysis of ROM economic impacts for each shortlisted site.

Evaluation of Existing Ralph Wilson Stadium – A high-level evaluation of the value and perceived longevity of the existing Ralph Wilson Stadium in Orchard Park following the most recent renovations.



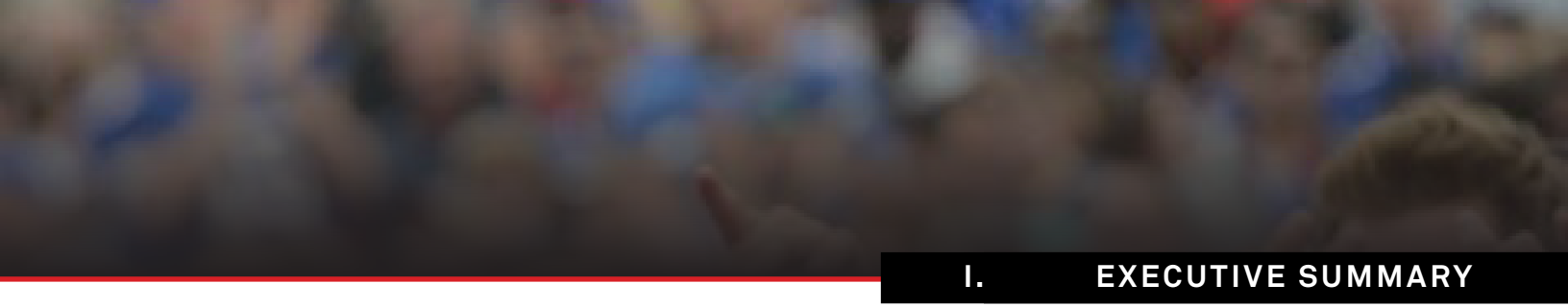
This analysis does not identify, design or recommend a single best location for the Buffalo Bills stadium, nor does it delineate the full potential of the potential locations identified herein as shortlisted sites. This analysis identifies, based on the information available as of the date hereof, a shortlist of sites that have the best potential for successfully hosting a modern NFL stadium and benefiting the community. This report is intended to serve as a platform for a broader discussion of the potential of each potential site and the costs and benefits to the community of potential stadium and ancillary development on each such site.

AECOM does not deem any potential site evaluated to be the 'perfect site' as-is, as every site evaluated in this analysis has opportunities and challenges. The evaluation criteria used to evaluate those opportunities and challenges include sufficiency of site size, ease of site acquisition, infrastructure considerations (both availability existing infrastructure and cost of new infrastructure construction), ease of access to site, site acquisition costs and ease, parking and access to public transportation, ancillary development potential, iconic impression potential and community impact, among other things.

Of the 13 sites evaluated, AECOM has identified 3 potential new sites plus the possibility of renovation to, and for comparison purposes, the construction of a new venue adjacent to, the current Ralph Wilson Stadium in Orchard Park as the most optimal shortlisted sites. It is important to note that, notwithstanding the fact that these 4 sites are shortlisted, each of the shortlisted sites require improvements, including upgrades to roads and other infrastructure.

A primary consideration in the evaluation of sites is the business model and resulting space program for the potential stadium facility. A stadium's successful return on investment and contribution to the community depend on balancing the number of events held at the facility with stadium program and budget. There are two distinct options to consider when evaluating a business model for large assembly stadiums: an open-air, football-focused venue and a domed roof (retractable or non-retractable), multi-purpose venue. The presence of a domed roof on a stadium can have implications on its usage, but also comes at an increased capital cost. A summary of program and revenue potential for domed versus open-air stadiums is described in Section II on page 19 of this analysis.

The criteria evaluated and presented herein for each of the shortlisted sites includes analysis of the ease of site acquisition, access and potential costs associated with development of the site and potential stadium construction costs. All costs presented herein are to be considered conceptual estimates due to the preliminary nature of this investigation. Further investigation and development is required for final determination of potential costs including the following:



Roadway and Transportation Improvement Costs – Conceptual costs of recommended improvements relating to access to each site are described in Section II. Site Evaluation Summary Chart on pages 28-29 and within each shortlisted site analysis in Section IV.

Potential Site Acquisition Costs – Cost value of the parcels contained within each site are described in Section III. Site Evaluation Summary Chart on pages 28-29. Values depicted are reflective of current assessed value for a comparative analysis of the proposed sites only and do not represent fair market value of the properties.

Economic Development Scenario Costs – Potential costs for potential ancillary development scenarios for each site as described in Section V Economic Development Scenarios, Table of Conceptual Economic and Fiscal Impacts on pages 62-63.

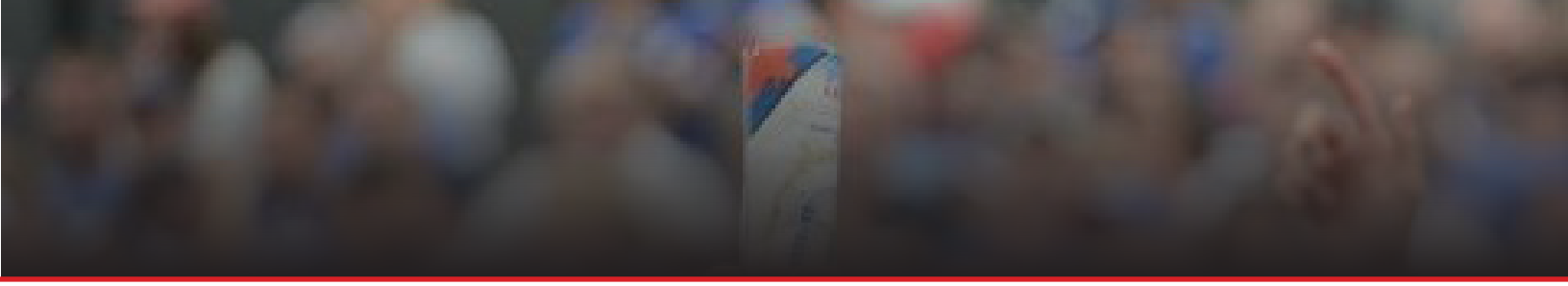
Stadium Development Costs – Potential costs associated with the stadium development within the site itself. Costs are based on the model program outlined in Appendix B.

B. SHORTLISTED SITES

Of the sites proposed, AECOM evaluated 13 major potential sites in connection with the preparation of this analysis, including 12 "new" sites and the existing Ralph Wilson Stadium site in Orchard Park. The evaluated sites include both urban and suburban sites in Buffalo city proper and the surrounding communities. Utilizing a carefully crafted set of criteria based on characteristics of successful NFL stadiums (as discussed in more detail in Section II of this analysis), 4 of the 13 potential sites have been "shortlisted" as having the greatest potential for being the location of a successful NFL stadium, including 3 urban sites and the potential development of a viable long-term solution (ie renovation or new) at the existing Orchard Park location. While each shortlisted site is not without challenges, the 4 sites present the most viable options for an NFL stadium in the Buffalo region, based on the facts and information evaluated to date. However sites should continue to be evaluated as additional information becomes available including any input from team ownership. Inclusion on the shortlist does not constitute a recommendation or endorsement of such site.

With respect to each shortlisted site, this analysis includes AECOM's opinion as to the type of venue (open-air or dome) that will best suit such site from a planning perspective and an analysis of the impact on costs and potential revenues of each site. A summary matrix of the 13 potential sites and the criteria used to evaluate such sites is set forth in Section III and a summary of the potential costruction and related costs is set forth in Appendix D on page 86 of this analysis.

The 4 shortlisted sites are presented as follows alphabetical order without representation of ranking.



COBBLESTONE DISTRICT SITE

The Cobblestone District's history dates back to the origins of the City of Buffalo. With many of its buildings originating as far back as the 1850's, the district was designated as a local historic district in 1994 in response to demolition resulting from the construction of the First Niagara Arena. Bounded by Michigan Avenue to the east and Illinois Street to the west, Scott Street to the north and South Park Avenue to the south, the Cobblestone District site is located in an area that is part of Buffalo's urban renewal. The Cobblestone District's adjacencies with the First Niagara Center Arena, HARBORCENTER and Coca Cola Field create the potential for a new stadium to develop an iconic sports district and further the development and renewal of downtown Buffalo. This connection to other retail and mixed use development make the Cobblestone District site a good candidate for construction of a domed, multi-purpose stadium with program to attract business conferences and other mixed use that would realize benefit that a higher number of events a domed stadium would bring. There is also ample access to public transit, such as the potential intermodal hub of Metrorail, bus and Amtrak in the vicinity of the Exchange Street station which for the avoidance of doubt is located 1/10th of a mile away from the proposed Cobblestone District Site. More detailed recommendations for roadway and traffic infrastructure improvements are included in the detailed transportation analysis of this site in section IV of this report.

The Cobblestone District site is not without challenges, as its historic nature and potential archeological conditions may create hurdles for development. The footprint of a stadium would most likely occupy the south-eastern portion of the site as illustrated in the site diagram on page 32. Careful and thoughtful planning of stadium design elements should allow the existing buildings along Illinois and Mississippi Streets to remain intact during and after stadium construction. Such design elements that may accomplish this include incorporation of an asymmetrical sideline bowl design approach as employed in existing NFL stadiums such as in Chicago at Soldier Field, or even incorporation of existing buildings into the structure of the stadium, as is the case in Detroit at Ford Field

EXCHANGE STREET SITE

The Exchange Street site, bounded by Swan Street to the north, Chicago Street to the east, Exchange Street to the South and Michigan Avenue to the west, is the most accessible, in terms of ingress and egress, of any of the proposed urban sites and also best access to existing parking inventories. With its adjacency to the on and off ramps of I-190, and linkages to the I-33 to the north, this site has the easiest load-in and load–out capabilities. Adjacencies with Coca Cola Field create the potential to develop an iconic sports district, similar to the Cobblestone District site. Further, this site has the additional benefit of adjacent properties that offer ancillary development potential. The site's proximity to other retail and mixed use development also make the Exchange Street site a good candidate for a domed, multi-purpose stadium with program to attract business conferences and other mixed use, though an open-air stadium would also be a viable option. Its location at the edge of the downtown Buffalo core offers spin-off development potential without the costly demolition of major buildings. Were a stadium to be built on this site, Seneca Street would need to be closed

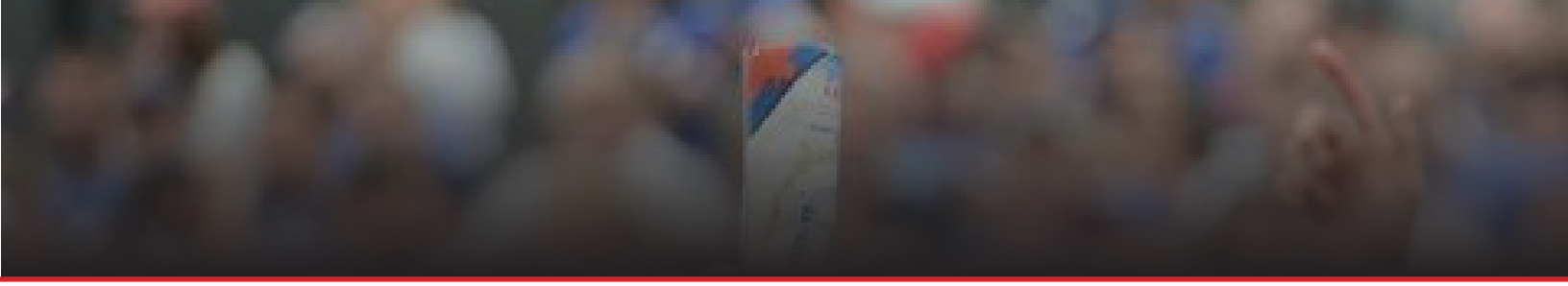
between Michigan and Chicago, and re-opened east of Chicago. More detailed recommendations for roadway and traffic infrastructure improvements are included in the detailed transportation analysis of this site in section IV of this report.

Pierce Arrow Museum was recently constructed on the Exchange Street site, and would either need to be relocated or incorporated into the stadium as a unique iconic feature. Off site, several adjacent residential homes need to be considered in connection with stadium activities and event traffic flow. Engaging with the community to further understand potential impediments will be important with respect to this site. To mitigate potential challenges, a development block should be considered as part of the initial conceptual planning process.

ORCHARD PARK

Serving as the home of the Buffalo Bills since 1973, the existing Ralph Wilson Stadium (RWS) site in Orchard Park has the benefits of years of experience hosting NFL games and fan familiarity. The site is comprised of 181 acres, most of which is occupied by RWS, parking inventory, Bills administration space and the practice facility. The site has developed several game day traditions has over the years, and is the paradigm game day experience for Bills fans. Deciding to put a stadium solution on this site, either through a major renovation of RWS in addition to the renovation currently underway, or constructing a new stadium on the existing site, would leverage those existing traditions. Also, as the largest potential site considered, the Orchard Park site provides the most parking capacity and resulting tailgating opportunities for fans. Extending the Bills presence here by renovating existing Ralph Wilson Stadium is likely to be the least costly solution to solving some of the challenges of the existing stadium. However, if new ownership deems a new stadium on this site to be the solution, there are only a few locations on which a new stadium can be built without interfering with existing operations. The best available location would be to construct the stadium north of existing RWS in parking lots 5, 6, and 7 on land currently controlled by Erie County. This location also retains the independence and separation for the Bills administration and practice facility. The Orchard Park site is the only potential site evaluated with little to no acquisition costs or the schedule delays that could arise from dealing with existing property owners. Recommendations for roadway and traffic infrastructure improvements are included in the detailed transportation analysis of this site in section IV of this report.

It is important to note that, surveys of Bills fans highlight significant challenges with the Orchard Park site. Access to the stadium's parking lots is greatly underserved by the primary access routes of Abbott Road, Southwestern Blvd and Big Tree Road. Access to the closest high volume road system, Highway 219, is two miles from the stadium parking lots at its closest point. Although it is the largest of the shortlisted sites, like certain other suburban site evaluated, we do not believe the Orchard Park site will promote ancillary retail or destination development due to its roadway challenges and the remote nature of the location. Hence the economic plan with the best community return on investment at this

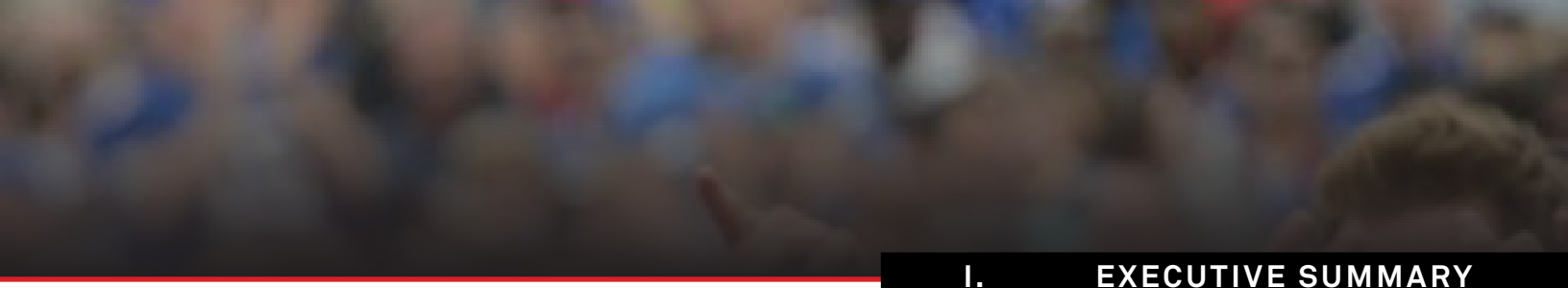


site would be to renovate the existing open air stadium as it is likely to have the lowest capital investment. However for comparison purposes this analysis also includes an analysis of the possibility of constructing a new stadium on the existing site.

SOUTH PARK SITE

The South Park site is the largest of the urban sites being considered, with its potential 122 acres spanning from the Buffalo River to the south edge of I-190. The site has two sections, with the first south of South Park Avenue between Michigan Avenue and Louisiana Street and bordered by Ohio Street against the Buffalo River. The rest of the site being north of South Park Street is between Louisiana Street and Hamburg Street with I-190 as its northern boundary. The north half of the potential site is currently totally comprised of vacated properties that have been taken over by the City of Buffalo. With enhancements to Louisiana and Hamburg Streets, the site would have sufficient access to the high volume traffic of I-190 and would also be within walking range of the parking inventories of the Cobblestone District and downtown Buffalo. The site's far western point is well- suited to development of an intermodal transportation hub with the close proximities of light rail and bus traffic. Although subdivided by South Park Avenue, each half of the site is large enough to support the stadium and its immediate circulation. The southern half of the site borders the Buffalo River, where the river's edge is already under the reconstruction as a waterfront park. The site would also place a stadium between the Cobblestone District and other development projects. With the appropriately scaled mixed use development surrounding the potential stadium, both areas would likely realize an increase in activity and value.

The South Park site also presents a set of challenges. Walking distances from the site to the downtown parking inventories will be increased by a quarter of a mile to half mile when compared to the Cobblestone District or Exchange Street sites. Also, like the Exchange Street site, engaging with the community to further understand potential impediments is appropriate with respect to this site. As the southern half of the site sits adjacent to an established residential neighborhood and would overtake the neighborhood's public Conway Park, replacement of the park and related transition should be considered. From an infrastructure standpoint, the site would require expansions of Louisiana and Hamburg streets along with additional turn lanes and wider entrance and exit ramps to I-190. More detailed recommendations for roadway and traffic infrastructure improvements are included in the detailed transportation analysis of this site in section IV of this report.

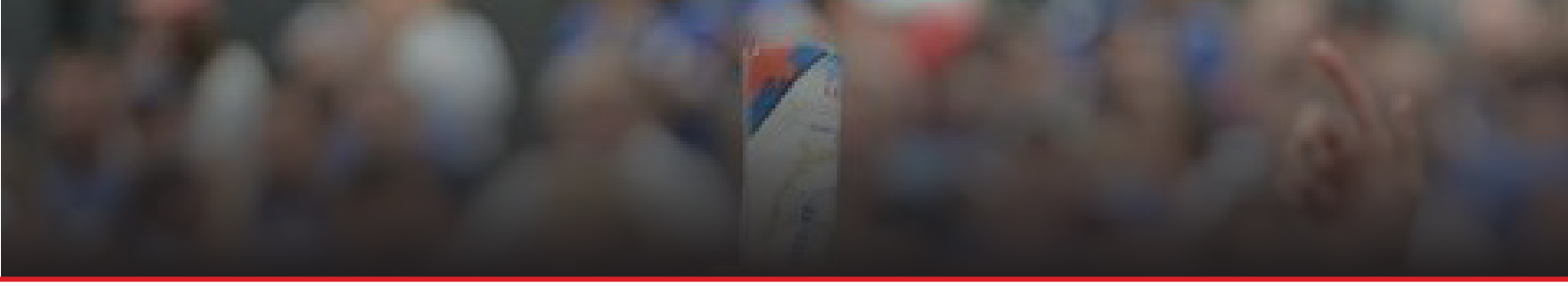


C. NON SHORTLISTED SITES

Of the 13 sites proposed and evaluated, 9 sites were not shortlisted. It is important to note that failure of a site to be included on the "shortlist" does not constitute a definitive dismissal of such site, but is instead and indication based on data evaluated to date that such sites were not as appealing as the shortlisted sites. In the case of each non-shortlisted site, certain obstacles contributed to the decision not to shortlist such sites. In some cases, single "deal-breaker" criterion resulted in a site note being shortlisted (e.g., the site size and/or configuration is not sufficient for an NFL stadium footprint). In other cases, a series of criteria contributed in the aggregate to a site not being shortlisted (e.g., extremely high infrastructure development and related costs, lack of connection with Buffalo icons and lack of access to public transportation). When such criteria were encountered, the site was put on the non-shortlisted list and not evaluated for other criterion. New information including team ownership input should be evaluated as it becomes available and could result in further conversations and evaluation with respect to non-shortlisted sites. Below is a listing of the 9 major site location considerations which were not shortlisted:

- Batavia site
- Central Terminal site
- La Salle Park site
- Niagara Falls site
- Outer Harbor site
- Republic Steel site
- Tonawanda Street site
- University of Buffalo site
- West Seneca site

Section VI below contains a description of the location of each non-shortlisted site and a narrative description of AECOM's evaluation of each such site. Section III below contains a matrix that presents the evaluation criterion for all 13 sites in tabular form, including the non-shortlisted sites.



D. RALPH WILSON STADIUM RENOVATIONS

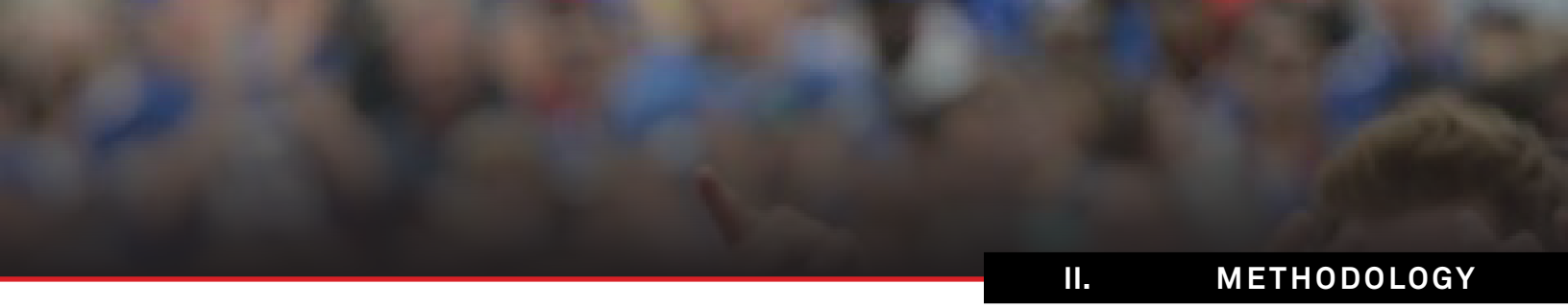
AECOM reviewed and evaluated the plans for the recently completed renovation project at RWS. The RWS renovation project cost approximately $130 million and was completed prior to the 2014 NFL season. The contemplated RWS renovations added value to the facility and are likely to be appreciated by Bills fans. The renovations included upgrading the arrival and concourse experience for fans and upgrading RWS's technological resources, including new HD video boards and Point of Sale technology for better and more flexible food and retail purchasing options. While the current RWS renovation project enhances the fan experience, as technology continues to advance, the existing RWS continues to age and NFL fan expectations continue to evolve, additional renovation projects and improvements to RWS may be necessary in order to entice the team to enter into a renewed long term lease. A comparative analysis of the renovated RWS to other NFL facilities is provided in Appendix A of this report.

While additional renovations projects are possible, significant renovation projects of the type that would likely be necessary to encourage a long term lease renewal will be extensive (as discussed in more detail in Appendix E). The costs associated with undertaking the aforementioned renovations, including possible demolition and rebuilding of the majority of the seating bowl including the upper deck, could exceed $540 million in 2014 dollars, which amount does not take into account any infrastructure improvements. For the renovation AECOM designed for Lambeau Field, a stadium with similar seating bowl challenges, the team was able to retain operations in the existing stadium while renovations were underway. While retaining operations at the facility may be necessary if the decision is made to proceed with a renovation rather than constructing a new stadium, such an approach impacts design decisions, the schedule for completion and the cost of construction. Likewise, if renovation plans prove to be so extensive that retaining operation is not feasible, additional costs would need to be accounted for temporary relocation of the team during construction along with potential loss of revenue. Additional analysis combined with owner input is necessary to facilitate a discussion on merits of deciding to renovate the existing RWS or constructing a new facility.

It is important to note that modernizing and renovating the existing RWS stadium structure will not likely result in the Orchard Park site becoming a candidate for viable ancillary development, as discussed in more detail herein.

I. EXECUTIVE SUMMARY

BILLS



II. METHODOLOGY

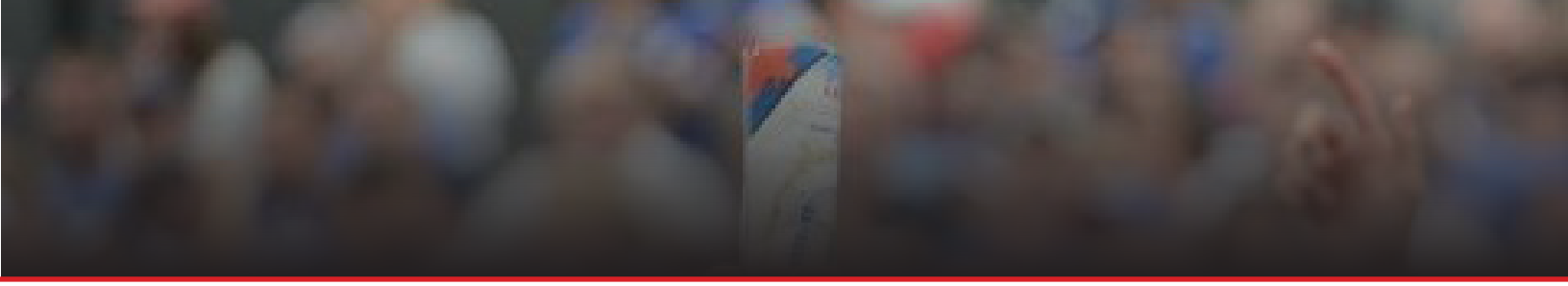
A. INTRODUCTION

There are many influences that create great communities, including a unified connection to great sports teams. Sport has the power to unite communities and cross social and economic boundaries by creating a communal identity and the sports stadium often comes to symbolize that identity and drive ancillary development. When designed properly, sports venues create sports destinations that surpass the game itself and create event destinations. In short, it is more than a game. The contrast between an isolated stadium venue and a stadium that is integrated into a vibrant community context can be the difference between a franchise that is merely located in a city and one that is a part of the city's sense of pride, identity and energy.

The purposes of this analysis are to (i) identify potential locations in Western New York that could support an NFL stadium and game experience worthy of the Buffalo Bills fans, including the current stadium site, (ii) evaluate each potential location and identify those locations that appear most viable for a first class NFL facility, (iii) evaluate the potential of the existing stadium site and provide input on the long term viability of Ralph Wilson Stadium as an NFL venue, (iv) provide case studies of certain existing NFL stadiums, (v) develop a generic stadium cost and revenue model for the Buffalo market, and (vii) compare the potential ancillary development programming and economic impacts at each potential stadium site.

While the number of "potential" stadium sites is infinite, this analysis focuses on the evaluation of 13 stadium site locations proposed by various stakeholders that AECOM deemed potentially viable. Every site considered in this analysis has unique opportunities, benefits, challenges and constraints related to infrastructure, access, real estate acquisition and community influences, among other considerations. The 13 proposed stadium sites were evaluated using quantitative and qualitative criteria based on essential and desired NFL game day environment characteristics. Essential criteria include sufficient site area and orientation to accommodate stadium development and acceptable infrastructure improvement costs; desired criteria include ancillary development potential, iconic impression potential and naming rights visibility, among other things. A summary matrix of the 13 potential sites and the criteria used to evaluate such sites is set forth on in Section III of this analysis.

This analysis includes both graphic depictions and a written examination of the shortlisted sites, which have the best potential for successfully implementing an NFL stadium. In addition, this analysis also provides background information as to the base program for a potential stadium, either as an open-air, football focused stadium or domed, multipurpose stadium, and a comparison of that base program to certain other NFL stadiums; however each such NFL stadium program must be viewed as a specific solution to the market and particular business model of its host city.



Investigations into concealed conditions such as Geotechnical soil conditions and existing utility infrastructure conditions are outside of the scope of this analysis, but will be necessary prior to moving forward with any of the potential stadium sites. Further, this analysis does not include or represent an Environmental Impact Statement, which may be required for certain sites.

B. HISTORY

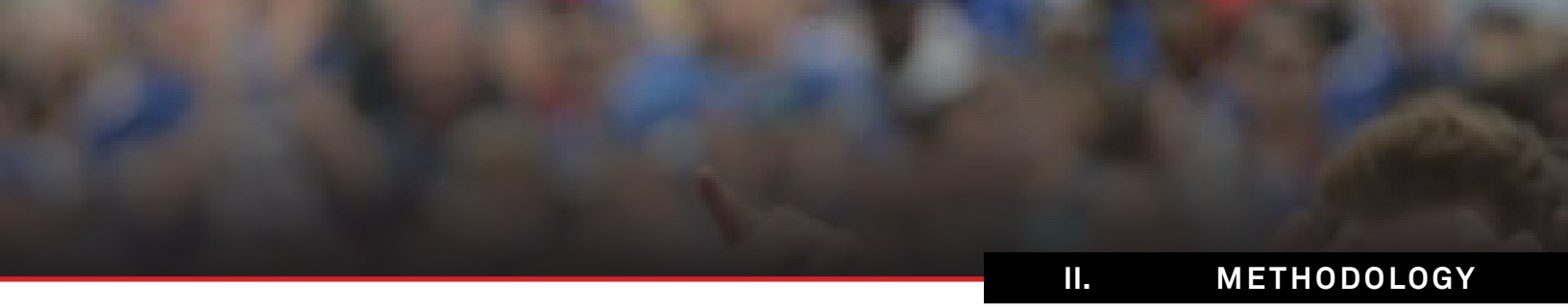
The Buffalo Bills are a source of pride and unity for the City of Buffalo and the region of Western New York. The Bills are also one of the few NFL franchises to benefit strongly from multi-national connections, as a contingent of fans commute from Toronto and throughout the province of Ontario, Canada to Buffalo for Bills games. From the team's founding in 1960 by owner Ralph Wilson until 1973, the Buffalo Bills played at the corner of Jefferson and Best streets, just north of Downtown Buffalo, at a stadium nicknamed the "Rock Pile." However, with the Bills' commission into the newly merged National Football League in 1970, it became necessary for the Bills to have a new larger and more modern home. After much debate and years of litigation, a new stadium (named Rich Stadium at the time) opened in 1973 in the Buffalo suburb of Orchard Park. This stadium, renamed Ralph Wilson Stadium in 1998, remains the home of the Buffalo Bills today. It has undergone numerous renovations and upgrades over the years, including a $130 million dollar renovation completed the same year of this study. Evaluation of the long term viability of Ralph Wilson Stadium as an NFL venue is outlined in Section VIII.D. of this analysis.

C. CONTEXT

The City of Buffalo's economy is currently expanding and diversifying, driven in large part by advances in the healthcare and education sectors. As home to the corporate headquarters of two major banks, Buffalo also has a strong presence in the financial industry. The central business district of Buffalo has seen a resurgence led by private investment in housing and corporate construction. The City of Buffalo reports that 4,400 new private sector jobs were added in 2013. To help bolster this economic growth, Governor Cuomo has committed to invest $1 billion in state funds in Buffalo, which is now commonly referred to as the "Buffalo Billion." Major construction is underway in the core of downtown Buffalo in the form reshaping the Buffalo Niagara Medical Campus, and there are plans to develop a Buffalo High Tech Innovation Hub. In addition, development plans are either underway or under construction to draw new life to Buffalo's waterfront. Such developments include building upon the Canal side development with the new HARBORCENTER and future development plans e.g. Outer Harbor or the Erie Canal Harbor developments. It is reported that nearly $10 billion dollars in total construction investment is planned across the Buffalo/Niagara region1 with a great deal of focus and attention being paid to the central core of the city.

The population of Western New York region (defined as Erie and Niagara Counties) is currently at 1.1 million and expected to grow by 17% by the year 2040.[1]

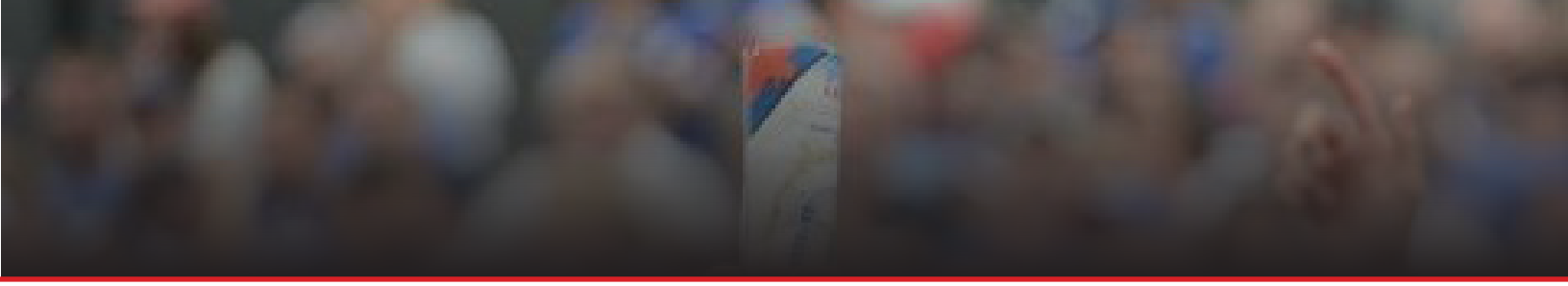
[1] Greater Buffalo Niagara Regional Transportation Council, 2040 Metropolitan Transportation Plan Update http://www.gbnrtc.org/files/8014/0016/3887/GBNRTC_2040_MTP_Update_-_FINAL_May2014.pdf



D. STADIUM PROGRAM DRIVERS

A primary driver for evaluation of potential stadium sites is the business model and resulting space program for the facility. A stadium's successful return on investment and contribution to the community depend on balancing the number events held at the stadium with stadium program and budgetary considerations. There are two distinct options to consider when evaluating a business model for large assembly stadiums: an open-air, football-focused venue and a domed roof (retractable or non-retractable), multi-purpose venue. The presence of a domed roof on a stadium can increase stadium usage, but come at an increased capital cost. Factors that can impact the potential need for, and usage of, an enclosed dome stadium include the following:

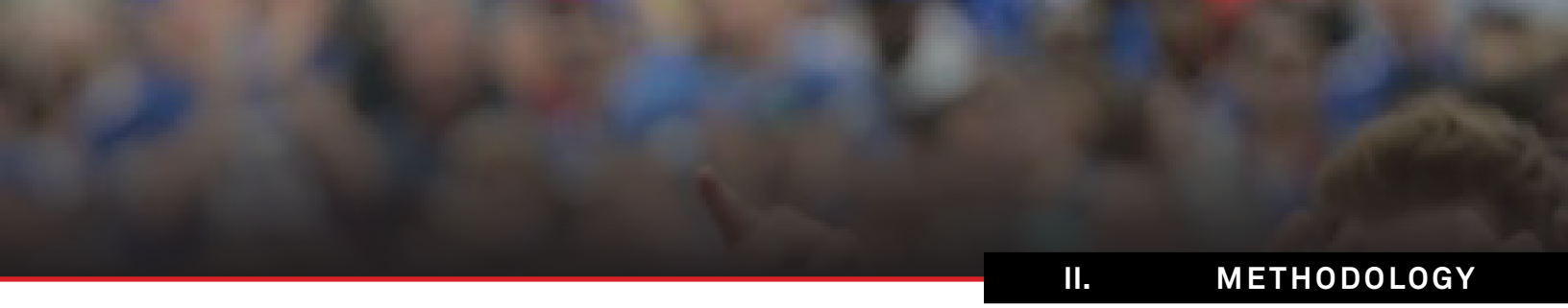
- **Weather** – An enclosed roof provides obvious protection from bad weather during the NFL season, particularly in cold climates such as Buffalo's. In the NFL, examples of domed stadiums include cold market stadiums such as Indianapolis (Lucas Oil Field) and Detroit (Ford Field) and warm market stadiums such Houston (NRG Stadium), Dallas/Arlington (AT&T Stadium) and Phoenix/Glendale (University of Phoenix Stadium).
- **Sport-Specific Uses** – An open-air stadium is precluded from hosting certain sports (e.g., basketball) that are sometimes held in large stadiums primarily used for football. For example, many NFL stadiums with domed roofs (retractable and non-retractable) have hosted the NCAA Final Four and earlier rounds of the NCAA men's basketball tournament.
- **Other Uses** – In addition to sporting events, an indoor stadium can also host a wide range of non-sport related public and private events that cannot be held in an outdoor facility. For example, many of the indoor stadiums in the NFL host large trade shows and other business and consumer events on the stadium floor, in meeting rooms and in club areas. Domed stadiums in Indianapolis and St. Louis are a significant part of the cities' convention space offerings, which helps to increase the facilities' non-football usage.
- **Surrounding Environment** – For certain uses, such as trade shows, event organizers generally prefer or require that a facility be located in the immediate area of complementary land uses such as hotels, restaurants and other forms of entertainment. As a result, an indoor stadium will generally have greater success in booking these kinds of events if it is part of a larger district development or urban area rather than a suburban setting surrounded by acres of parking that isolate a facility from other development.
- **Ability of Market to Attract Events** – The ability of a market to attract and host major stadium events such as NCAA Final Fours, major concerts and trade shows also contribute to the number of non-football events held at a stadium. Market characteristics such as climate, number of hotel rooms, other local attractions and general destination appeal all contribute to a market's ability to attract such events.



While domed stadiums can support a much larger number of events and create value both for the venue and surrounding ancillary development, they also cost significantly more to construct and maintain. Enclosed stadiums come with either a fixed dome or retractable roof and mitigate weather-related risks for events held at the stadium. Truly viable multi-purpose venues reside as part of larger developments including hotels, retail and other destination attractions. Without the existence of or potential for these types of ancillary development on or directly adjacent to a potential stadium site, the additional incremental investment of a domed venue is diminished.

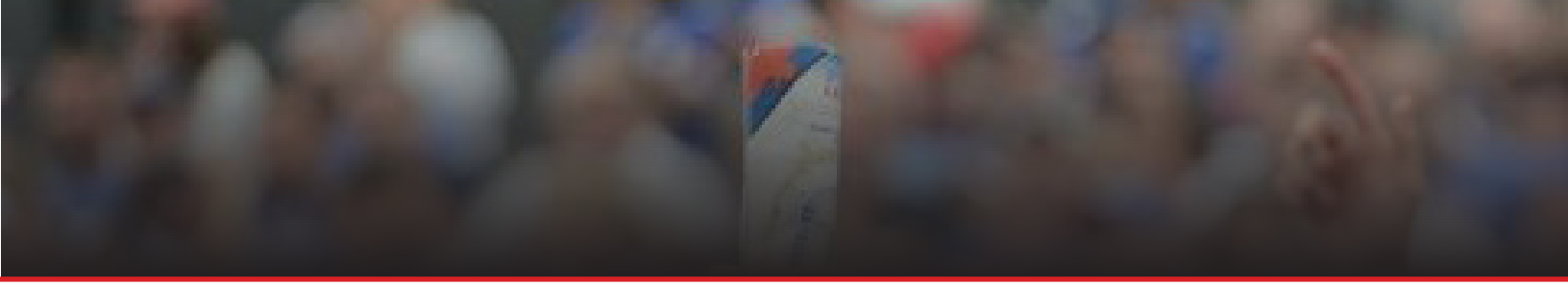
The addition of a retractable roof further adds a significant incremental expense to a domed stadium's construction cost. In addition, depending on materials used, local climate and the number of times a roof is opened and closed, it can also impact operating expenses. Historically the incremental usage of a roofed stadium does not guarantee the stadium will generate revenue commensurate with its additional usage. The majority of a NFL stadiums' revenues and expenses are generated by the 10 home NFL games per year held at the facility, before considering any revenue-sharing arrangements between a team and facility owner. Domed stadiums also have a much better record of revenue generation when used as trade show venues rather than convention center expansions, as conventions consumers demand highly flexible and numerous meeting room options that are difficult to implement in NFL stadium facilities. We note that convention usage affects hotel occupancy rates immediate to the facility more than trade show usage, as trade shows are regionally attended and do not dramatically affect hotel occupancy.
Many events held at domed stadiums, (e.g., the hundreds of community events that had been held at the Metrodome in Minneapolis), may be unticketed or have very low attendance levels. However, where a stadium is a major part of a community's public-event space throughout the year, and is supported by complementary development, revenue generation from non-NFL events can be more significant (such as Essence Music Festival at the Superdome in New Orleans). Conversely, open air stadiums are directly sports focused. As such, square footage, systems and operations costs are dramatically less than costs for multi-purpose stadiums. Thus, the capital investment in open air stadiums is lower than domed stadiums, but the lower cost comes at the expense of having more limited event options at the facility. In the last twelve years, there have been 13 NFL teams playing in 12 either new, or dramatically reconstructed stadiums. Of those 12 stadiums, 7 were built as open air stadium, 1 was built as a fixed dome stadium and 4 were built as retractable roof stadiums. (New York Giants and New York Jets share MetLife Stadium)

The following tables show a sample event calendar and estimated operating revenues and expenses for a "generic" open-air and roofed (either retractable or fixed dome) NFL stadium, based on the building program assumptions described in Appendix section B of this report. The major physical difference between the two facility types, aside from the obvious roof feature, is approximately 12 meeting rooms and back of house support spaces in the roofed scenario that would be added to support trade-show use of the stadium. These assumptions are not specific to the Buffalo area, as we have not completed a market analysis and results could vary significantly based on the site being considered.



	Open Air Stadium			Domed Stadium (Fixed or Retractable Roof)		
	# of Events	Avg. Atten.	Total Atten.	# of Events	Avg. Atten.	Total Atten.
Bills - Preseason	2	45,000	90,000	2	45,000	90,000
Bills - Regular Season	8	65,000	520,000	8	65,000	520,000
Concerts & Other Stadium Events (Major)	1	40,000	40,000	2	40,000	80,000
Concerts & Other Stadium Events (Minor)	2	7,500	15,000	3	7,500	22,500
Meetings and Conferences/Social Events	10	150	1,500	15	150	2,250
Conventions and Trade/Consumer Shows	0	3,000	0	12	3,000	36,000
Community and Other Events	2	5,000	10,000	15	5,000	75,000
Total	**25**		**676,500**	**57**		**825,750**

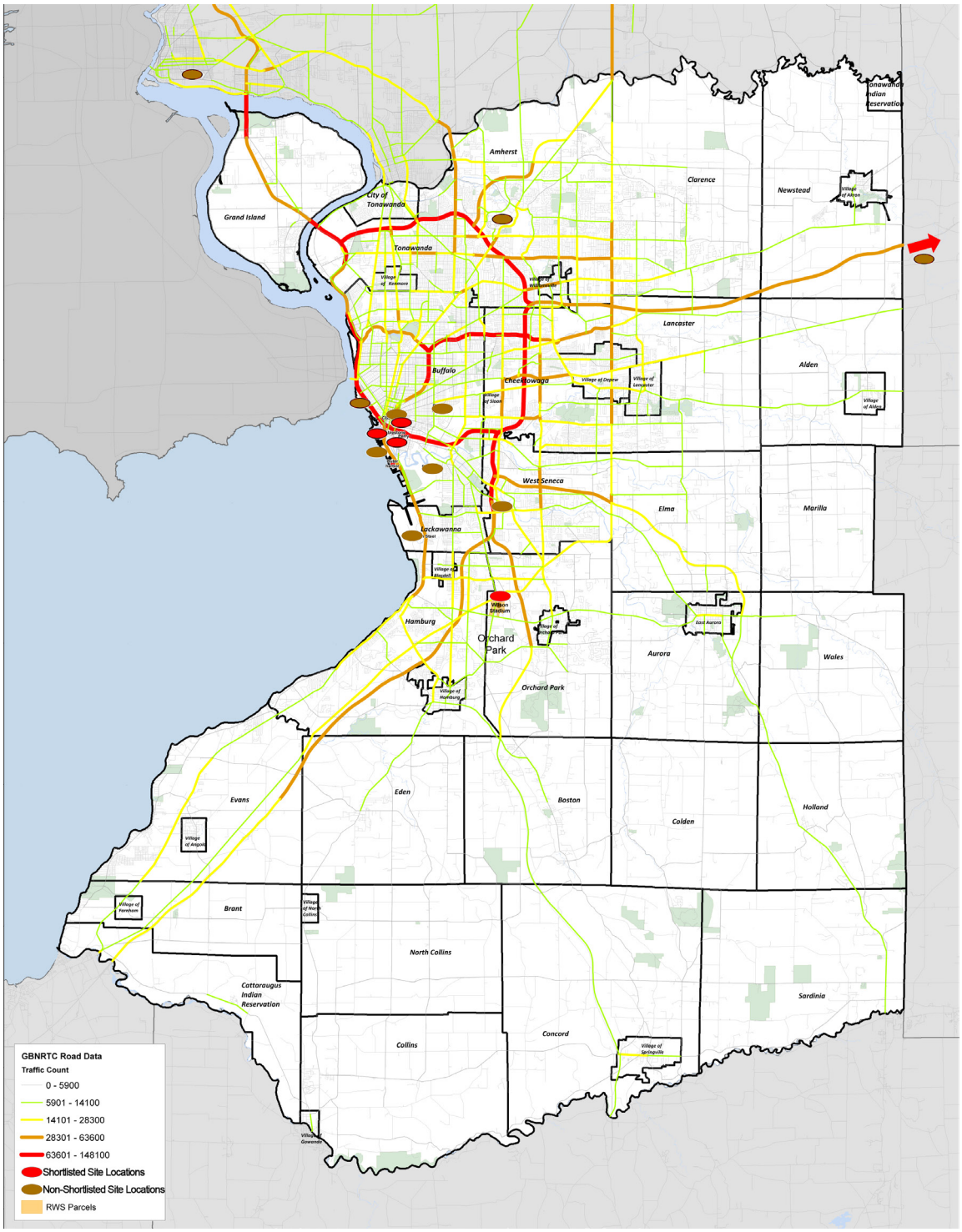
	Open Air Stadium	Domed Stadium
Total Operating Revenues (000s)	$70,334	$72,869
Total Operating Expenses (000s)	$19,944	$20,702
Net Operating Income (000s)	$50,390	$52,167



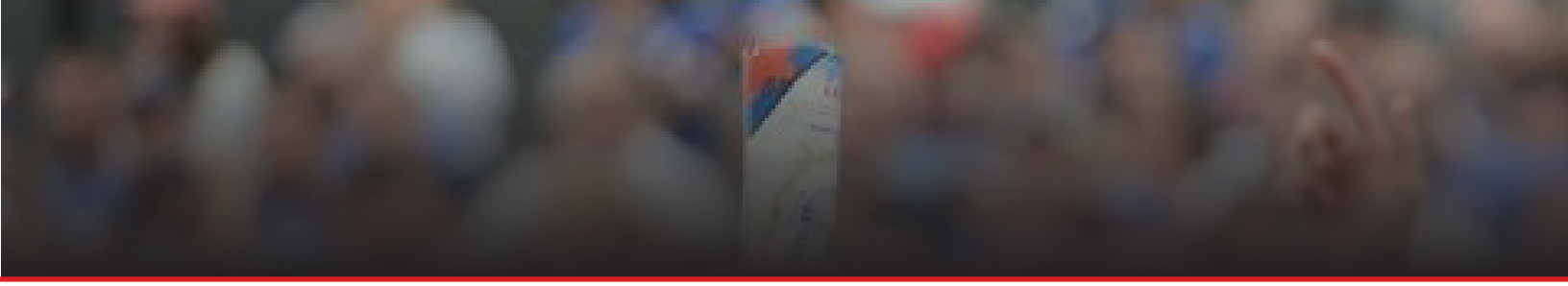
E. PROCESS

Scope. The steps taken by AECOM to evaluate sites for a new Buffalo NFL stadium were open and without bias or preconceptions. AECOM evaluated the 13 most viable sites proposed by various stakeholders, including private developers, the City of Buffalo, Eire County, Empire State Development and the evaluating AECOM team. Proposed sites included urban, suburban and rural sites. At no time was a site outside of western New York considered as part of this study as Governor Cuomo has repeatedly indicated that keeping the Bills in Western New York is a priority. The sites evaluated include:

- Batavia Site
- Central Terminal
- Cobblestone District
- Exchange Street Site
- Republic Steel Site
- South Park Site
- University of Buffalo Site
- La Salle Park Site
- Niagara Falls Site
- Orchard Park Site
- Outer Harbor Site
- West Seneca Site
- Tonawanda Street Site



MAP OF SITE LOCATIONS WITH MAIN TRANSPORTATION ROUTES



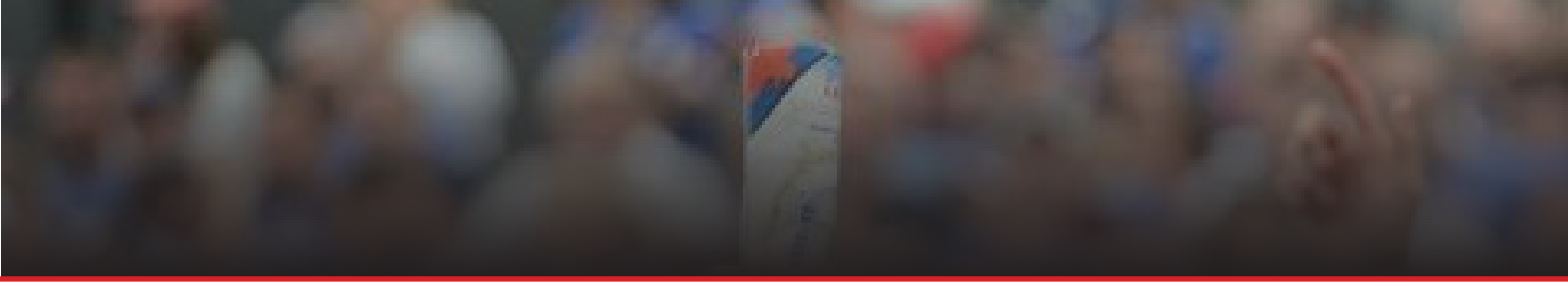
Criteria. In its analysis, AECOM utilized a list of evaluation criteria derived from years of experience developing the best of NFL game day experiences. Section III of this analysis contains a listing of evaluation criteria. The criteria span across all types of users and stakeholders for the venue as well as influences for the city and region. Of the 13 principal sites considered, 4 sites were shortlisted as providing the most viable options for an NFL stadium in the Buffalo region. In some cases, single "deal-breaker" criterion resulted in a site note being shortlisted (e.g., the site size and/or configuration is not sufficient for an NFL stadium footprint). In other cases, a series of criteria contributed in the aggregate to a site not being shortlisted (e.g., extremely high infrastructure development and related costs, lack of connection with Buffalo icons and lack of access to public transportation). Consideration was also given to the existing Western New York's regional economic development plan which embraces the principles of smart growth which concentrates investment in areas where infrastructure already exists. This involves reviving downtown and main streets and generally increasing the vitality of our region's downtown cities, villages and town centers. For new infrastructure investments, the Western New York economic plan advocates projects that enhance walkability and transportation options, fosters transit oriented development, enhances access to our waterfront and strengthens established neighborhoods. The region's smart growth initiative is intended to encourage private investment, create an environment that employers and employees find appealing, that people want to live in and visit, and that creates a sustainable 24/7 sense of vibrancy and economic vitality. History of stadium developments (e.g. Most recently, MetLife Stadium at the Meadowlands) as proven the ability of stadium developments to stimulate and promote the viability of public transportation options and their role in the fabric of their communities. As stadium site selection process moves forward, further engagement with NFTA transportation studies will be warranted to uncover benefits for both the stadium and the greater Buffalo community.

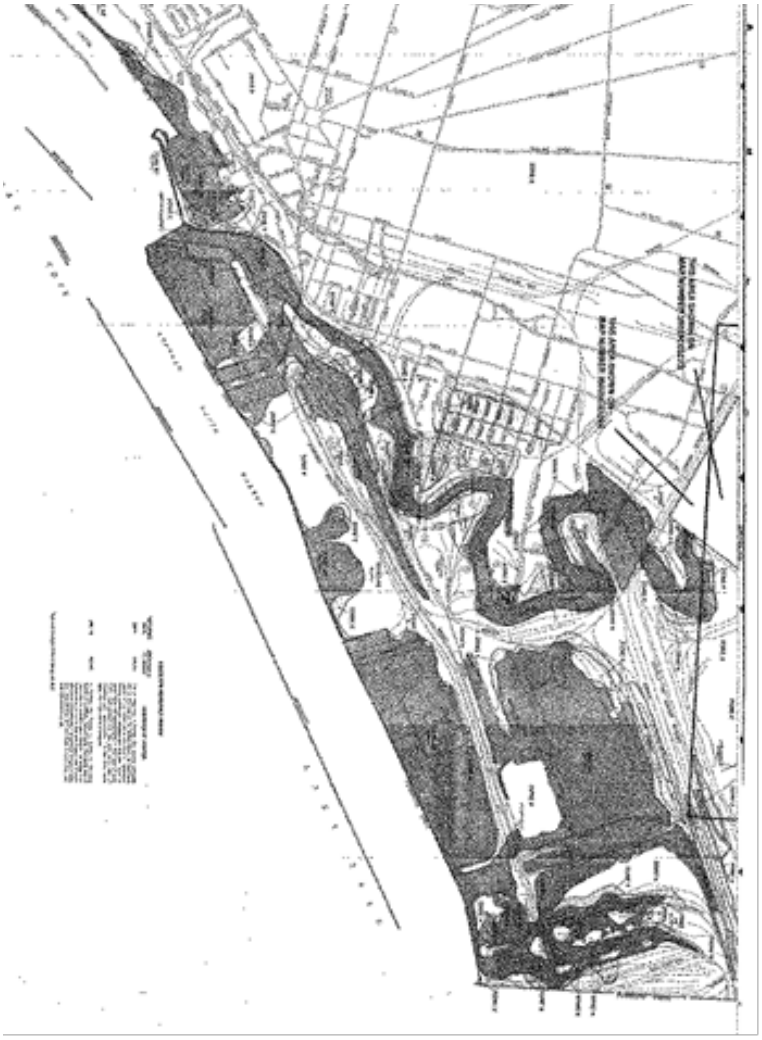
Stakeholder Meetings. As part of this analysis, Foley & Lardner LLP facilitated meetings with certain key stakeholders, including:

- State and local elected officials and their representatives
- Community business leaders
- Niagara Frontier Transportation Authority
- Empire State Development
- USA Niagara Development Corporation

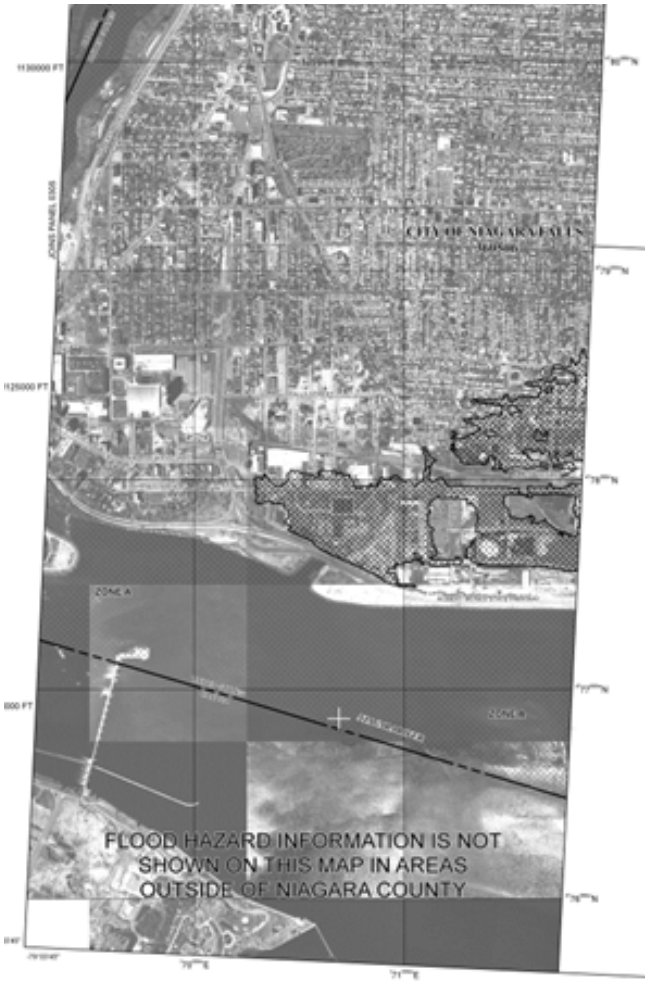
Notably, this analysis was conducted without input from the Buffalo Bills management or ownership, or the NFL.

DOWNTOWN AVAILABLE PARKING INVENTORY

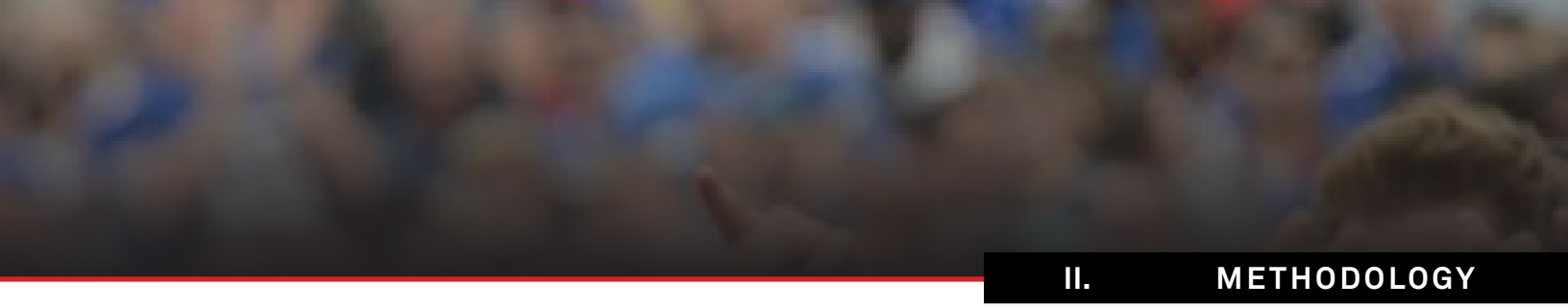




FEMA FLOOD MAP - BUFFALO



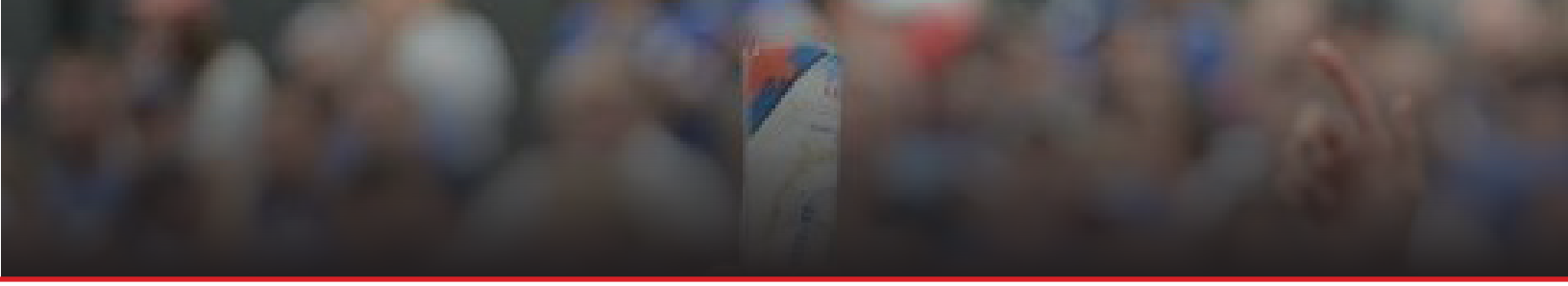
FEMA FLOOD MAP - NIAGARA



II. METHODOLOGY

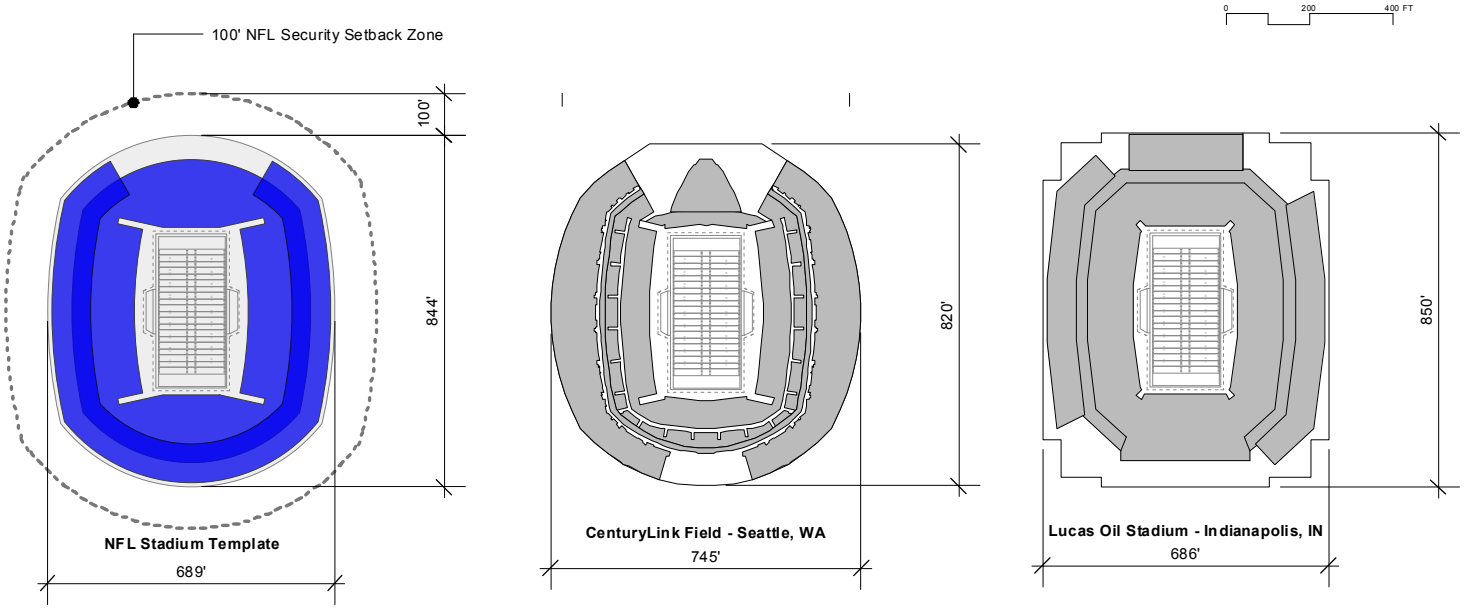
AECOM Expert Analysis. AECOM experts evaluated each site for its proximity or availability of multiple large volume points of access. For the urban sites, the AECOM design team analyzed location of parking inventories, pedestrian routes and available public mass transit systems. The shortlisted urban sites have the benefit of dispersion of egress traffic as most people will be leaving the site as pedestrians and walking into the downtown to get to multiple parking lots and the potential for spin off activity and revenues to local businesses in the downtown area. If any urban site is selected, Main Street Buffalo has potential to become a post-game environment with great energy and linkage to businesses if utilized as a pedestrian/light rail connector to a downtown sports district. As described in the "Transportation Analysis" portion of the report Section IV of this analysis, each shortlisted site in Section IV of this analysis was evaluated for major roadway or bridge construction required for good vehicle and pedestrian flows. Those concepts were reviewed further for potential costs ranges each site could anticipate requiring which are listed in the Evaluation Summary included in Section III of this report. For the urban sites, the primary issues concentrate on access and location of available public parking. A Desman Study performed in 2008 identified 32,730 available spaces system-wide in the downtown Buffalo core area. Of these spaces, 8% are curbside, 56% are located in publicly available off-street facilities and the remaining 36% are located in private/restricted off-street parking facilities. Occupancy rates for those parking spaces averaged 76% even during peak hours between 9:00 am and 2:00 pm. During NFL Sunday game times, and evening games on Mondays and Thursday, this utilization would be significantly lower and would provide spin off revenues for local businesses as stadium patrons' infill the parking down times and patron businesses walking to and from the potential stadium. The diagram on Page 23 of this report depicts available public parking inventories in the core downtown area of Buffalo.

AECOM also conducted a preliminary assessment the sites' immediately apparent environmental conditions, but without going so far as to conduct geotechnical or any exploratory investigations. Some of the sites reviewed were already considered brownfield sites (i.e., a site previously used for industrial purposes that may be contaminated) or had existing landfill conditions). While brownfield conditions were not a sole reason for elimination of a site, there was consideration for the cost and time for remediation of the site in relative terms. Shortlisting of a site does not indicate a conclusion or suggestion that such site's soil condition is ready to build upon. Further, geotechnical and environmental evaluations should be part of a final site selection process. Finally, sites near the Buffalo River, the Niagara River, the Cazenovia Creek and Lake Erie were reviewed for their position within FEMA's mapping of 100 and 500 year flood plains as shown by the flood maps on page 24 of this report. Those sites included sites of Niagara Falls, the Outer Harbor site, the Republic Steel Site, and the West Seneca Site. The Outer Harbor and West Seneca sites were the only sites of those evaluated with partial impact from either the 100 year or 500 year flood plains.



Model Stadium Program and Stadium Footprint Template. A model stadium program for a simple modern NFL facility was utilized for the purposes of evaluating size and influence of the stadium at the various proposed sites. A description of the model stadium program is included in Appendix B of this analysis. Within the framework of this report, the potential sites were evaluated in the context of whether a fixed domed stadium, a retractable roof domed stadium or an open air stadium would be preferable and AECOM makes recommendations based on the factors described above. Ultimately, the decision of what type of stadium (retractable roof, open air, or domed stadium) will best fit the business model is yet to be determined.

A unified stadium footprint template was utilized to evaluate each proposed site's ability to accommodate a building the scale of a NFL stadium in its proper orientation. Proper orientation is a more critical factor in open air or retractable roof stadiums due to the field's orientation to the solar path during game time. Domed stadiums by their nature give more flexibility to this issue. That template used in the analysis was derived as a combination of the similar NFL facilities of Lucas Oil Stadium in Indianapolis and Century Link Field in Seattle. Also included in the template is a demarcation of a NFL recommended security boundary of 100 feet. Inside this line, current NFL security measures restrict the parking of public vehicles and call for screening of vehicles used in stadium operations. A summary of the potential construction and related costs for the model stadium program is set forth in Appendix D on page 86 of this analysis.

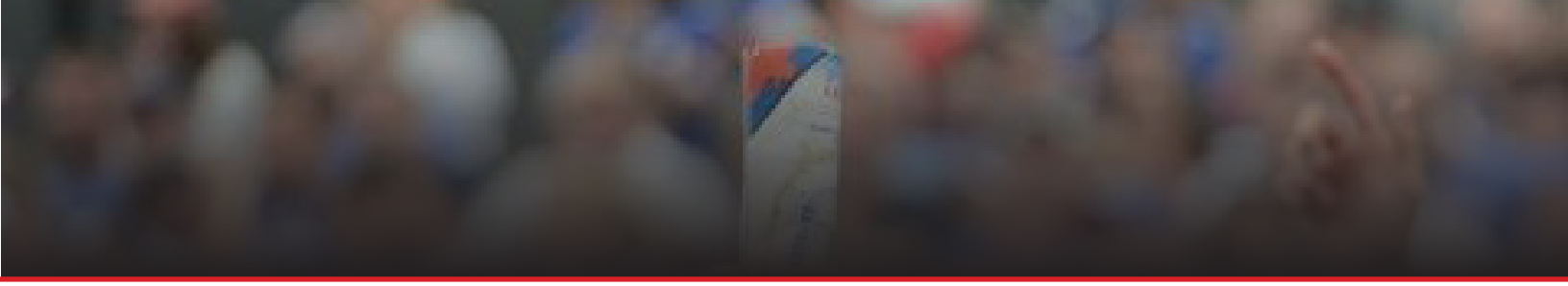


- 65,000 Seats
- 100 Suites
- 7,500 Club Seats
- 1.86 million Square Feet

- 67,000 Seats
- 98 Suites
- 7,500 Club Seats
- 1.65 million Square Feet

- 63,000 Seats
- 137 Suites
- 7,100 Club Seats
- 1.9 million Square Feet

II. METHODOLOGY



The table depicted the two pages below summarizes the evaluation of the potential sites and the criteria used. Shortlisted sites are outlined in the white columns while the non-shortlisted sites are shaded. It is important to note that failure of a site to be included on the "shortlist" does not constitute a definitive dismissal of such site, but is instead and indication based on data evaluated to date that such sites were not as appealing as the shortlisted sites.

	SHORTLISTED SITES					
	Cobblestone	Exchange Street	Orchard Park	South Park	Central Terminal	Outer Harbor
Site Size						
Sufficient Size/config for Stadium Footprint	Yes	Yes	Yes	Yes	**No**	Yes
Roadway improvements						
Street/Ramps/Walks	$50M - $100M	$100M - $150M	$50M - $70M	$200M - $250M	TBD	**$800M - $1B**
Existing Conditions						
Area (Acres)	24	21.3	181	122	42	181
Distances						
Miles to I-190 or I-90 Ramp (miles)	0.2	0.1	2.5	0.1	1.5	1.1
Parking						
On Site (# of Cars)	800	350	12,000	6,000	Unknown	Unknown
< 3/4 Mile; walkable distance (# Cars)	12,000	15,000	2,000	2,180		
Public Transportation[1]						
Light Rail	Yes	Yes	No	Yes	No	No
Regional Rail	Yes	Yes	No	Yes	No	No
Ancillary Development[2]						
On Site Potential	No	Yes	No	Yes	No	Yes
Synergy potential with Sports	Yes	Yes	No	No	No	Yes
Entertainment context in close proximity(< 3 blocks walkable)	Yes	Yes	No	Yes	No	No
Schedule conflict with adjacent uses (i.e. parking, sound, light)	Yes	Yes	No	Yes	Yes	Yes
Iconic Impression Potential[3]						
Connection with Notable Buffalo Icons	Yes	Yes	No	No	Yes	No
Money Shot View	Yes	Yes	No	Yes	Yes	Yes
Additional Revenue Potential[4]						
Building Naming Rights Visibility	Best	Best	Little	Best	Little	Good
Secondary Sponsors Visibility	Good	Good	Only up Close	Only up Close	Only up Close	Good
Sustainability Potential[5]						
Easily obtainable Energy potential for low or zero energy options	Yes	Yes	Yes	Yes	Yes	Yes
	Yes	Yes	Yes	Yes	Yes	Yes

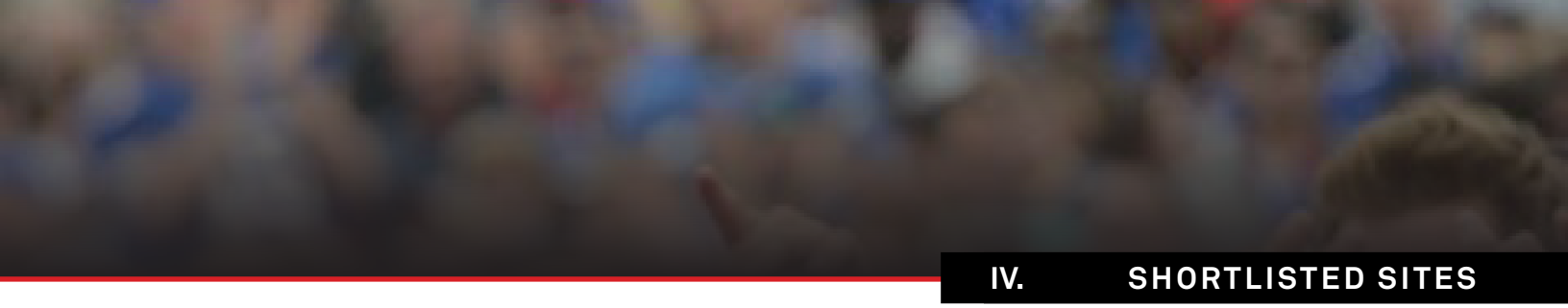
Parcel Assessed Value	Parcels	Assessed Value	Parcels	Assessed Value	Parcels	Assessed Value	Parcels	Assessed Value
# of Parcels / Assessed Value[7]	17	$21,811,400	16	35,260,200	6	$170,398,200	199	12,371,150

III. SITE EVALUATION SUMMARY

NON SHORTLISTED SITES						
La Salle Park	Niagara Falls	Republic Steel	University of Buffalo	Towanda Street	West Seneca	Batavia
Yes	Yes	Yes	**No**	**No**	Yes	Unknown
TBD	**$800M - $1B**				**Unknown**	
100	136	131	47	116	113	Unknown
Unknown **0**	Unknown	Unknown	Unknown	Unknown	8,240 **Un Committed**	Unknown
No No	No No	No No	No No	No No	No No	No No
No **No** **No** Yes	Yes No Yes No	Yes **No** **No** Yes	**No** **No** **No** **Yes**	**No** **No** **No** No	Yes No Yes No	**No** **No** **No** No
Yes Yes	Yes Yes	**No** **No**	**No** **No**	No No	No No	**No** **No**
Best Good	Good Only up Close	Little Only up Close	Good Only up Close	Good Good	Best Good	Good Only up Close
Yes Yes	Yes Yes	Yes Yes	Yes Yes	Yes Yes	Yes Yes	**No** Yes

Notes

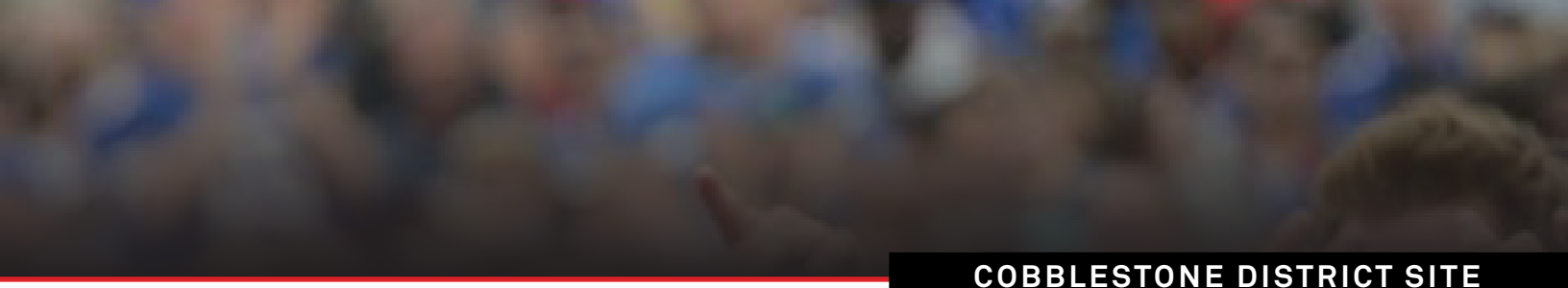
1. Is access to Public Transportation currently available within acceptable walking distance (< 1/2 mile)
2. Is there the potential or obsitcles to future ancillary and revenue generating development
3. Does the site offer visual connection of the site to landmarks, architecture, or spaces that are unique to Buffalo and which could showcase Buffalo's unique features to a national TV or visiting audience.
4. Will naming rights graphics be readily visible from either passing vehicles or money camera shots of the stadium to maximize return on investment potential for the sponsor.
   Most visibility = Best; Moderate Visibility = Good; Least Visbility (Only Up Close) = Little
5. Will the site offer the opportunities for reliable energy and opportunities for sustainable approaches to reduce the energy use of the stadium.
6. For Non Shortlisted sites, items identified in **RED** are significant and need additonal investigation/resolution for the site to be considered for the shortlist.
7. Assessment listings are shown for comparative purposes only and do not represent fair market value of the properties nor the cost of acquisistion.



IV. SHORTLISTED SITES

Through the course of creating this analysis, thirteen (13) different site opportunities were proposed and evaluated by the AECOM team. Those sites include both urban and suburban sites within Buffalo city proper and the surrounding communities. Utilizing a carefully crafted set of criteria demonstrated by successful NFL stadiums, 4 sites have stood out as having the greatest potential for successfully implementing a NFL stadium, including 3 urban and a long term stadium solution (ie renovation or new) on the existing Ralph Wilson Stadium site in Orchard Park. Each shortlisted site has its own list of strengths, weaknesses, benefits and challenges that are summarized herein and is outlined in tabular form in page 28 of this analysis. As stated previously, there is no one perfect site in its current condition. An opinion will be given as to the type of venue; open-air vs domed, which will best suit the site from a planning perspective. The impact on cost and potential revenue will also be outlined. The 4 sites (3 shortlisted sites plus the existing Orchard Park stadium site) are presented here in simple alphabetical order without representation of ranking.

COBBLESTONE DISTRICT



COBBLESTONE DISTRICT SITE

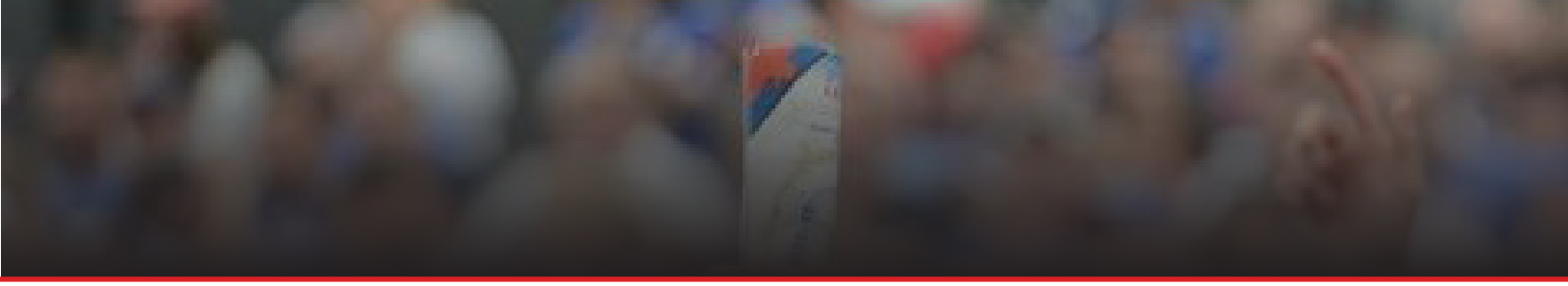
I. PLANNING ANALYSIS

The Cobblestone District's history dates back to the origins of the City of Buffalo. With many of its buildings originating as far back as the 1850's, the district was designated as a local historic district in 1994 in response to demolition resulting from the construction of the First Niagara Arena. Bounded by Michigan Avenue to the east and Illinois Street to the west, Scott Street to the north and South Park Avenue to the south, the Cobblestone District site is located in an area that is part of Buffalo's urban renewal. The Cobblestone District's adjacencies with the First Niagara Center Arena, HARBORCENTER and Coca Cola Field create the potential for a new stadium to develop an iconic sports district and further the development and renewal of downtown Buffalo. This connection to other retail and mixed use development make the Cobblestone District site a good candidate for construction of a domed, multi-purpose stadium with program to attract business conferences and other mixed use that would realize the benefit that a higher number of events and patrons a domed stadium would bring.

More than any of the other proposed sites, the Cobblestone District site will benefit from available public and mass transit. Within a block of the site, there is access to both a light rail station and an Amtrak commuter station, creating a potential intermodal hub. Parking will be delegated to the utilizing downtown inventory of which there are approximately 12,000 spaces within a ¾ mile radius and over 15,000 spaces within a one mile walking distance. A more detailed transportation analysis is set forth below.

The site is not without significant challenges, however. Its historic nature combined with potential archeological conditions may create hurdles for development. The footprint of a stadium would most likely occupy the south-eastern portion of the site as illustrated in the site diagram on page 32. Careful and thoughtful planning of stadium design elements should allow the existing buildings along Illinois and Mississippi Streets to remain intact during and after stadium construction. Such design elements that may accomplish this include incorporation of an asymmetrical sideline bowl design approach as employed in existing NFL stadiums such as in Chicago at Soldier Field, or even incorporation of existing buildings into the structure of the stadium, as is the case in Detroit at Ford Field. This could result in shorter overall width of the stadium and thus allowing the facility to fit into the district. Even with the requisite acquisitions, the site will need to address the NFL's required security issues, including the NFL's 100- foot recommended secure zone. Public traffic to surrounding properties on game day may be impacted and closures to Michigan and South Park Avenues may be required.

The constricted site area will result in a stadium placement outside the optimal stadium orientation, meaning the site will only accommodate a fixed roof facility due to weather considerations. Further, due to the requisite closure of Perry street west of Michigan Avenue to Illinois Street, First Niagara Center traffic will be diverted to the First Niagara parking ramp to access from the west and south only. As discussed in more detail in the transportation analysis below, road improvements will be required to enlarge Michigan Avenue from South Park to Seneca to facilitate better load-in and load-out of the stadium as well as to improve pedestrian movement from the downtown area to the stadium. The cost of such improvements would likely cost between $50 million and $100 million, but as noted otherwise in the report, many of these changes are consistent with the master planning for downtown and may occur irrespective of the development of a new stadium (see Section III).



II. TRANSPORTATION ANALYSIS

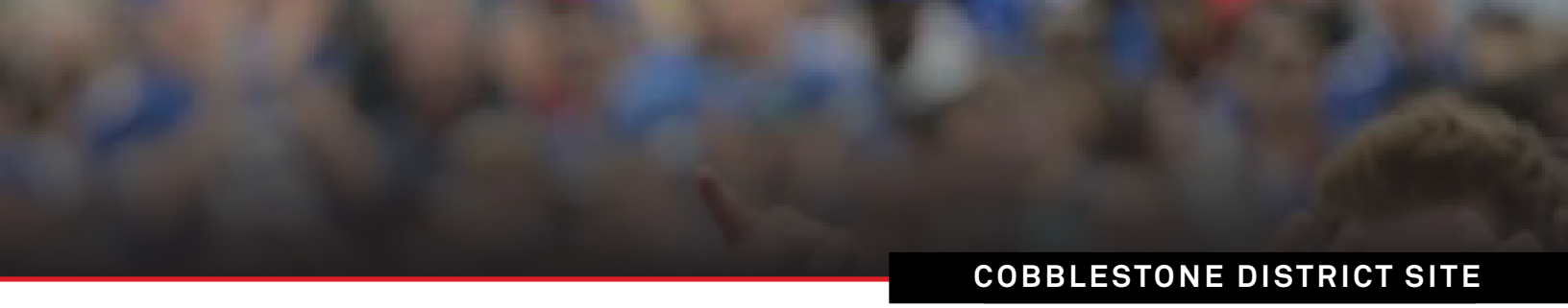
Reference Appendix Section C, Trip Generation Analysis, for the traffic volume basis of design for a generic NFL stadium in Buffalo, utilized in the transportation analysis below.

1. Estimated transportation mode share:
   - Via Transit
     - Light rail — 15% as primary mode; 15% as secondary mode (to/from parking); 30% total
     - Public bus — 5%
     - Charter bus — 2%
     - Hired Car — 3%
     - Auto — 45% park within ½ mile (park/walk access); 30% park in downtown parking (park/LRT-shuttle-walk access)

2. Parking
   - Total event parking needs — 14,000 – 16,000 spaces

3. Guest trip generation to the site and surrounding downtown areas
   - Arrival during pre-game highest hour (2 hours prior to game time):
     - 2,700 – 3,000 arriving autos
     - 10,000 – 12,000 persons by LRT
   - Exiting during post-game highest hour (1 hour post game time):
     - 7,000 – 7,500 departing autos
     - 15,000 – 17,000 persons by LRT

4. Site Opportunities
   - Transit service
     - Transit-rich environment including LRT, public bus, Amtrak
     - Enhanced pedestrian access
     - Minimum expansion of LRT trackage required
     - Intermodal (bus and LRT) station can readily be developed adjacent to stadium
   - Roadway and parking operations
     - Multiple freeways serve the downtown and stadium area
     - Direct ramp connections to stadium area



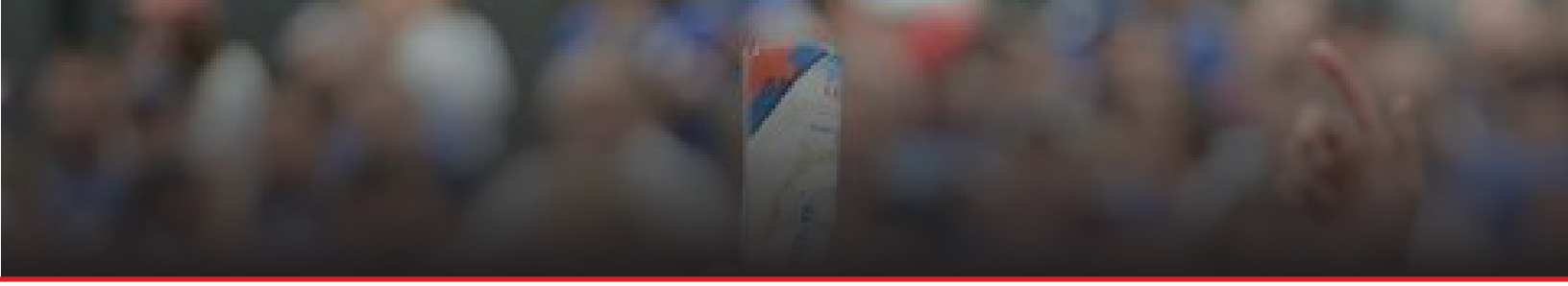
- Downtown street grid provides system flexibility/capacity
- Existing downtown parking infrastructure (structured and at-grade)
- Reduced dependency on parking adjacent to stadium by creating dispersion of parking locations
- within downtown.

5. Site Challenges

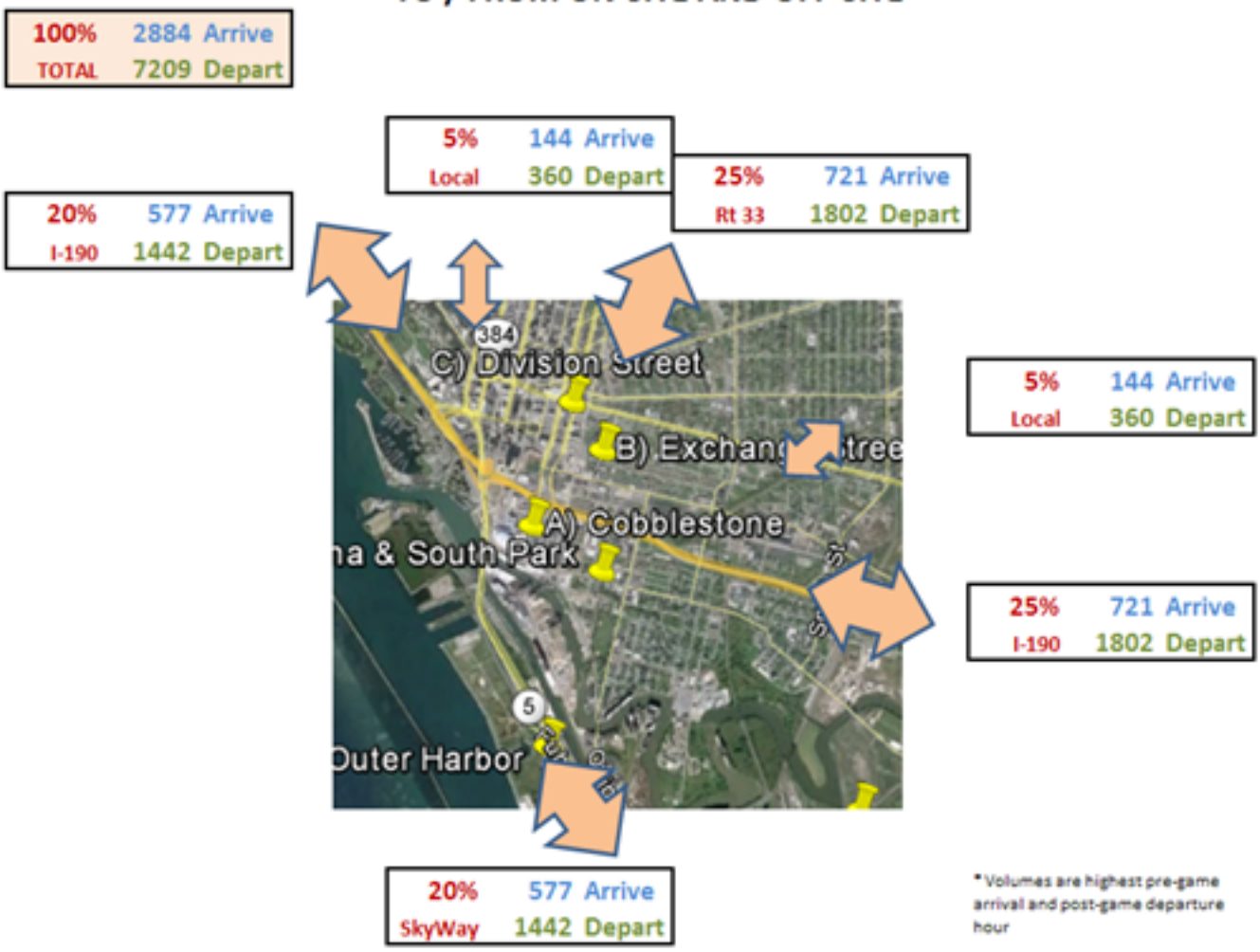
- Transit service
  - LRT capacity is finite (projected demand exceeds capacity); requires LRT expansion (tracks, station, rolling stock)
  - Game day bus service needed to link Stadium with downtown parking to supplement LRT capacity
  - Very high frequency LRT service required; will require traffic planning to avoid conflict with downtown pedestrian and traffic flows
- Roadway and parking operations
  - Limited number of ramps linking I-190 to stadium area, and ramp termini conflict with other traffic flows in the downtown
  - On-site and adjacent roadways will need expansion, and interface with existing downtown grid will need to be resolved
  - Game day traffic management plan will be needed, including street management (one-way, reversible, turn prohibitions, street closures), intelligent traffic control and command center, access management, on-street parking prohibitions, and motorist information systems.
  - Additional pedestrian-only bridges may be needed to cross Amtrak/CSX rail line.
  - Removal of certain streets will be needed to develop stadium and parking sites, creating disconnects in the street grid.
  - Downtown parking facilities mainly further than ½ mile from stadium

6. Recommended Site Improvements – As described on the site comparison chart on pages 28-29, AECOM has identified approximately $75-$125M in recommended site transportation improvements which consist of the following costs. As noted otherwise in the report, many of these changes are consistent with the master planning for downtown and may occur irrespective of the development of a new stadium.

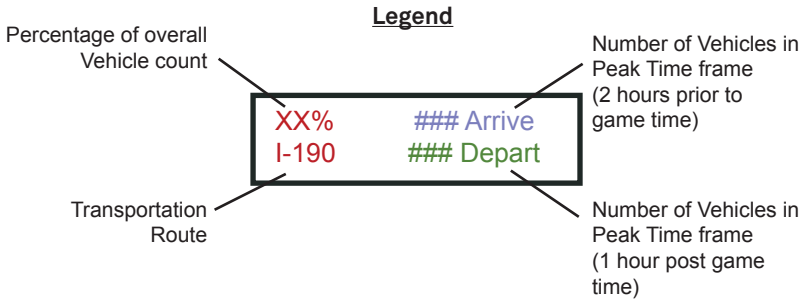
- Transit Service $40 - $60M
  - Light Rail Line extension to provide additional station platforms, possible new or expanded turnback loop.
  - New Light Rail Terminal Station
- Roadway/Ramps/Walkways $35M - $65M
  - New Entrance and Exit ramps to I -190 at Seneca Street
  - Improved sidewalk along Michigan Avenue and Main Street corridors

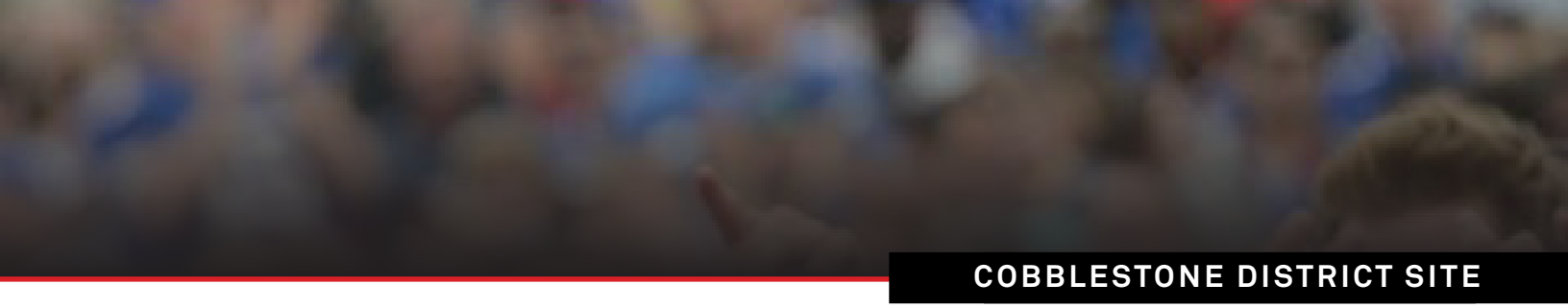


TO / FROM ON-SITE AND OFF-SITE



The diagram above is a depiction of traffic flows by volume, percentage of overall vehicle count and the route used.



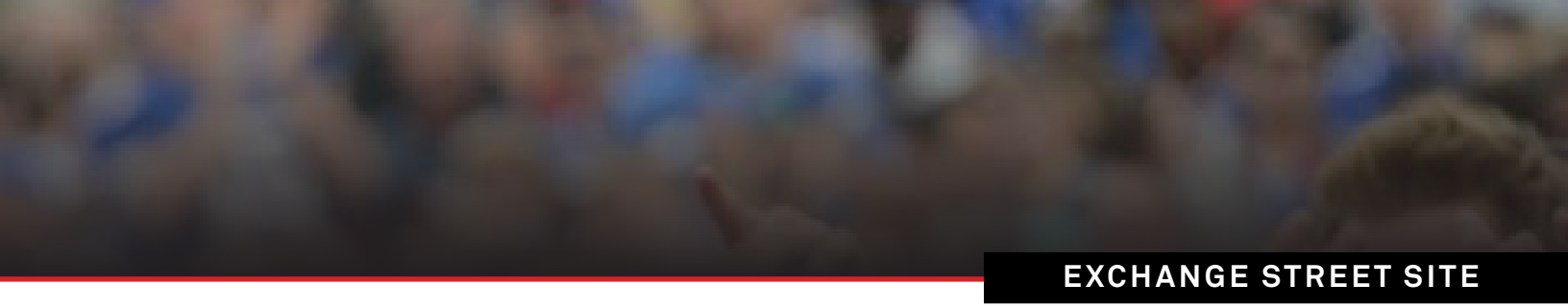


III. ECONOMIC ANALYSIS

Economic Development Scenarios Analysis in Section V, outlines projections of Costs, Economic Impacts and Fiscal Impacts resulting from the bullet points listed below. A detailed cost breakdown is provided in Appendix D.

- The Cobblestone District site has an L-shape, which appears to limit on-site ancillary development to two specific smaller areas; higher densities may also be needed based on requirements for on-site parking.
- Ancillary development surrounding the parcel is particularly constrained on three sides – north, south and west.
- Parcels to the east across Michigan Avenue have limited development opportunities.
- The site provides limited capacity for surface parking; structured parking may be needed based on neighborhood parking supply.
- The existence of the supportive entertainment uses (First Niagara Center, the HARBORCENTER, including two ice rinks, parking, and hotel, Coca Cola Field and Seneca Buffalo Creek Casino) may create positive synergies. In addition, the Courtyard Buffalo Downtown/Canalside, an upscale hotel, opened in May 2014 with 102 rooms; an analysis of attendance and parking requirements for these venues is needed.
- Possible synergies with First Niagara Center and Coca Cola Field could drive market support for district restaurant and bar opportunities as well as supporting retail proximate to the three stadiums. At present, retail offerings in the vicinity of the stadium site appear limited.
- Further research is needed to confirm whether the proposed football stadium could be operated in concert with the other venues as a sports/entertainment district rather than three separate venues in proximity to each other. Operating synergies across the three venues could be achievable, possibly including managed parking or public safety.
- Interstate visibility should correlate with enhanced advertising and sponsorship opportunities for the team and/or venue.

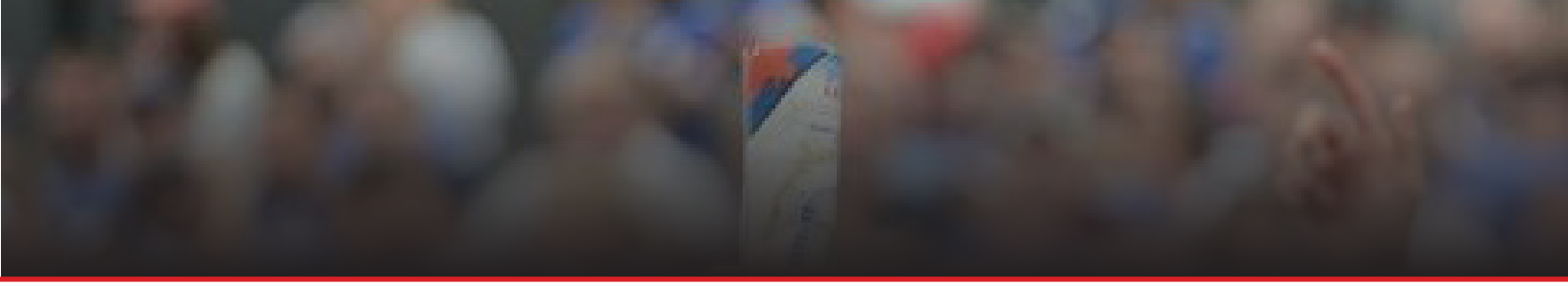
EXCHANGE STREET SITE



I. PLANNING ANALYSIS

The Exchange Street site, bounded by Swan Street to the north, Chicago Street to the east, Exchange Street to the South and Michigan Avenue to the west, will perhaps have the best ingress/egress access of any of the proposed urban sites and will also provide the best access to existing parking inventories. With its adjacency to the on and off ramps of I-190, and linkages to the I-33 to the north, this 22 acre site has the easiest load-in and load–out capabilities. Adjacencies with Coca Cola Field create the potential to develop an iconic sports district, similar to the Cobblestone District site. However, unlike the Cobblestone District site, the Exchange Street site has the additional benefit of adjacent properties that offer ancillary development potential. This site's proximity to other retail and mixed use development make this site a good candidate for a domed multi-purpose stadium with program to attract business conferences and other mixed use, thought an open-air stadium would also be a viable option. The site's location at the edge of the downtown Buffalo core offers spin of development potential without requiring the costly demolition of major existing buildings. The site is bordered by Exchange Street to the south, Swan Street to the north, Michigan Avenue to the west and Chicago Street to the east. Were a stadium to be built on this site, Seneca Street would need to be closed between Michigan and Chicago, and re-opened east of Chicago. More detailed recommendations for roadway and traffic infrastructure improvements are included in the detailed transportation analysis below.

Pierce Arrow Museum was recently constructed on the Exchange Street site, and would either need to be relocated or incorporated into the stadium as a unique iconic feature. Off site, several adjacent residential homes need to be considered in connection with stadium activities and event traffic flow. Engaging with the community to further understand potential impediments will be important with respect to this site. To mitigate potential challenges, a development block should be considered as part of the initial conceptual planning process. However as noted otherwise in the report, many of these changes are consistent with the master planning for downtown and may occur irrespective of the development of a new stadium.



II. TRANSPORTATION ANALYSIS

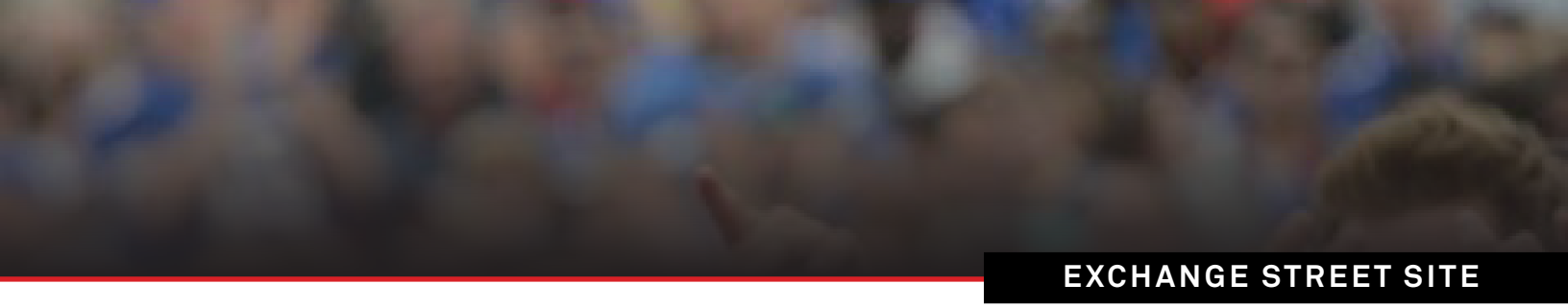
Reference Appendix Section C, Trip Generation Analysis, for the traffic volume basis of design for a generic NFL stadium in Buffalo, utilized in the transportation analysis below.

1. Estimated transportation mode share:
   - Via Transit
     - Light rail 15% as primary mode
       3% as secondary mode (to/from parking)
       18% total
     - Public bus 5%
     - Charter bus 2%
     - Hired Car 3%
     - Auto 50% park within ½ mile (park/walk access)
       25% park in downtown parking (park/LRT-shuttle-walk access)

2. Parking
   - Total event parking needs 14,000 – 16,000 spaces

3. Guest trip generation to the site and surrounding downtown areas
   - Arrival during pre-game highest hour (2 hours prior to game time):
     - 2,700 – 3,000 arriving autos
     - 7,000 – 8,000 persons by LRT
   - Exiting during post-game highest hour (1 hour post game time):
     - 7,000 – 7,500 departing autos
     - 9,000 – 10,000 persons by LRT

4. Site Opportunities
   - Transit service
     - Transit-rich environment including LRT, public bus, Amtrak
     - Stadium site is close to the downtown bus terminal
     - Enhanced pedestrian access using the existing street grid
     - Potential extension of LRT rail to vicinity of stadium site via Swan Street
     - Less reliant on transit to reach downtown parking areas

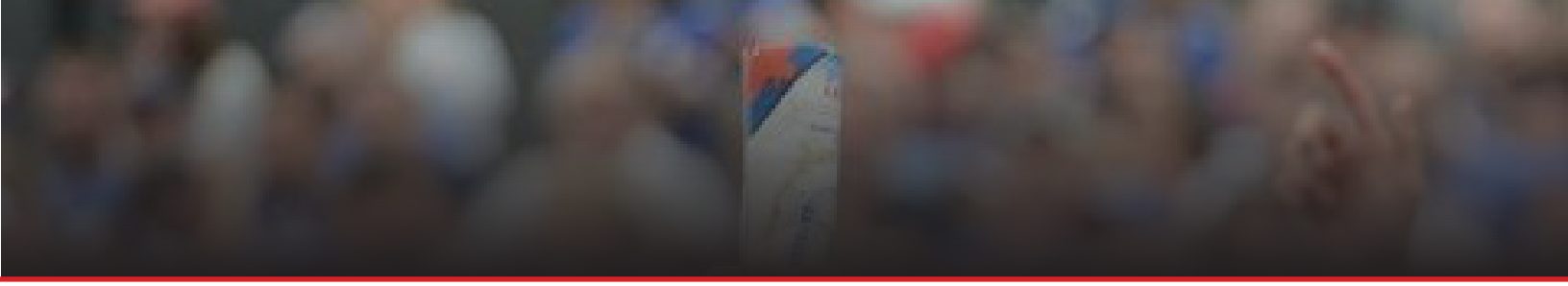


- Roadway and parking operations
    - Multiple freeways serve the downtown and stadium area
    - Direct ramp connections to stadium area
    - Downtown street grid provides system flexibility/capacity
    - Existing downtown parking infrastructure (structured and at-grade)
    - Reduced dependency on parking adjacent to stadium by creating dispersion of parking locations within downtown.

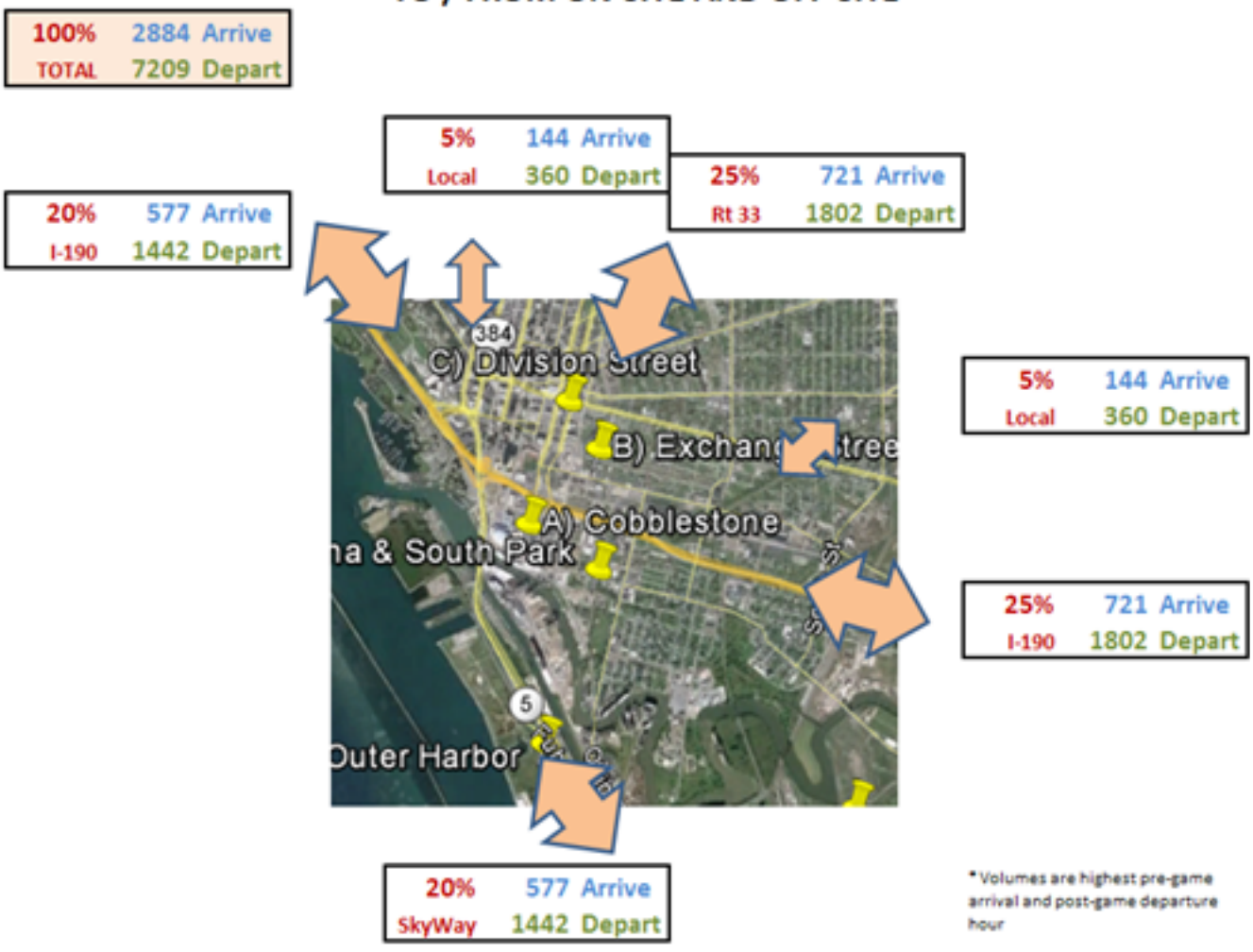
5. Site Challenges
    - Transit service
        - Possible LRT expansion (tracks, station, rolling stock) to stadium vicinity
        - Frequent LRT service will require traffic planning to avoid conflict with downtown pedestrian and traffic flows
        - Limited number of ramps linking I-190 to stadium area, and ramp termini conflict with other traffic flows in the downtown
        - On-site and adjacent roadways will need expansion, and interface with existing downtown grid will need to be resolved
        - Game day traffic management plan will be needed, including street management (one-way, reversible, turn prohibitions, street closures), intelligent traffic control and command center, access management, on-street parking prohibitions, and motorist information systems.
        - Removal of certain streets will be needed to develop stadium, creating disconnects in the street grid.

6. Recommended Site Improvements– As described on the site comparison chart on pages 28-29, AECOM has identified approximately $100-$150M in recommended site transportation improvements which consist of the following costs. As noted otherwise in the report, many of these changes are consistent with the master planning for downtown and may occur irrespective of the development of a new stadium.

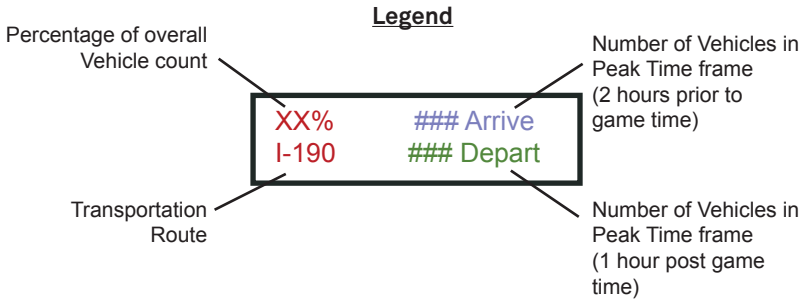
- Transit Service, $50 - $75M
    - Light Rail line extension to a New Light Rail Terminal
    - New Light Rail Terminal Station Connected with the Buffalo Exchange Street Amtrak Station.
- Roadway/Ramps/Walkways, $50 - $75M
    - New Entrance and Exit ramps to I -190 at Seneca Street
    - Lowering of I-190 ramp to grade at Seneca Street
    - Improved sidewalk along Michigan Avenue and Main Street corridors

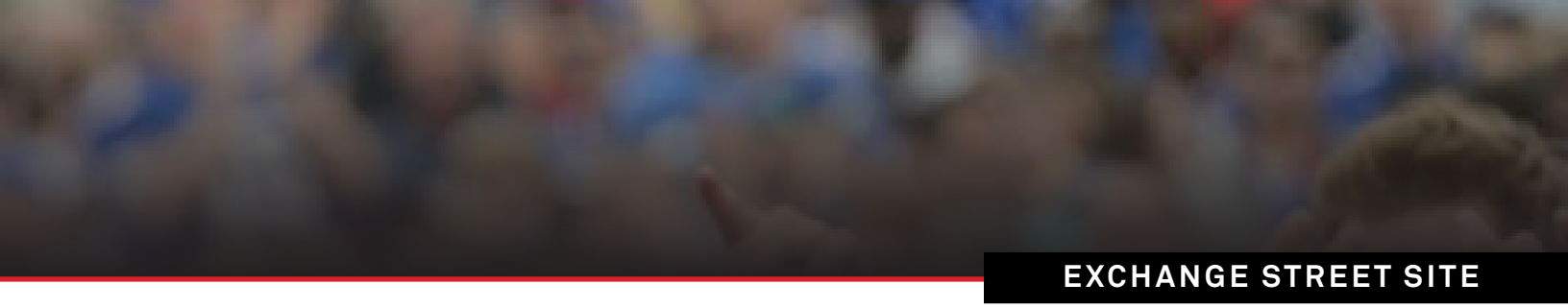


TO / FROM ON-SITE AND OFF-SITE



The diagram above is a depiction of traffic flows by volume, percentage of overall vehicle count and the route used.



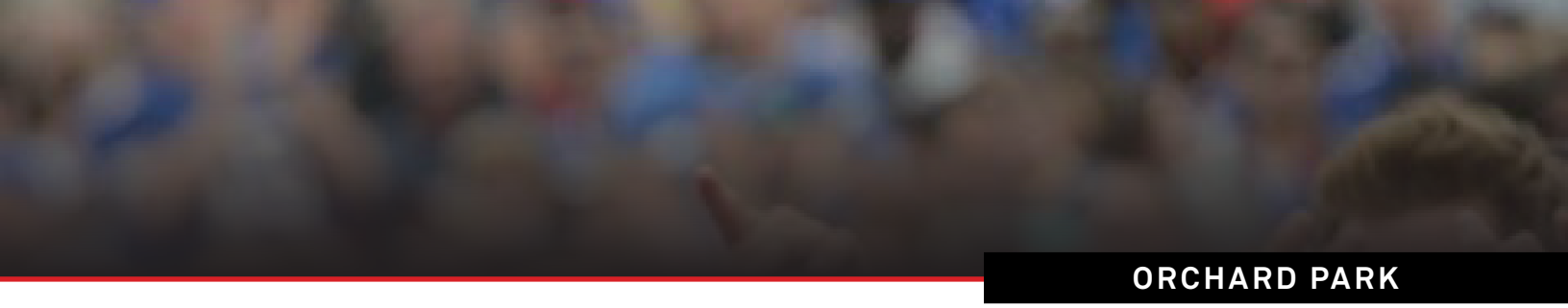


III. ECONOMIC ANALYSIS

Economic Development Scenarios Analysis in Section V, outlines projections of Costs, Economic Impacts and Fiscal Impacts resulting from the bullet points listed below. A detailed cost breakdown is provided in Appendix D.

- The Exchange Street site alternatives are highly constrained in terms of on-site ancillary development opportunities, though there do appear to be opportunities for development on the corner of Swan Street] and Michigan Avenue and also on a smaller scale along the south side of Swan Street down to the intersection of Swan Street and Chicago Street.
- There is very little retail existing in the neighborhood surrounding the site. There are hotels in ½ mile proximity including the soon to open hotel in the HARBORCENTER development.
- Existing residential development north side of Swan Street and east of Chicago Street is a constraint, though land uses to the east, west and south could have more redevelopment potential.
- Exchange Street has an industrial character, which could be more amenable to redevelopment over time, as assemblage of residential properties tends to be more difficult than assemblage of commercial or industrial properties.
- Aerial photos of the site from 2012 indicate that many buildings appeared to be occupied at that time. South of Exchange Street, redevelopment potential is constrained by existing rail lines as well as the Interstate 190.
- The site's Relative proximity to Coca Cola Field provides opportunity for creation of a "sports district."
- Interstate visibility to the site should correlate with enhanced advertising and sponsorship opportunities for the team and/or venue.

EXISTING RALPH WILSON STADIUM

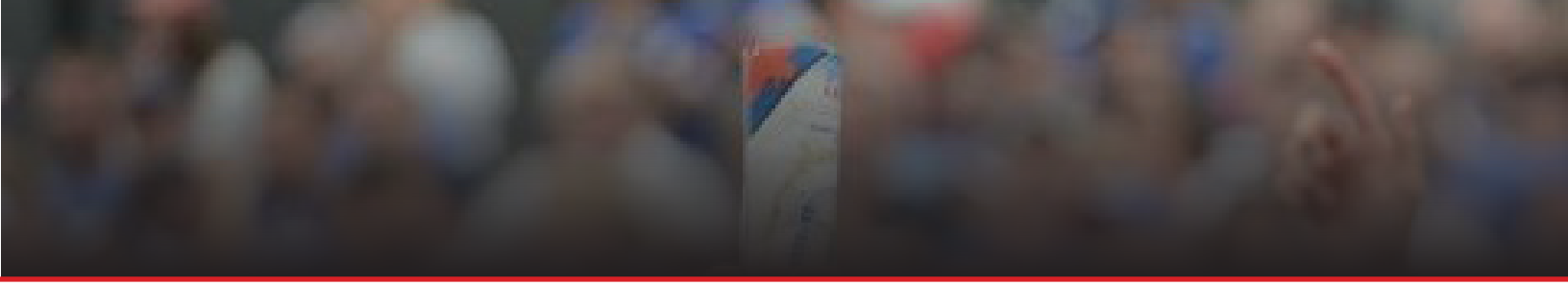


ORCHARD PARK

I. PLANNING ANALYSIS

Serving as the home of the Buffalo Bills since 1973, the existing Ralph Wilson Stadium (RWS) site in Orchard Park has the benefits of years of experience hosting NFL games and fan familiarity. The site is comprised of 181 acres, most of which is occupied by RWS, parking inventory, Bills administration space and the practice facility. The site has developed several game day traditions has over the years, and is the paradigm game day experience for Bills fans. Deciding to put a stadium solution on this site, either through a major renovation of RWS in addition to the renovation currently underway, or constructing a new stadium on the existing site, would leverage those existing traditions. Also, as the largest potential site considered, the Orchard Park site provides the most parking capacity and resulting tailgating opportunities for fans. Extending the Bills presence here by renovating existing Ralph Wilson Stadium is likely to be the least costly solution to solving some of the challenges of the existing stadium. However, if new ownership deems a new stadium on this site to be the solution, there are only a few locations on which a new stadium can be built without interfering with existing operations. The best available location would be to construct the stadium north of existing RWS in parking lots 5, 6, and 7 on land currently controlled by Erie County. This location also retains the independence and separation for the Bills administration and practice facility. The Orchard Park site is the only potential site evaluated with little to no acquisition costs or the schedule delays that could arise from dealing with existing property owners. Recommendations for roadway and traffic infrastructure improvements are included in the detailed transportation analysis of this site in section IV of this report.

It is important to note that, surveys of Bills fans highlight significant challenges with the Orchard Park site. Access to the stadium's parking lots is greatly underserved by the primary access routes of Abbott Road, Southwestern Blvd and Big Tree Road. Access to the closest high volume road system, Highway 219, is two miles from the stadium parking lots at its closest point. Although it is the largest of the shortlisted sites, we do not believe the Orchard Park site will promote ancillary retail or destination development due to its roadway challenges and the remote nature of the location. Hence the economic plan with the best community return on investment at this site would be to renovate the existing open air stadium as it is likely to have the lowest capital investment. However for comparison purposes this analysis also includes an analysis of the possibility of constructing a new stadium on the existing site.



II. TRANSPORTATION ANALYSIS

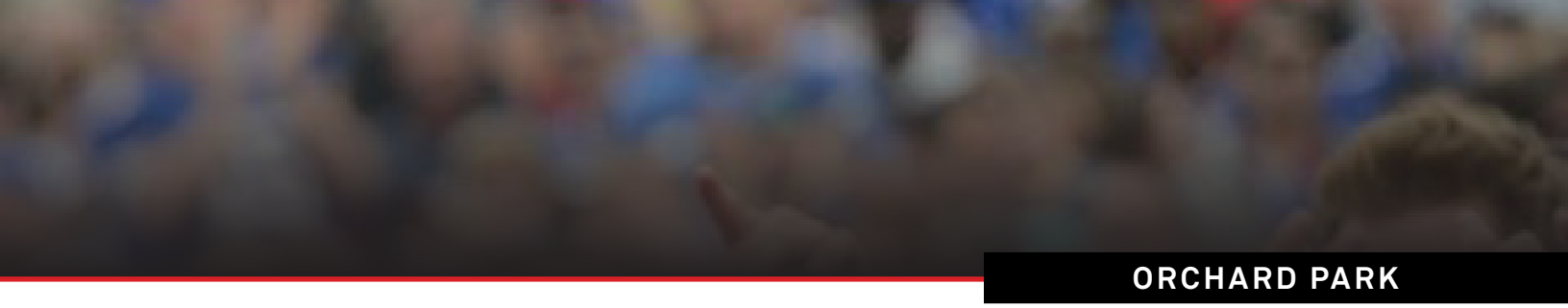
Reference Appendix Section C, Trip Generation Analysis, for the traffic volume basis of design for a generic NFL stadium in Buffalo, utilized in the transportation analysis below.

1. Estimated transportation mode share:
   - Via Transit
      - Light rail 0% as primary mode
        0% as secondary mode (to/from downtown parking)
        0% total
      - Public bus 5%
      - Charter bus 5%
      - Hired Car 5%
      - Auto 85% park within ½ mile (park/walk access)
        0% park in downtown parking (park/LRT-shuttle-walk access)

2. Parking
   - Total event parking needs 15,000-18,000 spaces

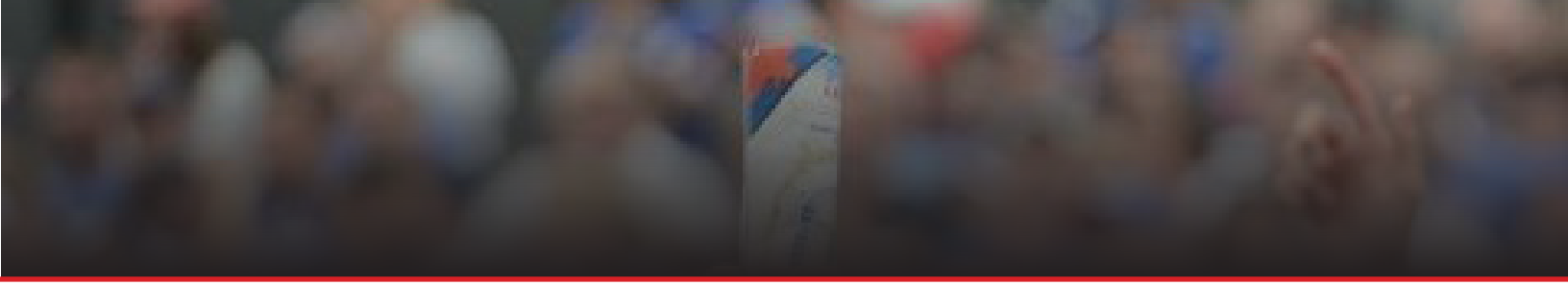
3. Guest trip generation
   - Arrival during pre-game highest hour (2 hours prior to game time):
      - 3,000 – 3,500 arriving autos
      - 0 persons by LRT
   - Exiting during post-game highest hour (1 hour post game time):
      - 8,000 – 9,000 departing autos
      - 0 persons by LRT

4. Site Opportunities
   - Transit service
      - Bus service would be the principal transit mode
   - Roadway and parking operations
      - Multiple freeways serve the stadium area
      - Multiple multi-lane highways link the stadium area to the freeways
      - Parking is built and is all on site. Improvement costs minimal.

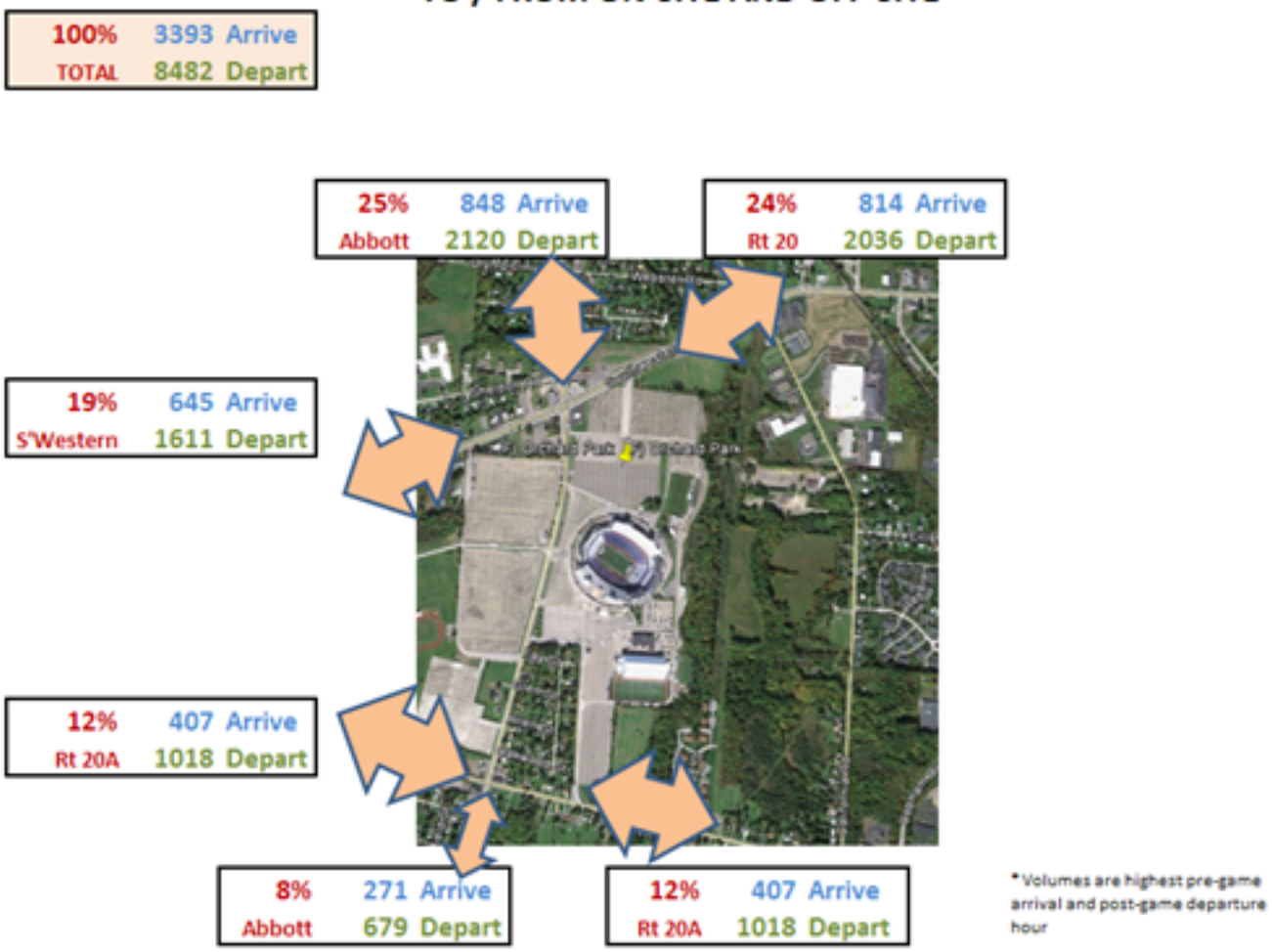


5. Site Challenges
   - Transit service
     - No LRT or scheduled public bus service to the stadium area.
     - Any extension of LRT to the stadium site would require an 8-9 mile extension of current tracks. Limited rail right of way appears to be available.
   - Roadway and parking operations
     - Access to the stadium site and on adjacent roadways is through signalized intersections, which cause significant traffic congestion on game days. On-site and adjacent roadways could be expanded to improve level of service.

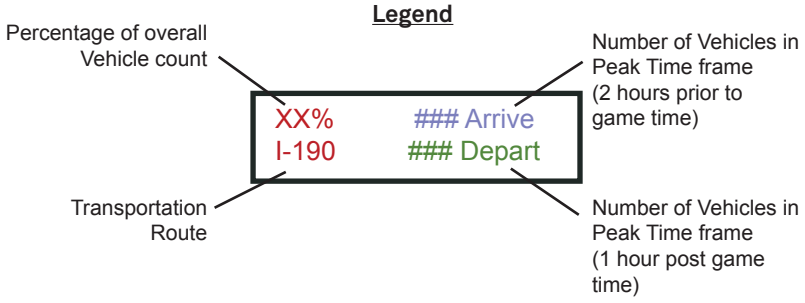
6. Recommended Site Improvements– As described on the site comparison chart on pages 28-29, AECOM has identified approximately $50-$70M in recommended site transportation improvements which consist of the following:
   - Roadway/Ramps/Walkways; $50 - $70M
     - Surface Street Improvements to 1.5 miles of Abbott Road and 1.8 miles of Southwestern Blvd. Improvements are not targeting widening at this point without additional ROW research.

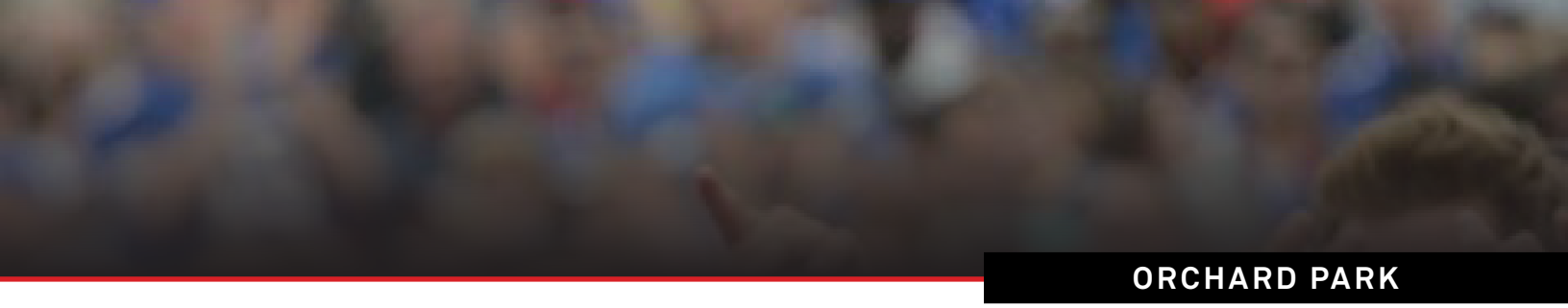


TO / FROM ON-SITE AND OFF-SITE



The diagram above is a depiction of traffic flows by volume, percentage of overall vehicle count and the route used.



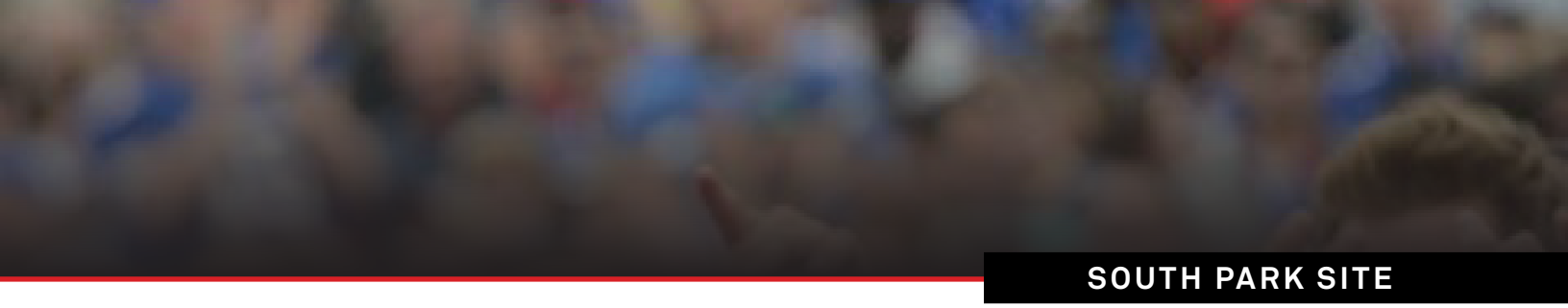


III. ECONOMIC ANALYSIS

Economic Development Scenarios Analysis in Section V, outlines projections of Costs, Economic Impacts and Fiscal Impacts resulting from the bullet points listed below. A detailed cost breakdown is provided in Appendix D.

- The existing stadium site provides abundant surface parking. Assemblage of land does not appear to be required.
- This site is largely self-contained from a sports standpoint which would allow the "owner" to maximize on-site revenue capture.
- The site location, which is distant from interstates, does not lend itself to destination retail opportunities unless the number of events associated with the facility are expanded. However, if an ancillary retail project were considered, it would need to be larger in scale to serve as an adequate destination (greater than 250,000 square feet of rentable space). McKinley Mall is already located 2.25 miles from the site further research would be needed to assess the competitive position of this mall in the region.
- There is modest supporting retail development along Southwestern Boulevard.
- Lack of limited visibility to high traffic routes may limit advertising and sponsorship opportunities.

SOUTH PARK & LOUISIANA STREETS

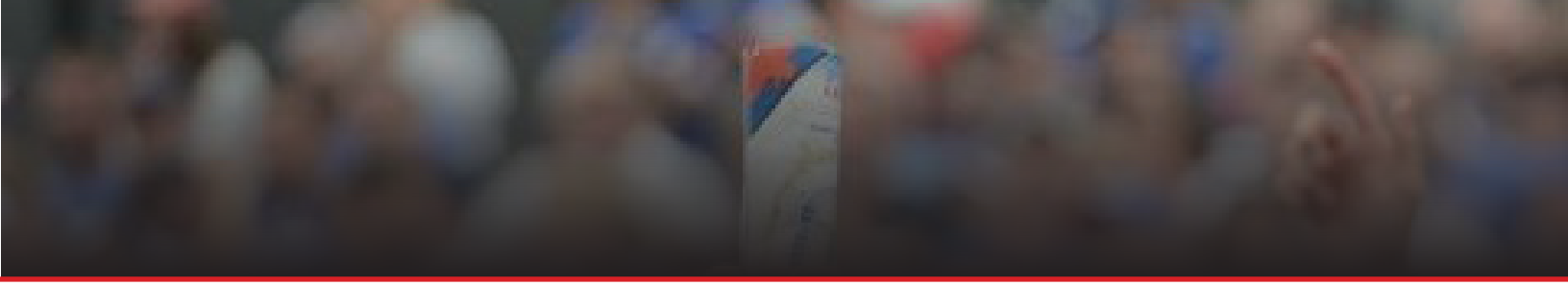


SOUTH PARK SITE

I. PLANNING ANALYSIS

The South Park site is the largest of the urban sites being considered, with its potential 122 acres spanning from the Buffalo River to the south edge of I-190. The northern half of the potential site is currently totally comprised of vacated properties and could be made available by the City of Buffalo. With enhancements to Louisiana and Hamburg Streets, the site would have sufficient access to the high volume traffic of I-190 and would also be within walking range of the parking inventories of the Cobblestone District and downtown Buffalo. The site's far western point is ideally suited to development of an intermodal transportation hub with the close proximities of light rail and bus traffic. Although subdivided by South Park Avenue, each half of the site is large enough to support the stadium and its immediate circulation. The southern half of the site borders the Buffalo River, where the river's edge is already under the reconstruction as a waterfront park. The site would also place a stadium between the Cobblestone District and other vibrant development projects in the area. With the appropriately scaled mixed use development surrounding the potential stadium, both areas would likely realize an increase in activity and value.

The South Park site also presents a set of challenges. Walking distances from the site to the downtown parking inventories will be increased by a quarter of a mile to half mile. Also, like the Exchange Street site, engaging with the community to further understand potential impediments is appropriate with respect to this site. As the southern half of the site sits adjacent to an established residential neighborhood and would overtake the neighborhood's public Conway Park, replacement of the park and related transition should be explored. From an infrastructure standpoint, the site would require expansions of Louisiana and Hamburg streets along with additional turn lanes and wider entrance and exit ramps to I-190. However as noted otherwise in the report, many of these changes are consistent with the master planning for downtown and may occur irrespective of the development of a new stadium.



II. TRANSPORTATION ANALYSIS

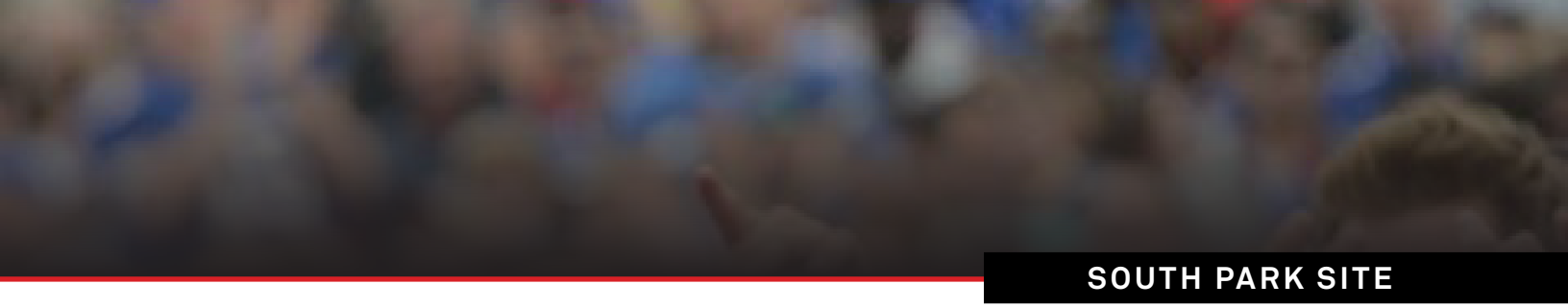
Reference Appendix Section C, Trip Generation Analysis, for the traffic volume basis of design for a generic NFL stadium in Buffalo, utilized in the transportation analysis below.

1. Estimated transportation mode share:
   - Via Transit
     - Light rail — 15% as primary mode; 25% as secondary mode (to/from downtown parking); 40% total
     - Public bus — 5%
     - Charter bus — 2%
     - Hired Car — 3%
     - Auto — 50% park within ½ mile (park/walk access); 25% park in downtown parking (park/LRT-shuttle-walk access)

2. Parking
   - Total event parking needs — 14,000 – 16,000 spaces

3. Guest trip generation
   - Arrival during pre-game highest hour (2 hours prior to game time):
     - 2,700 – 3,000 arriving autos
     - 15,000 – 17,000 persons by LRT
   - Exiting during post-game highest hour (1 hour post game time):
     - 7,000 – 7,500 departing autos
     - 20,000 - 25,000 persons by LRT

4. Site Opportunities
   - Transit service
     - Transit-rich environment including LRT, public bus, Amtrak
     - Proximity of stadium site to existing LRT requires only a minimum extension of LRT.
     - Intermodal (bus and LRT) station can readily be developed adjacent to stadium.
   - Roadway and parking operations
     - Multiple freeways serve the downtown and stadium area
     - Direct ramp connections to stadium area
     - Downtown street grid provides system flexibility/capacity
     - Existing downtown parking infrastructure (structured and at-grade)
     - Reduced dependency on parking adjacent to stadium

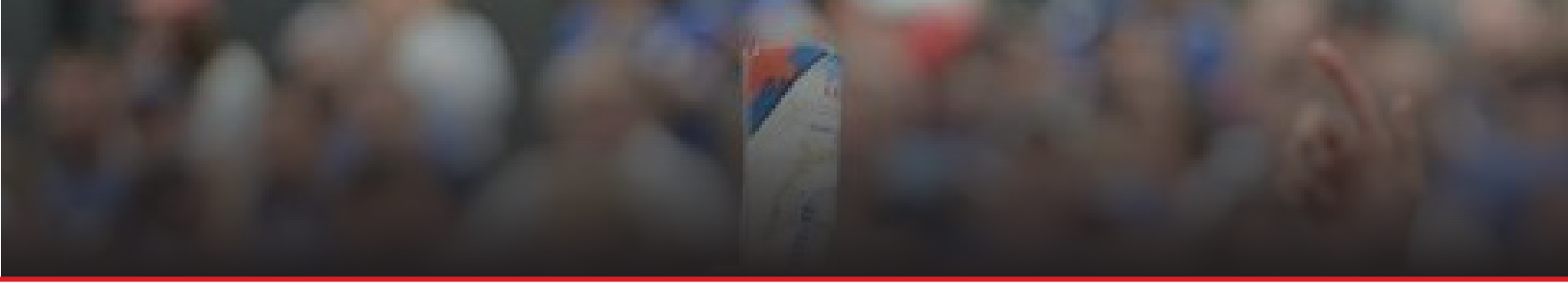


5. Site Challenges

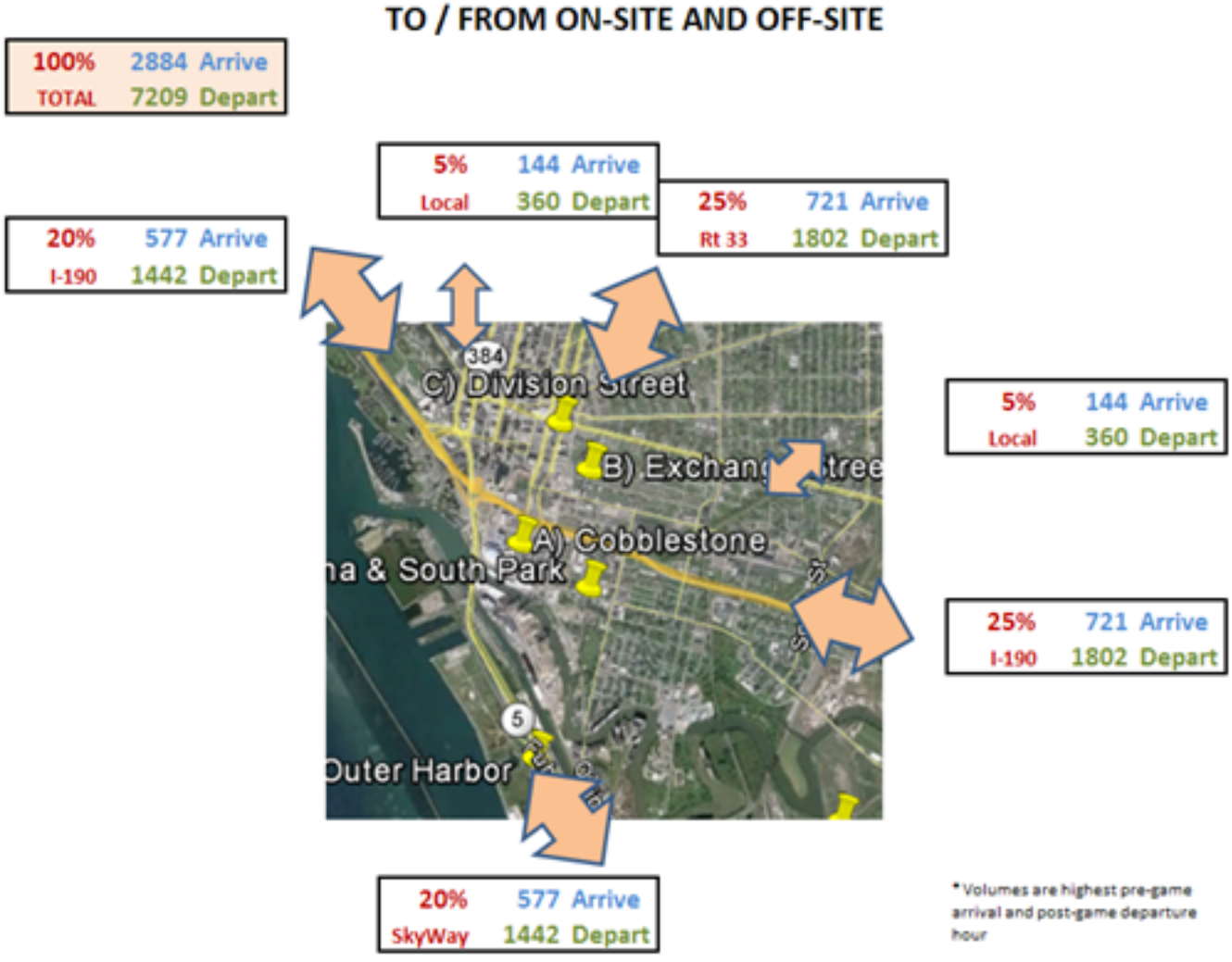
- Transit service
  - Enhanced pedestrian access
  - LRT capacity is finite (projected demand exceeds capacity); requires LRT expansion (tracks, station, rolling stock)
  - Long walk (>1/2 mile) from stadium to downtown parking requires supplemental bus and LRT service.
  - Game day bus service needed to link stadium with downtown parking to supplement LRT capacity.
  - Very high frequency LRT service will require traffic planning to avoid conflict with downtown pedestrian and traffic flows
- Roadway and parking operations
  - Close proximity of established residential communities complicates traffic management on game days, and constrains ability to implement needed street widening.
  - Limited number of ramps linking I-190 to stadium area, and ramp termini conflict with other traffic flows in the downtown
  - On-site and adjacent roadways will need expansion, and interface with existing downtown grid will need to be resolved
  - Game day traffic management plan will be needed, including street management (one-way, reversible, turn prohibitions, street closures), intelligent traffic control and command center, access management, on-street parking prohibitions, motorist information systems.
  - Additional pedestrian-only bridges may be needed to cross Amtrak/CSX rail line.
  - Removal of certain streets will be needed to develop stadium and parking sites, creating disconnects in the street grid.
  - Downtown parking facilities mainly further than ½ mile from stadium.

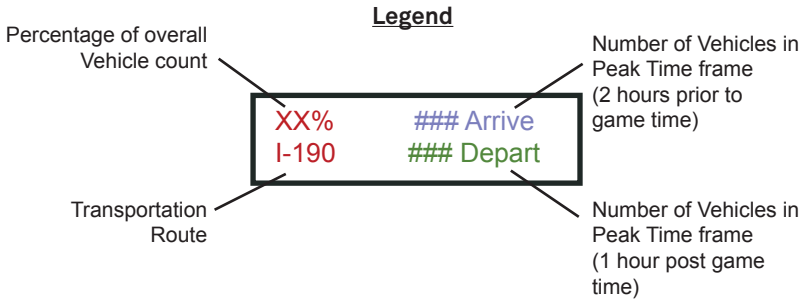
6. Recommended Site Improvements - As described on the site comparison chart on pages 28-29, AECOM has identified approximately $200-$250M in recommended site transportation improvements which consist of the following costs. As noted otherwise in the report, many of these changes are consistent with the master planning for downtown and may occur irrespective of the development of a new stadium.

- Transit Service $110 - $140M
  - Light Rail line extension to the corner of South Park and Michigan Avenue.
  - New Light Rail Terminal Station
- Roadway/Ramps/Walkways $90 - $110M
  - New Entrance and Exit ramp lanes to I -190 at Seneca St., Louisiana St. and Hamburg St.
  - Widening of Louisiana and Hamburg Streets from South Park to I-190 (approx. .3 miles each).

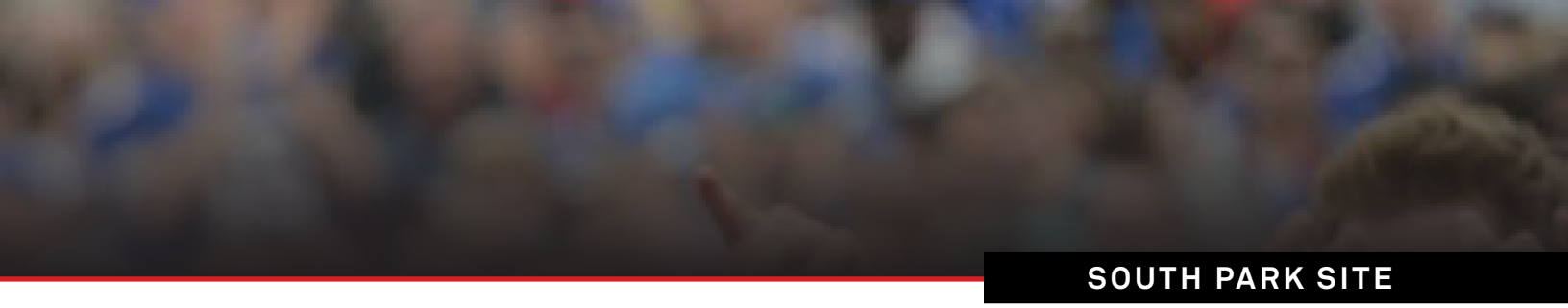


TO / FROM ON-SITE AND OFF-SITE





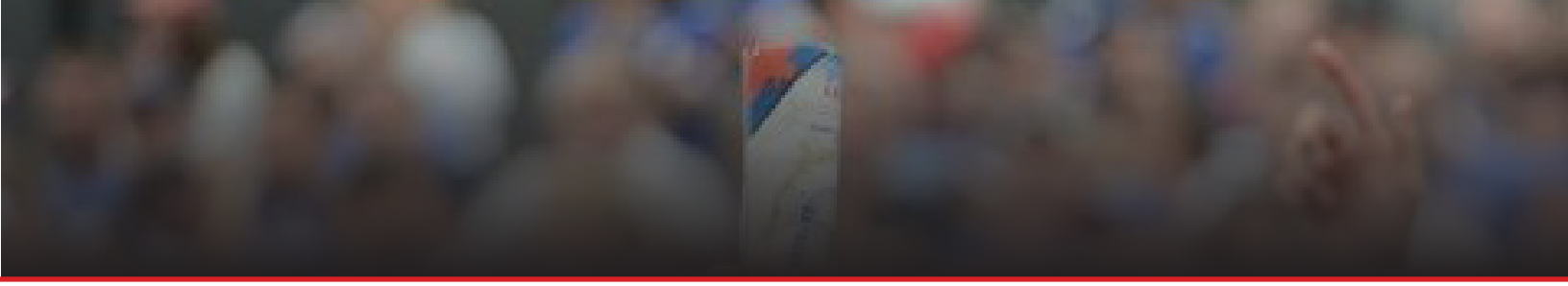
The diagram above is a depiction of traffic flows by volume, percentage of overall vehicle count and the route used.



III. ECONOMIC ANALYSIS

Economic Development Scenarios Analysis in Section V, outlines projections of Costs, Economic Impacts and Fiscal Impacts resulting from the bullet points listed below. A detailed cost breakdown is provided in Appendix D.

- The existing site appears to provide ample frontage for surface parking as well as on-site ancillary development which could include retail, office, restaurant, entertainment and hotel.
- Identified properties south of the stadium appear to be used as a park for adjacent residential areas. As such, development of this parcel would likely require open space offsets, possibly along the Buffalo River.
- Existing land use north of Park Avenue and east of Louisiana is entirely residential in nature. Further research would be needed to quantify the stability of these residential areas.
- Stadium construction at this site could be used to leverage enhancement of development along the canal for future development.
- Development on this site could provide a basis for eventual redevelopment of land across the Buffalo River as part of an Outer Harbor development, for higher value use in the future.



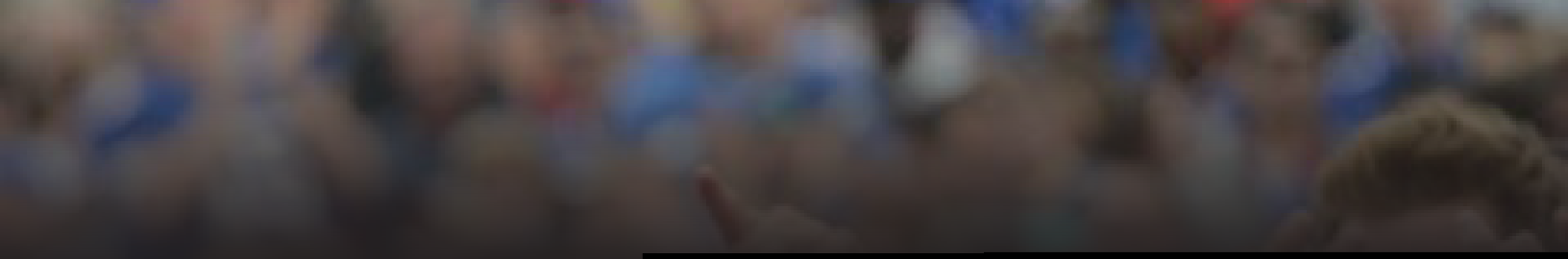
CONCEPTUAL ECONOMIC DEVELOPMENT SCENARIOS

Each of the proposed stadium sites was evaluated in terms of potential ancillary development. The ancillary development scenarios presented herein are conceptual and represent only certain options of the many development scenarios that may arise after a stadium site is selected. A preliminary evaluation of NFL stadiums around the country was conducted to see what has been developed on NFL stadium sites similar to the sites being considered in Buffalo. Similar concepts for each site were selected based on potential site size, current amenities, proposed development in the area and what may be possible nearby.

From a review of other stadiums, new projects tend to fall into one of several typologies:

- Urban Park / Waterfront sites, where the stadium is fixed with a park context, with limited directly adjacent parking (Chicago Bears or Cleveland Browns stadiums, for example)
- Urban edge sites, typically directly adjacent to the urban core (Detroit Lions, Denver Broncos, or Seattle Seahawks stadiums for example)
- Urban infill sites, typically adjacent to other sports venues and sports districts, albeit with generally less directly adjacent parking (St. Louis Rams or Carolina Panthers, for example)
- Suburban infill sites, occasionally adjacent to other stadiums, with a larger amount of adjacent on-site parking (Houston Texans stadium, for example)
- Suburban sites, typically stand alone, with ample on-site surface parking (New England Patriots stadium, for example)

Of the array of typologies, an increasing share of urban stadiums are being built in immediate proximity to other sports venues, sometimes providing support for broader downtown / entertainment districts.



V. ECONOMIC DEVELOPMENT SCENARIOS

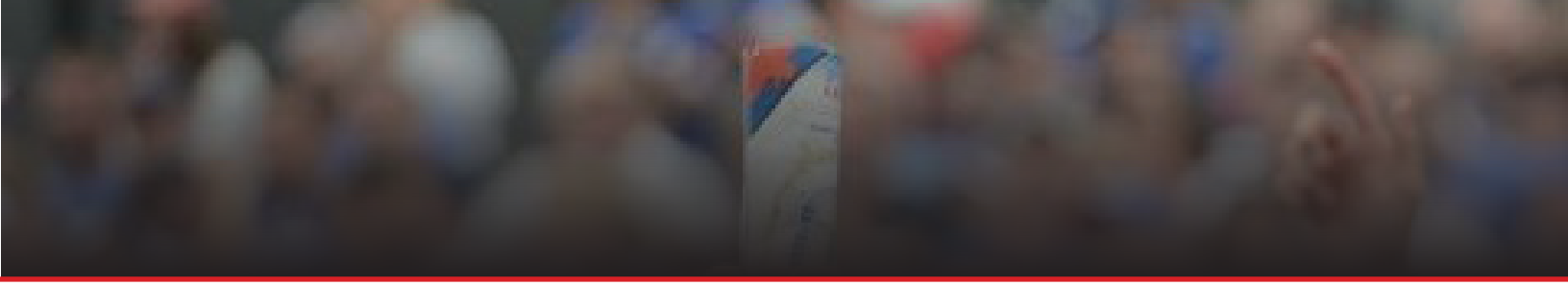
ECONOMIC AND FISCAL IMPACTS

The construction and ongoing operations of the stadium and ancillary development will have economic and fiscal impacts for the surrounding area and the state of New York. Ancillary development scenarios are presented on page 56 for each of the shortlisted sites for construction and operations in the year 2020.

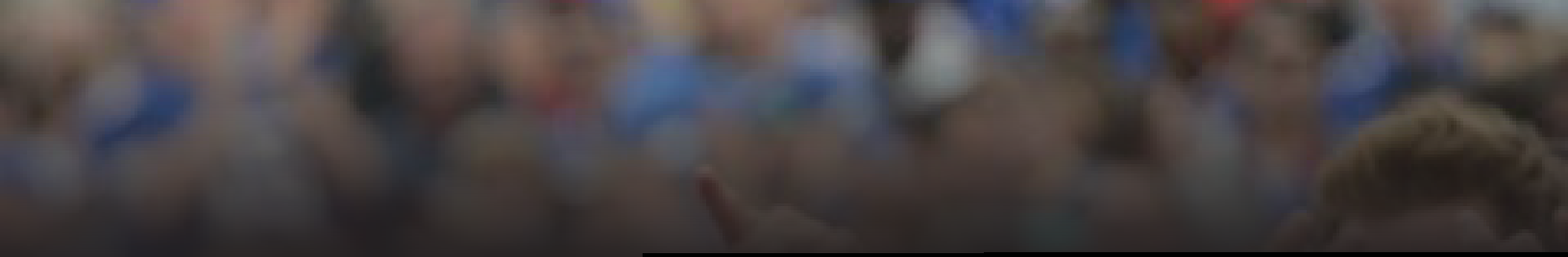
The information contained in this section is based on estimates, assumptions and other information developed from preliminary research of the market, national industry standards, publicly available information on comparable facilities and other factors. Given the conceptual nature of the analysis, we are not in a position to provide assurances regarding the achievability of any presumed ancillary development projected and this analysis should not be relied upon for that purpose. Furthermore, there will be differences between projected and actual results since events and circumstances frequently do not occur as expected, and those differences will likely be material, given the conceptual nature of this exercise.

Our analysis only included a conceptual evaluation of the physical size capacity of each proposed site or off-site parcels to support the suggested development. As several of the sites include former industrial activities, we have not yet developed an understanding of existing subsurface environmental (brownfield) conditions that would otherwise make residential reuse of specific sites cost prohibitive due to remediation costs.

In general, the 3 shortlisted sites closer to downtown lend themselves to higher density hotels, restaurant and retail development. However, as in the case of the Cobblestone District site, the area surrounding the potential stadium location is already largely developed, which may constrain potential for ancillary off-site development. The Exchange Street site itself is constrained, meaning that a majority of potential ancillary development would occur off the stadium site itself. However with proper site placement of the stadium the site would support a hotel/retail development on the corner of Michigan Avenue and Swan Street. The South Park site is both considerably larger, and adjacent to a larger neighborhood where future redevelopment is likely, particularly along the Louisiana Street and Park Avenue Corridors. However, potential stadium development on this site would need to presume broader city motivation to encourage redevelopment along those corridors. As well, proposals for extension of existing light rail in this development area would need to be understood in terms of encouraging higher density transit oriented residential development. The conceptual estimates shown below for the South Park site presume the impact of these aforementioned factors. At present, no assumptions have been made for ancillary development, on- or off-site at the Orchard Park site due to the sites challenges of transportation access and remote location.



The Conceptual Ancillary Development Scenarios table presents conceptual scenarios for both on- and off-site development for each of the potential sites being evaluated. This information is being provided as examples of what might be possible both on- and off-site around a stadium and is not a predictor of what will occur once a site is selected and a stadium built. The table below summarizes initial order-of-magnitude on and off-site ancillary real estate development that could unfold related to each site.

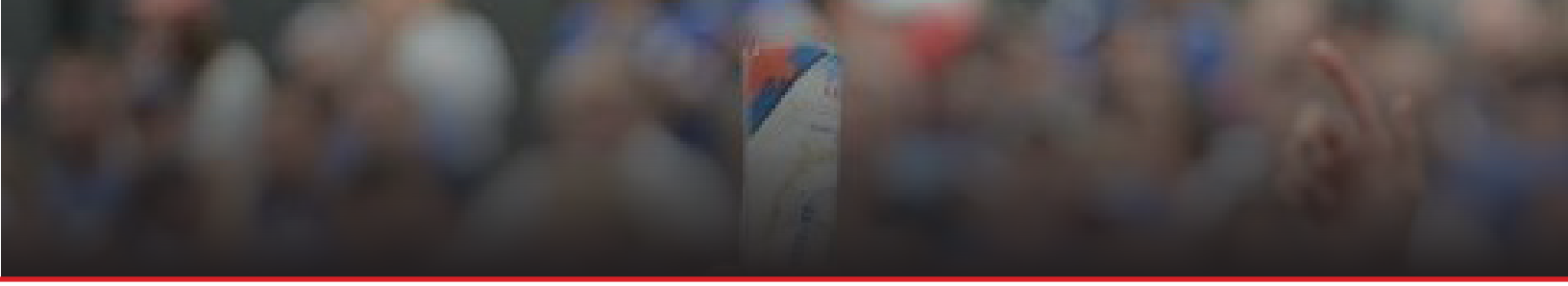


Conceptual Ancillary Development Scenarios

	Cobblestone		Exchange Street		South Park		Orchard Park	
Concept*	On Site	Off Site	On Site	Off Site	On Site	Off Site	On Site	Off Site
Hotel (rooms)	150	--	--	100	100	200	--	--
Residential (units)								
Multi-family	--	--	--	200	100	400	--	--
Single family	--	--	--	--	--	200	--	--
Office (ft^2)	--	--	--	20,000	20,000	--	--	--
Retail								
Team store (ft^2)	15,000	--	15,000	--	20,000	--	--	--
General (ft^2)	--	--	--	40,000	--	25,000	--	--
Big box (ft^2)	--	--	--	--	--	250,000	--	--
Restaurant/bar (ft^2)	15,000	35,000	15,000	40,000	25,000	10,000	--	--

* The real estate uses here are conceptual and represent hypothetical development scenarios based on evaluation of the proposed site, nearby development and comparable development.

Source: AECOM



METHODOLOGY AND RESULTS

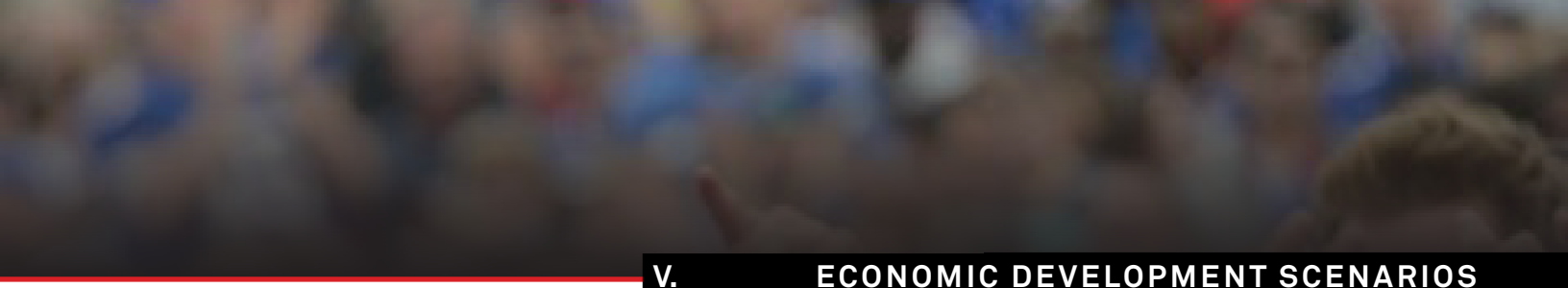
Economic impacts can be described as the sums of economic activity within a defined geographic region, in this case the State of New York, resulting from an initial change in the economy. This initial change, also referred to as the direct impact, spurs a series of subsequent indirect and induced activities resulting from interconnected economic relationships. This spending will create employment for local residents and associated income, as well as tax revenues to governments from the corporate income taxes, personal income taxes and sales taxes collected.

Economic impacts were measured using multipliers from IMPLAN for the State of New York in 2012. IMPLAN is economic impact modeling software which contains detailed information on the interactions of the various sectors within a specified economic region, in this case the state of New York. It is used to measure the effect of a given change on the local economy, in this case the construction and operations of an NFL stadium and conceptual ancillary development. The economic multipliers found in IMPLAN measure the re-spending of dollars in an economy and are used to calculate indirect and induced impacts, the 'multiplier effect.' Fiscal impacts include sales tax, personal income tax and corporate income tax for the state as well as sales tax collected by Erie County.

Results depicted in the Conceptual Economic and Fiscal Impacts Table on pages 62 and 63, are presented for changes in output, employment (Jobs) and wages in the state as a result of this shift in spending.

- Total Output: This is the total value of goods and services produced across all industry sectors and all stages of production in the study area.
- Jobs: This represents the number of jobs needed to support the given economic activity across all sectors. It includes all wage and salary employees, both part - and full-time, as well as self-employed, temporary and seasonal jobs.
- Wages: The total payroll costs (including benefits) across all sectors supported by the initial investment. It includes the wages and salaries of workers who are paid by employers, as well as benefits such as health and life insurance, retirement payments and non-cash compensation. It also includes proprietary income received by self-employed individuals.

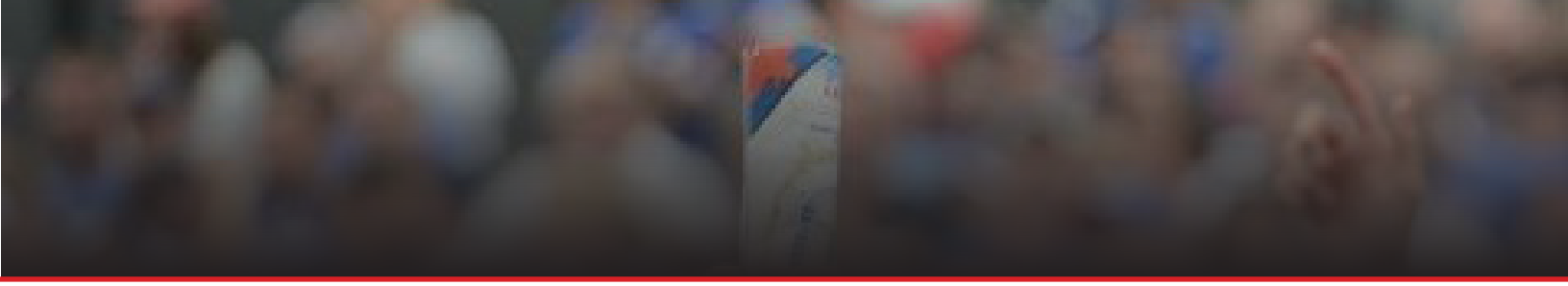
Economic impact analysis models how dollars move throughout the economy. Since the economy is composed of interlocking sectors, spending in one sector (i.e., the direct impact) will have indirect impacts on other sectors. For



example, spending at restaurants will create indirect impacts as the restaurants purchase goods and services from other businesses to provide meals to their customers. In addition, induced impacts occur as employees of all affected businesses spend their wages on goods and services they need for their households.

Based on the preliminary evaluation of the market and the conceptual ancillary development scenarios, we estimate economic and fiscal impacts for construction and annual operations at each of the shortlisted sites. In addition, we examined operating revenues for the stadium based on national averages as well as on-site parking revenue. Parking revenues were based upon an average cost of $25 dollars per space per event.

As shown on page 62, stadium construction costs at the Cobblestone District site are estimated at $787.6 million. If ancillary development of a 150 room hotel, a 15,000 square foot team store and 50,000 square feet of restaurant/ bar space open around a stadium at the Cobblestone District site, the estimated construction costs are $45.9 million. Annually, a stadium, if built on the Cobblestone District site, could generate $72.9 million in operations with an additional $1.3 million from on-site parking revenues. The proposed ancillary development, if built as conceptualized, could generate $24.8 million in additional revenues. If developed as outlined, the State of New York could receive $32 million in taxes from construction on this site as well as $5.9 million annually from operations. Fiscal impacts including estimated state tax revenues, include corporate income tax, personal income state tax and sales tax revenues.



CONCEPTUAL ECONOMIC AND FISCAL IMPACTS BY PROPOSED SITE

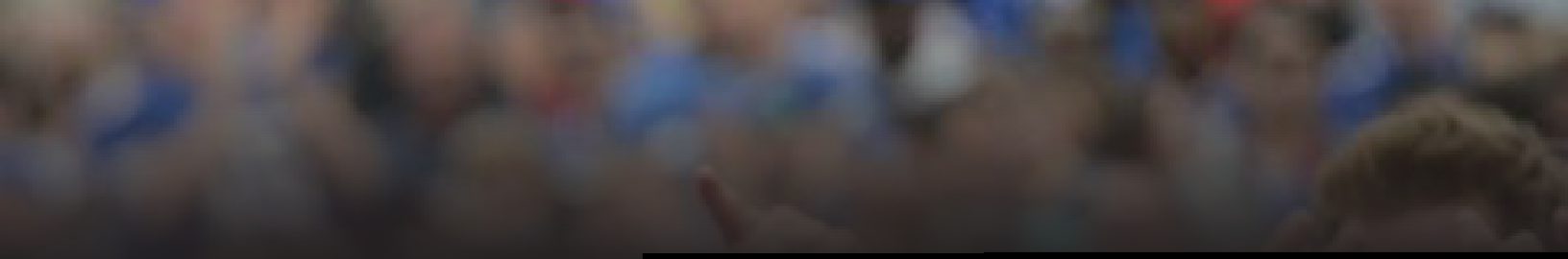
	Cobblestone	Exchange Street	South Park	Orchard Park
Construction				
Total Costs				
Stadium	$787.6	$784.6	$911.9	$554.9
Ancillary development	$45.9	$108.1	$365.0	$0.0
Total	$833.5	$892.8	$1,276.9	$554.9
Economic Impacts*				
Total output	$1,459.2	$1,565.4	$2,245.5	$971.3
Jobs	7,900	8,400	11,900	5,300
Wages	$632.2	$672.4	$949.8	$420.7
Fiscal Impacts**				
Erie County	$2.6	$2.9	$4.5	$1.7
State of New York	$32.0	$34.3	$49.1	$21.3

All cost in millions.

Note: Ancillary development estimates are conceptual and are not predictors of development or performance.

* All economic and fiscal impacts are for the construction period rather than an annual basis.

** Fiscal impacts include corporate income tax, personal income tax and sales tax for the State of New York and sales tax in Erie County.



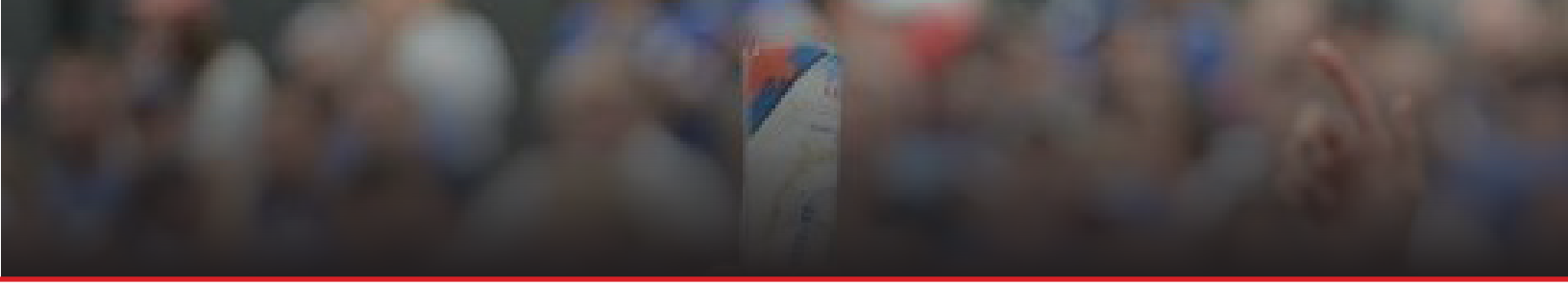
Annual Operations				
Total Operating Revenues				
Stadium	$72.9	$72.9	$72.9	$70.3
On-site parking	$1.3	$0.6	$10.1	$10.5
Ancillary development	$24.8	$33.0	$61.2	$0.0
Total annual revenue	$99.0	$106.5	$144.2	$80.8
Economic Impacts*				
Total output	$185.0	$196.8	$259.3	$158.9
Jobs	1,500	1,600	2,000	1,400
Wages	$104.3	$110.2	$138.3	$98.2
Fiscal Impacts**				
Erie County	$1.6	$1.7	$4.4	$0.4
State of New York	$5.9	$6.2	$9.6	$4.4

All revenues in millions.
Note: Ancillary development estimates are conceptual and are not predictors of development or performance.

* All economic and fiscal impacts are presented on an annual basis.

** Fiscal impacts include corporate income tax, personal income tax and sales tax for the State of New York and sales tax in Erie County.

The economic success of a stadium and any ancillary development is contingent on many factors including local market demographics and socioeconomics characteristics, management, the marketability to potential events and funding, among other things. Once a stadium site is chosen, AECOM recommends completing a detailed feasibility study evaluating both the stadium and potential ancillary development to determine the needs of the region and what



Of the 13 sites proposed and evaluated, 9 sites were not shortlisted. It is important to note that failure of a site to be included on the shortlist does not constitute a definitive dismissal of such site, but is instead an indication based on data evaluated to date that such sites are not as appealing as the shortlisted sits. In the case of each non-shortlisted site, certain obstacles contributed to the decision not to shortlist such sites. In some cases, single "deal-breaker" criterion resulted in a site note being shortlisted (e.g., the site size and/or configuration is not sufficient for an NFL stadium footprint). In other cases, a series of criteria contributed in the aggregate to a site not being shortlisted (e.g., extremely high infrastructure development and related costs, lack of connection with Buffalo icons and lack of access to public transportation). Should new information including team ownership input become available, it could result in further conversations and evaluation with respect to non-shortlisted sites. A summary matrix of the 13 proposed sites and the criteria used to evaluate such sites is set forth in Section III of this analysis, and criteria identified in red in such matrix (either in isolation or in the aggregate) were the principal drivers for such sites not being shortlisted. When such criteria were encountered, the site was put on the Non-shortlisted list and not evaluated for other criteria. Below is a listing of the 9 major potential stadium site locations which did not make the short list, presented in alphabetical order.

BATAVIA SITE

The Batavia site, a rural site located at the intersection of Highway 90 and local Highway 98. There is little definition to the boundaries of this particular site however it was anticipated to be bordered by Highway 98 to the west and State Street Road to the east, Interstate highway 90 to the south and an undetermined border to the north. This site offers marginal benefit to Bills fans that the other sites evaluated do not offer. The site's distance from the core Bills fan base in Buffalo would result in long commute times and creates increased pressure on I-90, the single main artery used for access. The site also offers little in the way of synergies with other entertainment venues or ancillary development.

CENTRAL TERMINAL

The Central Terminal site, located at the intersection of Memorial Drive and Paderewski Drive, has great architectural potential, but does not have sufficient area to accommodate an NFL stadium footprint nor the transportation systems to provide proper access without major disruption to the existing neighborhood fabric. Its boundaries were identified as Memorial Drive, and Paderewski to the west and north, Curtiss Street to the east, the active freight rail line to the south. While the sites overall acreage may equal some of the other urban sites, the narrow configuration of this site makes it extremely difficult to accommodate the stadium footprint in its proper orientation. As the site would operate as a suburban site, a larger challenge would be the lack of the necessary area (100+ acres) to self-support the parking inventory. Further, the roadways accessing the site system are currently only at a residential scale and over 1-1/2 miles to a major roadway system.

Because of its location, the site lacks the potential synergies associated with other entertainment developments as there are no significant developments within a 2 mile radius. Thus there would be no incentive that would spur ancillary development opportunities.

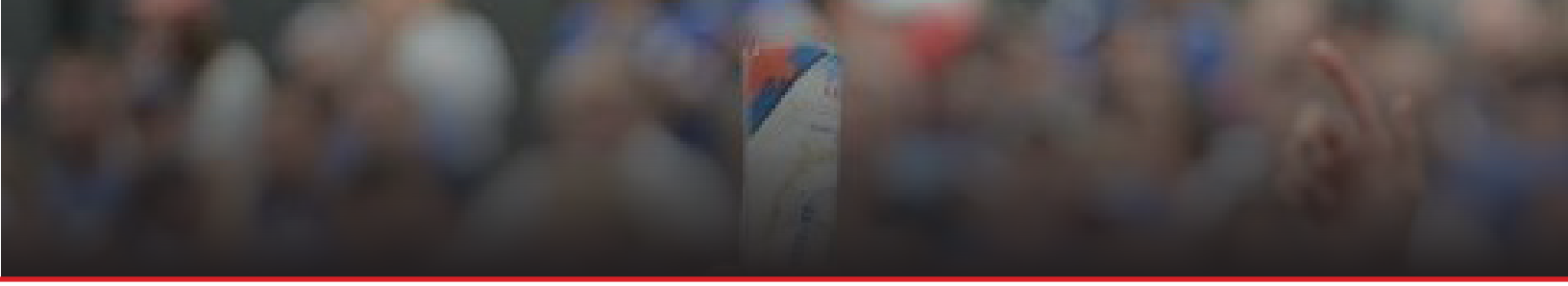
LA SALLE PARK

The La Salle Park, located along the lakefront and I-190 between Porter Avenue and Virginia Street, was another proposed waterfront site evaluated. Like the Outer Harbor site, this site has access challenges that will require infrastructure additions, which would include the addition of two new ramp systems to access the highway 190 and would negatively impact the nearby residential neighborhoods. Even more limiting, the La Salle Park Site has virtually no pedestrian access to any of the downtown Buffalo amenities or parking inventory, only a single pedestrian bridge currently exists. Further, as a waterfront site, there are likely environmental challenges that would need to be evaluated more fully but are outside of the scope of this analysis. Ultimately the combination of access challenges, environmental challenges and lack of ancillary development potential prevented this site from being shortlisted.

NIAGARA FALLS SITE

The site with the potential for the greatest regional impact of a new stadium would be in the City of Niagara Falls, located about 20 miles north of downtown Buffalo in the adjoining County of Niagara. The site is located less than a mile from the actual waterfalls, is comprises 136 acres of property under single ownership, and is bordered by Niagara Street to the north, Buffalo Avenue to the south, 8th street and the Seneca Casino to the west, and Portage Road to the east. Niagara Falls hosts an average of eight million visitors a year and serves as an iconic landmark for Western New York and the world, often shown on national broadcasts of Bills games. The site would serve as a natural complement to the Niagara Falls' downtown tourism district, which could serve as a pre-/post-game entertainment zone; and being in a largely-cleared redevelopment area, it would not be hampered by potential neighborhood impacts compared to other sites considered. It would also place the stadium venue relatively closer to the emerging fan base in Toronto and Southern Ontario; the site is about 10 city blocks from the international border and is at the midpoint of the region's four vehicular bridge crossings to Canada.

While locating a new stadium in downtown Niagara Falls could significantly leverage a number of current assets and activities there, the greatest obstacles to this becoming a shortlisted site are a number of deficiencies related to available institutional and built infrastructures to serve the needs of such a facility. For example, because it is located in Niagara County, the site would not benefit from organizational capacity and institutional knowledge of stadium operations developed over the last 40+ years by Erie County government for public safety, traffic control, and emergency response activities on game days.



Secondly, while Niagara Falls may be a more central location to access Southern Ontario, it would move the stadium venue further away from the main concentration of Bills fans in Buffalo and its immediate suburbs, requiring sufficient transportation capacity to handle stadium movements to/from the south and east of the proposed site. The major expressway providing such road access is I-190 (Niagara Section of the NYS Thruway), a largely four-lane facility that traverses Grand Island on its route to Niagara Falls via two pairs of toll bridges (the North and South Grand Island bridges). Traffic capacity issues currently occur at toll plazas at each bridge pair, particularly in the heavy summer tourist season. Preliminary investigations of transportation needs indicate that, at a minimum, the collection of tolls would need to be removed or suspended for game day traffic in order to expedite flow. However more likely, two additional lanes of capacity would also be necessary on I-190 at each bridge pair and across Grand Island—similar to the six-lane section of I-190 in downtown Buffalo—to sufficiently handle stadium-related flows in this corridor. Additional roadway improvements would also be required to the LaSalle Expressway and Buffalo Avenue in Niagara Falls. Similarly, transit capacity in the region (both bus and rail) is less heavily developed in Niagara County than at urban sites in Buffalo – rail access to Niagara Falls is located two miles north of the proposed site and the City does not currently have a major bus facility in the downtown district.

The costs of making such improvements could well exceed $1 billion, as well as affect annual toll revenues used to maintain I-190 and the North/South Grand Island bridges. While such improvements could have regional/super-regional implications (e.g., expanding road capacity at the Grand Island bridges could facilitate international trade and tourism flows), no significant plans are currently being considered to expand capacity the various connections between Buffalo and Niagara Falls in the foreseeable future. If in the future, prior to final site selection, such plans for improvement are developed and funded, this site's candidacy should be reconsidered, as the lack of infrastructure (and the related cost of such infrastructure) is the principal reason for the exclusion of this site from the short list.

OUTER HARBOR

The Outer Harbor site, located along Buffalo's water edge along Highway 5 downtown, has great potential for iconic architecture. The site is bordered by Lake Erie to the west, Highway 5 and Fuhrmann Boulevard to the east, the Buffalo Boat harbor to the south, and the Wilkenson Nature Preserve to the north. The site however would require extensive utility infrastructure and transportation developments in order to be viable for development. While the exact costs of such improvements would require a more detailed analysis, required improvements would include multiple new bridge development, utility improvements and the possible relocation of the General Mills plant. Plans proposed by some local developers call for 4 new connections from downtown Buffalo with a total of 8 new bridges spanning the Buffalo River and outer canal to complete the connection to the Outer Harbor site. Proponents of the site have suggested that the costs of such bridge improvements alone could be in the high hundreds of millions of dollars, before taking into account

any issues identified in environmental reports. Thus, the actual costs of the bridge improvements could exceed even the high estimates of project proponents. Not only could these improvements render the site cost-prohibitive, but would also significantly increase the likelihood of delay as the approval process for such infrastructure could take years.

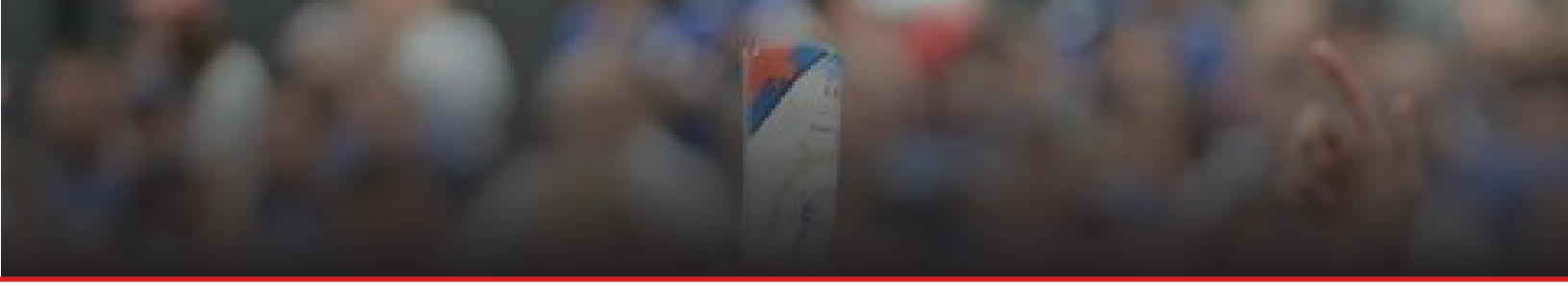
Further, environmental considerations also must be considered for any water's edge development such as Outer Harbor, though a detailed analysis of such environmental considerations is beyond the scope of this analysis. At minimum, there are reports of regular occurrences of extreme weather conditions, including strong wind chills and near white out conditions, during the NFL season at this site that could negatively impact fan experience and playing conditions at the site. There is also concern the placement of a stadium on the Outer Harbor site may be inconsistent with a series of current and past public policies and plans (e.g., City Comprehensive Plan, Brownfields Opportunity Area plans, Local Waterfront Revitalization Plan, City zoning and upcoming "Green Code, etc.), as well as the master planning process conducted by the Erie Canal Harbor Development Corporation, a subsidiary of Empire State Development. All of these policies suggest a more diverse mixed-use development strategy to the Outer Harbor involving multiple water-enhanced uses in lieu of a parking intensive use such as a stadium. In the aggregate, the factors described above and discussed more detail herein weigh against the construction of a stadium at the Outer Harbor site.

REPUBLIC STEEL SITE

The site of the former Republic Steel fabrication plant was evaluated, however with the future development of a technology office park on the site, much the usable land is already committed to other uses. The site is bounded by South Park Avenue to the north, active rail lines and Tifft Street to the south, the Buffalo River to the west and Hopkins Street to the east. Further, the remaining uncommitted area of the site includes the location of a large residual waste landfill. These factors, combined with the need for major infrastructure improvements, eliminated this site from the shortlist.

TONAWANDA STREET SITE

The Tonawanda Street site is situated between the intersection of I-90 and Scajaquada Expressway on the south and Tonawanda Street & Amherst on the north. The site is also bounded by a rail line to the west, the Niagara River on the south, and a creek along the eastern edge adjacent to and under the Scajaquada Expressway. While the site is large enough to accommodate an NFL stadium footprint and some parking (including potential shared parking spaces at the neighboring SUNY Buffalo State), vehicular access to and from the site is very limited and there is no viable public transportation options associated with the site. Development of vehicular access to the site appears difficult and cost prohibitive. Moreover, while the site is within Buffalo city limits, it does not present the ancillary development potential of the other three urban sites and their unique proximity to the downtown core and public transit.



UNIVERSITY OF BUFFALO (UAB)

A site at the University of Buffalo campus, located in Amherst, was evaluated but did not make the shortlist due to size and operational constraints. The only area of campus viable for accommodating an NFL stadium is the location of the existing football stadium, at Millersport Highway and therefore the facility presumably would become a shared NFL/ collegiate venue. Such shared venues rarely accommodate both levels of attendance well and usually create a less than desirable game environment for the university games. In addition, AECOM understands that campus parking inventories could not be considered for use for NFL games and that other resources for parking are not walking distance from the potential stadium site.

WEST SENECA SITE

The West Seneca site, located at the intersection of Highway 219 and Ridge Road, has the potential to host a Multi-purpose stadium due to current development plans for a mixture of multi-use, medium density development adjacent to the potential stadium site. However, notwithstanding the development plans, the completion of the contemplated development is uncertain and, but for the contemplated development, the West Seneca site offers limited value add features compared to the shortlisted sites. The stadium is currently proposed to be located on un-acquired land adjacent to the development at the corner of Orchard Park Road and Ridge Road with the proposed Buffalo Bills Way bordering the stadium on the west. Currently, parking inventory appears to be insufficient for stadium use and therefore other parcels to the north and south will need to be acquired to achieve parking counts necessary. There is also concern the placement of a stadium on the West Seneca site may be inconsistent with the overall economic development strategy as proposed by the WNY Regional Economic Development Council.

With only a single means of access from I-90 currently, the West Seneca development concept plans for additional 4 lane roadways to be developed in the place of a the current rail line running north-south and bisecting the site. The new required roadways are proposed to connect to I-90 on the south and the Aurora Expressway (Highway 400) to the north. The proposed arterials are currently planned only at a conceptual level and the route north is planned within the flood plain of the Cazenovia Creek.

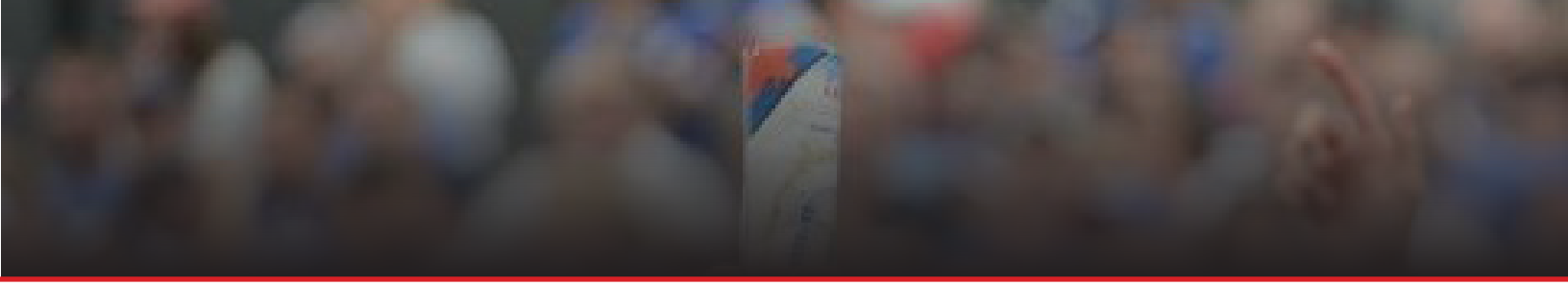
Further study is required of the key development issues such as the necessary roadway infrastructure costs and costs associated with providing the requisite parking. These efforts would need to account for necessary right-of-ways widths, acquisitions, utility relocations, and ultimately construction costs to recommend the site as suitable to accommodate a new NFL facility. Due to the uncertainty associated with the future development on this site, the site was not shortlisted at this time.

VI. NON SHORTLISTED SITES

OTHER SITES CONSIDERED

Certain other remote sites were considered but not analyzed in detail, as their distance from the core of Bills fan base in Buffalo would make for long commute times and place increased pressure on the single main arterial used for access. Other sites considered and not made part of the shortlist include:

- Greyhound Bus Terminal site – Site was eliminated due to lack of requisite size to accommodate the stadium in its proper orientation. The site located in downtown is bordered by Washington Street to the west, Elm Street to the east, Clinton Street to the north and South Division Street to the south. In addition to its size constraints, the site would have interrupted the major arterial connectors of Oak Street and Elm Street, connecting the current sports district to Highway 33.
- Bethlehem Steel site- Site was eliminated due to proximity to current and potential future development that would not be fully compatible with stadium uses. The 1,100-acre brownfield site, created by the closure of the steel plant in 1982, is being progressively cleaned up and repurposed for a number of new industrial, power generation, and intermodal and transshipment uses. For example, the Port of Buffalo officially moved from the Buffalo Outer Harbor site to this site's deep-water port facilities in the late-1980s. Steel Winds, a 14-turbine wind farm was established along the site's Lake Erie waterfront in 2007. Rail/truck staging and shipment facilities are actively running in the southern portion of the site. Most recently, in July 2014, a new power project called Steel Sun was announced, which will involve the installation of a 3,000-panel solar array at the site. Site was eliminated due to commuting distance of almost 5 miles from the central entertainment distance from lack of synergies with potential development. Located south of downtown between Highway 5 to its east border, and Lake Erie as its east border, the site would have no connection to other entertainment areas of Buffalo and would require infrastructure improvements to achieve proper access routes.



In connection with any further action regarding stadium site planning, AECOM recommends further evaluations be undertaken with respect to certain key areas. These were outside of the scope of this analysis, which was focused on conceptual planning and macro environmental, aesthetic, cost and infrastructure issues. The following is an abbreviated list of items for more detailed study:

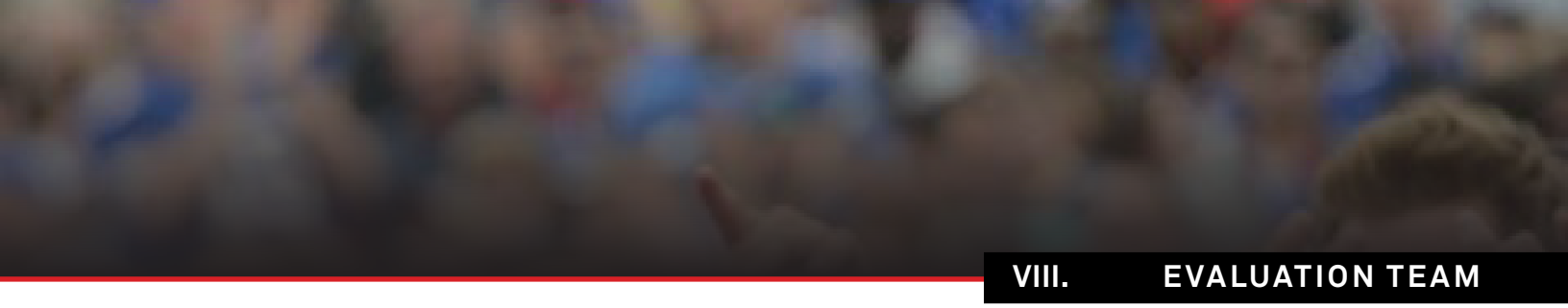
1. Site Investigations
    a. Land survey
    b. Geotechnical analysis
    c. Brownfield / historic contamination potential
    d. Utility location/accessibility
    e. ROWs, easements, and street lines
    f. Ownership

2. City/County Permitting/Approvals
    a. Zoning requirements/restrictions
        -Bulk/Floor Area Ratio restrictions
        -Appropriateness of zoning in adjacent development areas
        -Building height limitations
    b. Environmental Assessment/Environmental Impact Statement
        -Traffic congestion
        -Noise
        -Light spillage
        -Visual impacts and community character
        -Wetlands/natural resources
        -Impacts to provision of utilities
        -Mitigation of identified impacts
    c. Floodplain & floodway management
    d. Site plan review and public review/participation

3. State/Federal Permitting/Approvals
    a. US Army Corp of Engineers
    b. NYS Department of State
    c. NYS Department of Environmental Conservation

VII. FURTHER EVALUATIONS

The extent and nature of any further evaluations will vary from site to site. For example, a site in a former industrial area or on a former landfill (e.g., the Republic Steel site will have a greater need for environmental studies to assess potential contamination issues. Sites near the waterfront (e.g., the LaSalle Park site or the Outer Harbor site) will introduce a variety of specific reviews including consistency with the Local Waterfront Revitalization Plan, flood plan impacts and, if the site requires work on adjacent bulk heading, permitting from the US Army Corp of Engineers.



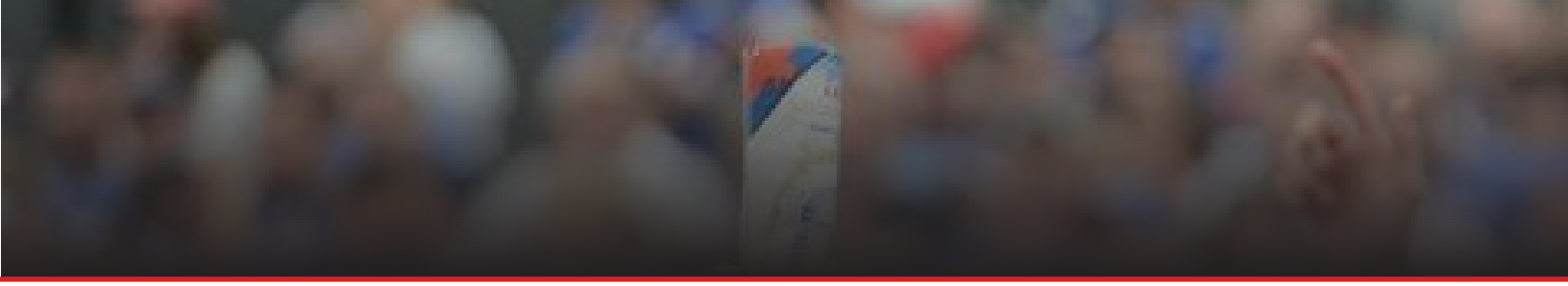
VIII. EVALUATION TEAM

AECOM is one of the world's largest, most comprehensive design and planning consultancies, combining architecture, engineering, environmental planning, economics, and urban design. AECOM's services include integrated solutions for regional and local planning, architecture, landscape architecture, economics, sustainability, urban regeneration strategies, community development, land management, water and natural resource planning, environmental regulatory reviews, and habitat creation and restoration.

In connection with the preparation of this analysis, the AECOM team conducted investigative meetings with key stakeholders, developers, and governmental groups to assemble the analysis in this report. Included in the stakeholder meetings conducted were members of:

- Empire State Development
- USA Niagara Development Corporation
- County of Erie, Department of Environmental Planning
- County of Erie Executive offices
- City of Buffalo Planning Department
- Niagara Frontier Transportation Authority
- Larkin Development Group
- Other Private Developer Organizations

To provide the most comprehensive evaluation possible for this analysis, AECOM assembled a project team equipped with strong planning and programming backgrounds as well as significant sports facility architectural design experience. The skills brought to the table offer significant planning and evaluation components, with a marriage of the best NFL facility expertise and local building implementation knowledge.



Key members of the AECOM team included:

Jon Niemuth

Jon is AECOM's Sports Market Sector Leader for the Americas. For Jon, ground-breaking design is about more than form and image. In his 18 years at AECOM, he has executed designs with both wide ranging architectural and cultural influences, while ensuring that each design integrates with today's modern amenities and flexibility. Jon is the rare architect who excels at all levels of sports design both domestically and internationally for collegiate, professional and civic clients. His projects range from the Seattle Seahawks' Century Link Field, Cincinnati Bengals Stadium Study, Cleveland NFL Stadium Study and Detroit Lions Domed Stadium Study to the University of Oregon Autzen Stadium Renovation, University of Connecticut Rentschler Field and Washington State University Martin Stadium Expansion. Jon has been extremely successful in delivering to clients successful, world-class design solutions that address diverse goals and priorities, while rigorously adhering to budget- and schedule-driven objectives. His focus on projects is at the early planning, programming and budget creation stages; however, Jon remains personally involved in all projects of the practice through a studio style direction and oversight of a talented team of project designers.

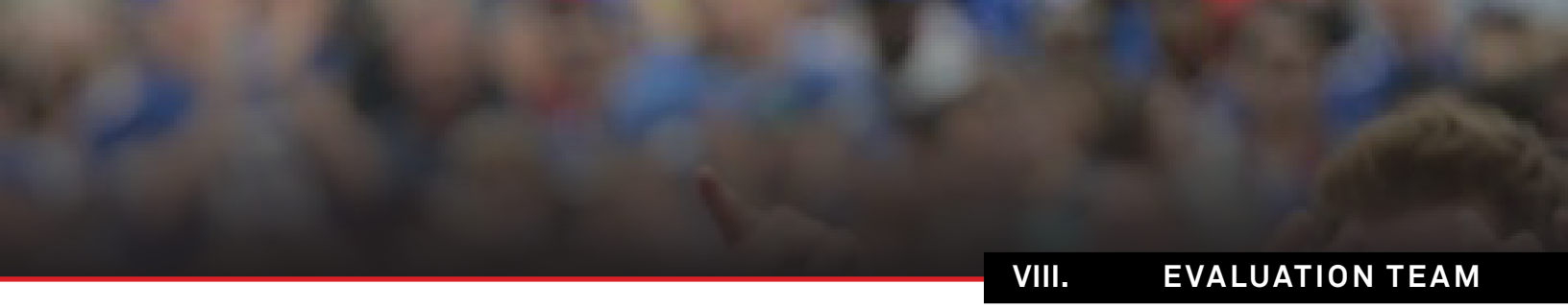
Christopher Mitchell

Christopher, a registered architect and a LEED Accredited Professional with 20+ years of diverse project experience, maintains every project can be significant with an appropriate design approach. His project experience spans residential, retail, industrial manufacturing, sports facilities, museum, civic and theatrical design. After graduating from Kansas State University in 1992, Christopher began his career designing sports stadia for notable local sports firms such as HOK Sport (now Populous) and Ellerbe Becket (now AECOM). Projects of note include the San Francisco Giants new MLB Stadium, the Seattle Seahawks new NFL stadium and the University of Oregon's Autzen Stadium expansion.

Paul Griesemer

A nationally recognized leader in sports design, Paul has dedicated himself to pioneering the development of quality sports facilities specifically focused on football stadiums and training facilities. With more than 30 years of experience practicing architecture, his experience spans stadiums, convention facilities, Olympic venues and multi-purpose facilities, including recreation and training facilities. Paul has led the facility design efforts for 12 NFL franchises, many as repeat clients, universities and stadium efforts in several countries.

Paul's relevant project experience includes the Louisiana Superdome renovation, the redevelopment of Lambeau Field for the Green Bay Packers, improvements to FedExField for the Washington Redskins and EverBank Field improvements



for the Jacksonville Jaguars. Additionally, Paul has performed a key role in the concept design of a new shared retractable-roofed Minnesota Football Stadium for the NFL Vikings and the $90 million expansion of Autzen Stadium for the University of Oregon. Paul has also led the design of Edwards Jones Dome in St. Louis, Raymond James Stadium in Tampa, Florida and EverBank Field in Jacksonville, Florida while with another firm.

David Stone

David joined AECOM Economics (formerly Economics Research Associates) in 2007 and has more than 10 years of experience in the analysis of real estate projects. His consulting practice focuses primarily on market and financial feasibility and economic and fiscal impact analyses of sports and recreation projects for public agencies, private developers, sports franchises, financial institutions and colleges and universities. He also has experience with a variety of other project types, including convention centers, hotels, amphitheaters and others.

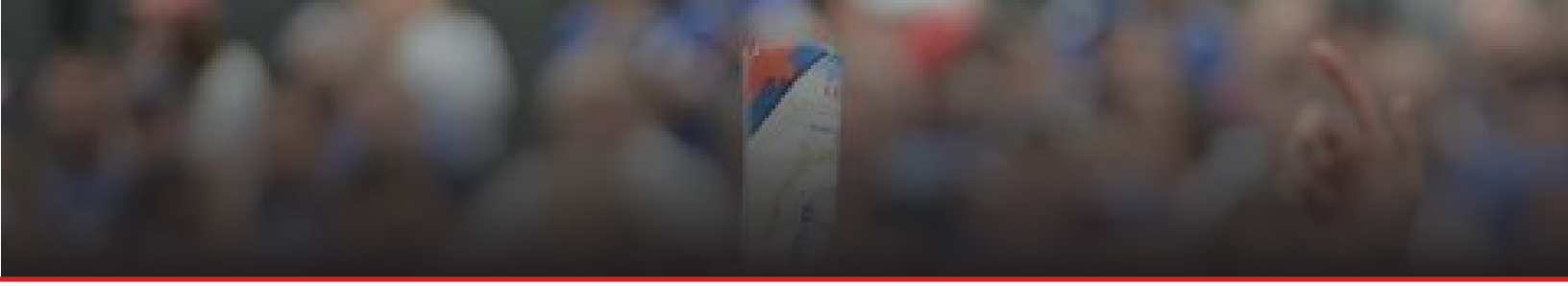
Steve Kelly

Steve has more than 25 years' experience in the cost management profession, working on behalf of building contractors and cost consulting firms. Steve is a leader with the Davis Langdon Sports Group with experience working on high-profile sports projects, including stadia as well as a full range of facilities for competition and spectators and high-performance centers for training and the development of sports excellence. During the last six years, he has participated in more than 125 sports and recreation projects of varying sizes and degrees of complexity, including the Rose Bowl renovation, three Major League Soccer stadiums and Dodger Stadium renovation and expansion. Steve also works with our international Sports Group, which specializes in major global games/sports facilities.

Alan Harwood

Alan is a Principal and Vice President with AECOM and has worked in the Washington area office since 1987. He is a certified planner with more than 29 years of award-winning experience in community revitalization, urban planning, community revitalization and environmental impact analysis associated with major sports facilities. He brings excellent instincts, a strategic approach, strong leadership skills and a personal commitment to each project.

Alan has successfully completed challenging projects for a variety of clients, including Major League Soccer (MLS), National Basketball Association (NBA), Major League Baseball (MLB) and National Football League (NFL) teams and facilities. A particular expertise of Alan's is the economic development of parcels and communities surrounding the facilities. He has been involved with projects that have won more than 25 awards since 1990.



Gary Davies

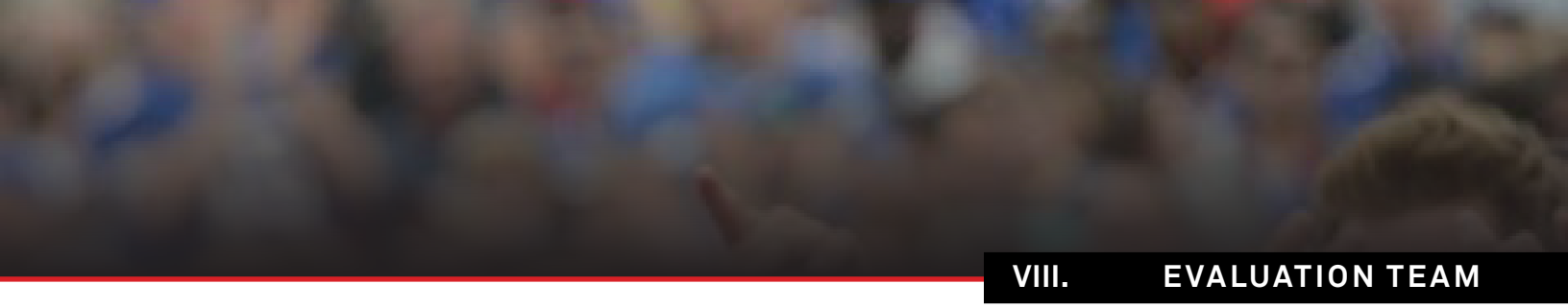
Gary, with more than 30 years of experience in traffic operations and transportation planning, is an expert in regional, county and municipal transportation planning studies, as well as analyses and planning efforts relating to traffic simulation, emissions estimation, travel demand management and employer trip reduction programs. He is a recognized leader in the development and application of major travel models and software systems to analyze a wide range of transportation operations and performance.

Shelly Fialkoff

Shelly is highly proficient in the transportation industry as a project manager and transportation engineer. He has served as deputy director of planning for the New York State Metropolitan Transportation Authority and was responsible for the planning of new facilities for both rapid transit and commuter rail systems. His responsibilities included supervision of federally-funded transportation programs. Mr. Fialkoff's transit experience includes conceptual feasibility studies for new and high technology (AGT) transportation systems, transit and commuter rail stations, new transit expansion projects, environmental impact analyses of transportation projects and transit related capital planning studies.

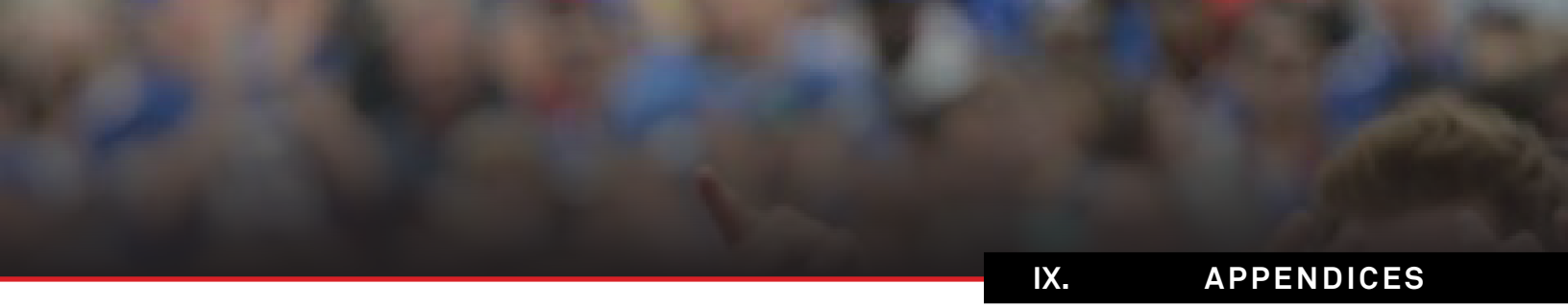
James Kaczor

Mr. Kaczor has over 25 years of professional experience in the engineering and consulting industry, and is responsible for the day-to-day operations of the Central and Western York offices including Amherst (Buffalo), Ithaca, and Syracuse, New York. He has been responsibly involved in all aspects of engineering and consulting including the development, execution, assessment and reporting of civil construction, geotechnical investigation and waste management projects. Mr. Kaczor's typical projects include remedial design investigations, environmental assessment investigations, hydrogeologic and geologic studies, review and assessment of remedial design packages and remedial contractor oversight.



VIII. EVALUATION TEAM

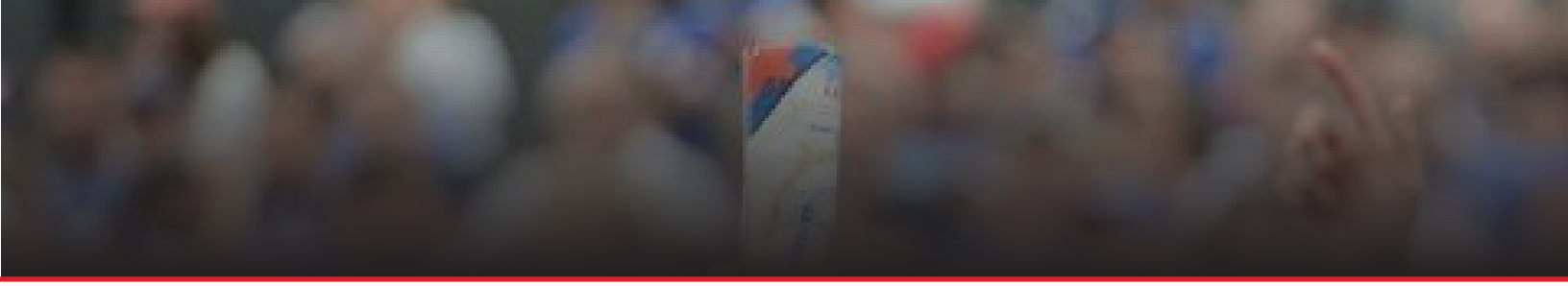
BILLS
94
3
30
28
94



IX. APPENDICES

APPENDICES

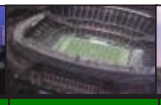
- A. NFL CASE STUDIES
- B. BASE NFL PROGRAM
  - i. OPEN AIR FOOTBALL STADIUM
  - ii.MULTI-PURPOSE STADIUM
- C. TRIP GENERATION ANALYSIS
- D. RELATIVE SITE COST ANALYSIS
- E. RALPH WILSON RENOVATION POTENTIAL

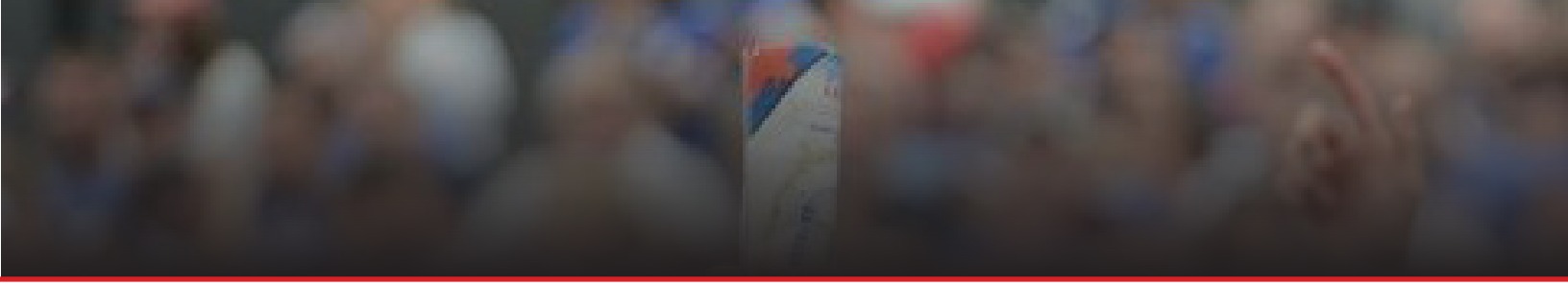


NFL Stadium Comparison

FEATURES	Lambeau Field	Bank of America Stadium	FedEx Field	Raymond James Stadium	CenturyLink Field	M&T Bank Stadium	First Energy Stadium
Year Opened (Renovated)	2002	1996	1997	1998	2002	1998	1999
Capacity (total current/future)	71,800	73,258	80,116	66,321	67,000 / 72,000	69,084	73,200
Club Capacity (current/future)	6,200	11,358	15,802	12,000	7,500 / 10,000	8,196	8,600
Suites	174	158	244	195 (3 Levels)	98 12 Field	52 Upper & 56 Lower)	147
Suite Capacity	3,000	2,270	5,118	2,500	2,106	2,410	12-50 per suite
% of Sideline Seats	52	53	51%	65%	61%	52%	44%
% of Capacity in the Lower Bowl	n/a	45%	40%	62%	46%		33%
Club Lounge	97,671 sq ft	110,000 sq ft	156,270 sq ft	83,320 sq ft	159,100 sq ft	83,320 sq ft	111,260 sq ft
Concessions (general spectators)	180 Fixed (Main) 107 Fixed (Upper) TBD Portables	292 Fixed POS 47 Portable	328 Fixed POS 42 Stands 75 Portable	304 Fixed POS 32 Stands 124 Portable	312 Fixed POS 37 Stands	245 Fixed POS 44 Stands	214 Fixed POS 33 Stands 71 Portable
Ratio (Fixed P.O.S. to Spectator Incl. Clubs)	1:200 (Main & Upper) and 1:110 (Club)	1:178	1:221	1:181	1:182	1:230	1:130
Novelty Store	Yes	Yes	Yes	8 Permanent Stands	Yes	No	Yes
# of Booths	Nat'l TV + 16	Nat'l TV +10	Nat'l + 13	Nat'l TV + 14	Nat'l TV + 8	Nat'l TV + 10	Nat'l TV + 10
# of Writer Locations	217/271	154/200	192/240	225/280	175/225		144
Concourse Width (Main)	50' min - 110' max	30' min - 76' max	50' min - 72' max	44' min - 80' max	40' min - 90' max	40' min - 64' max	26' min - 104' max
Concourse Width (Upper)	32' min - 35' max	24' min - 64' max	32'	30' min - 52' max	26' min - 48' max	24' min - 32' max	12' min - 32' max
Building Area	1.63m square feet	1.6m square feet	1.68m square feet	1.65m square feet	1.41m square feet	1.6m square feet	1.47m square feet
Elevators	12 Passenger 1 Service	11 Passenger 2 Service	8 Passenger 2 Service	20	10 Passenger 3 Service	7	9 Passenger 2 Service
Escalators	4 (Club)	0	4	20	0	2	2
Club Restaurant/Bar	TBD	5	No	4 Sports Bars 2 Restaurants	Yes	No	Yes
(including renovations) Year of construction dollars	$238,000,000	$269,000,000	$275,000,000	$168,000,000	$290,000,000	$220,000,000	$320,000,000
ECONOMIC INDICATORS							
Funding Sources	Public & Private	[illegible] seat licenses); City $40m; County $10m; Ericcson $20m	25.6% Public 74% Private	100% Public	69.8% Public 30.2 Private	Tax Exempt Revenue Bonds, Lottery & Ravens	74.7% Public 25.3% Private
Metropolitan Size							
Average Attendance							
Ancillary Development	Sub Urban Site Mixed Use Planned	Urban Site No Ancillary Revenue to team	Sub Urban Site	Sub Urban Site Adjancent abandoned mall being considered.	Urban Site Mixed Use under development	Urban Site No Ancillary Revenue to team	Urban Site

AECOM

								
Paul Brown Stadium	**Georgia Dome**	**Soldier Field**	**Ford Field**	**Reliant Stadium**	**HHH Metrodome**	**Lucas Oil Stadium**	**Univ of Phoenix**	**Ralph Wilson Stadium**
2000	1992	2003	2002	2002	1982	2008	2006	1973
65,600	71,500	62,000	65,000	69,500/70,000	64,121	63,000	63000/72000	74,000
7,600	4,600	8,740	8,600	7,514	0	7,100	7,400	6,878
114	164	138	132	166	112	137	88	121
1,728	1,714	2,660	2,232	3,020	1,714			1,936
70%	45.70%	64%	61%	52%	45.70%			74%
42.50%	43%	62%	58%	37%	43%			68%
~80,000 sq ft	44,500 sq. ft.	63,888 sq. ft.		96,000 sq. ft.	0		78,000	100,938 sq. ft.
407 Fixed POS* 56 Stands * unconfirmed	248 Fixed POS 40 Stands	320 Fixed POS 34 Stands	56 Stands 33 Portable	328 Fixed POS 42 Stands 75 Portable	243 Fixed POS	148 Stands 33 Portable	310 fixed POS	114 Fixed Main 56 Fixed Upper 104 Fixed Club
1:147	-	1:160		1:203	1:256			1:243
Team Store + 8 Fixed Novelty	No Store + 12 Stands	2 Team Stores	Team Store	No	No	Team Store	Team Store	Team Store
Nat'TV + 6	National TV + 9	Nat'l TV + 12	Nat'l TV + 11	Nat'l + 13	National TV + 8			Nat'l TV + 8
156	109	225	262	175	109			98
30' min - 60' max	30'-0"	25' min - 30' max		40' min - 75' max	24'-0"	30' min - 80' max		18' min - 48' max
30'min - 60' max	19'-0"	26' min - 52' max		26' min - 60' max	29'-0"			18' min - 39' max
1.88m square feet	1.6m square feet	1.5m square feet	1.83m square feet	1.96m square feet		1.8m square feet	1.7m square feet	1.02m square feet
10 Passenger 2 Service	8 Passenger 2 Service	7 Passenger 4 Service	16	9 Passenger 2 Service	1 Passenger 2 Service	11	10	2 Passenger
7	8	2	8	12	-	14	18	3 Service
No	Yes	No	Yes	Yes	No	Yes	Yes	-
$400,000,000	$214,000,000	$635,000,000	$500,000,000	$425,000,000		$720,000,000	$500,000,000	
1/2 cent sales tax	100% Public	63% Public 37% Private	Public & Private	25.6% Public 74% Private		Public & Private	Public & Private	Public
Urban Site Mixed Use Planned	Urban Site New Stadium Development underway	Urban Site No Ancillary Revenue to team	Urban Site No Ancillary Revenue to team	Sub Urban Site Part of Astro World Development	New Stadium under Development with Ancillary Development	Urban Site No Ancillary Revenue to team	Sub Urban Site Adjacent to Westgate Entertainment District	Sub Urban Site



NFL Open Air Stadium Program Summary

Open Air Football

CATEGORY ONE: SPECTATOR FACILITIES						
Category	Description	Unit	S.F.	Total NSF	GSF	Remarks
SUB TOTAL SPECTATOR FACILITIES					**737,375**	

CATEGORY TWO: FOOD SERVICE & MERCHANDISE FACILITIES						
Category	Description	Unit	S.F.	Total NSF	GSF	Remarks
SUBTOTAL CONCESSIONS / MERCHANDISE FACILITIES					**132,102**	

CATEGORY THREE: TEAM FACILITIES						
Category	Description	Unit	S.F.	Total NSF	GSF	Remarks
SUBTOTAL TEAM FACILITIES					**53,898**	

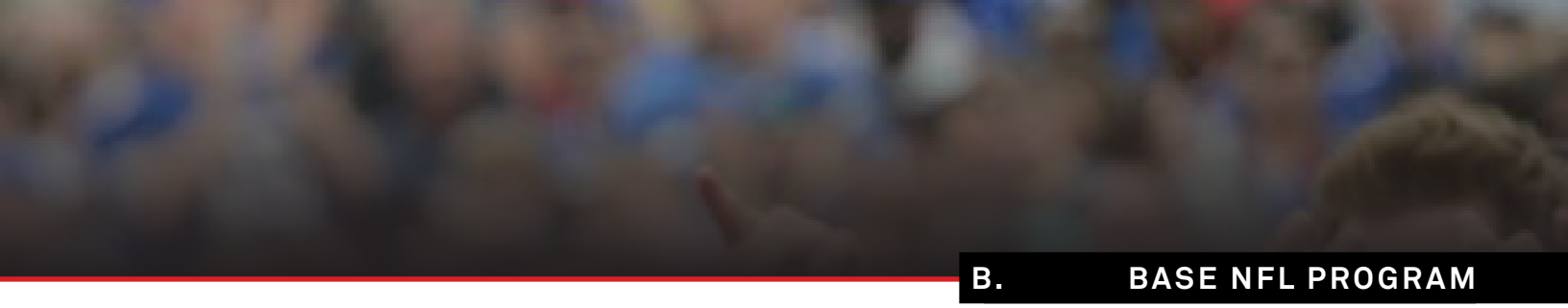
CATEGORY FOUR: MEDIA FACILITIES						
Category	Description	Unit	S.F.	Total NSF	GSF	Remarks
SUBTOTAL MEDIA FACILITIES					**33,678**	

CATEGORY FIVE: ADMINISTRATION FACILITIES						
Category	Description	Unit	S.F.	Total NSF	GSF	Remarks
SUBTOTAL ADMINISTRATIVE FACILITIES					**9,738**	

CATEGORY SIX: OPERATIONS FACILITIES						
Category	Description	Unit	S.F.	Total NSF	GSF	Remarks
SUBTOTAL OPERATIONS FACILITIES				**341,020**	**409,224**	

CATEGORY SEVEN: CIRCULATION						
Category	Description	Unit	S.F.	Total NSF	GSF	Remarks
SUBTOTAL CIRCULATION				**408,804**	**490,565**	

TOTAL STADIUM SQUARE FOOTAGE	**1,866,580**



NFL Multi-Purpose Stadium Program Summary

Multi-Purpose

CATEGORY ONE: SPECTATOR FACILITIES						
Category	Description	Unit	S.F.	Total NSF	GSF	Remarks
SUB TOTAL SPECTATOR FACILITIES					**794,015**	

CATEGORY TWO: FOOD SERVICE & MERCHANDISE FACILITIES						
Category	Description	Unit	S.F.	Total NSF	GSF	Remarks
SUBTOTAL CONCESSIONS / MERCHANDISE FACILITIES					**135,702**	

CATEGORY THREE: TEAM FACILITIES						
Category	Description	Unit	S.F.	Total NSF	GSF	Remarks
SUBTOTAL TEAM FACILITIES					**53,898**	

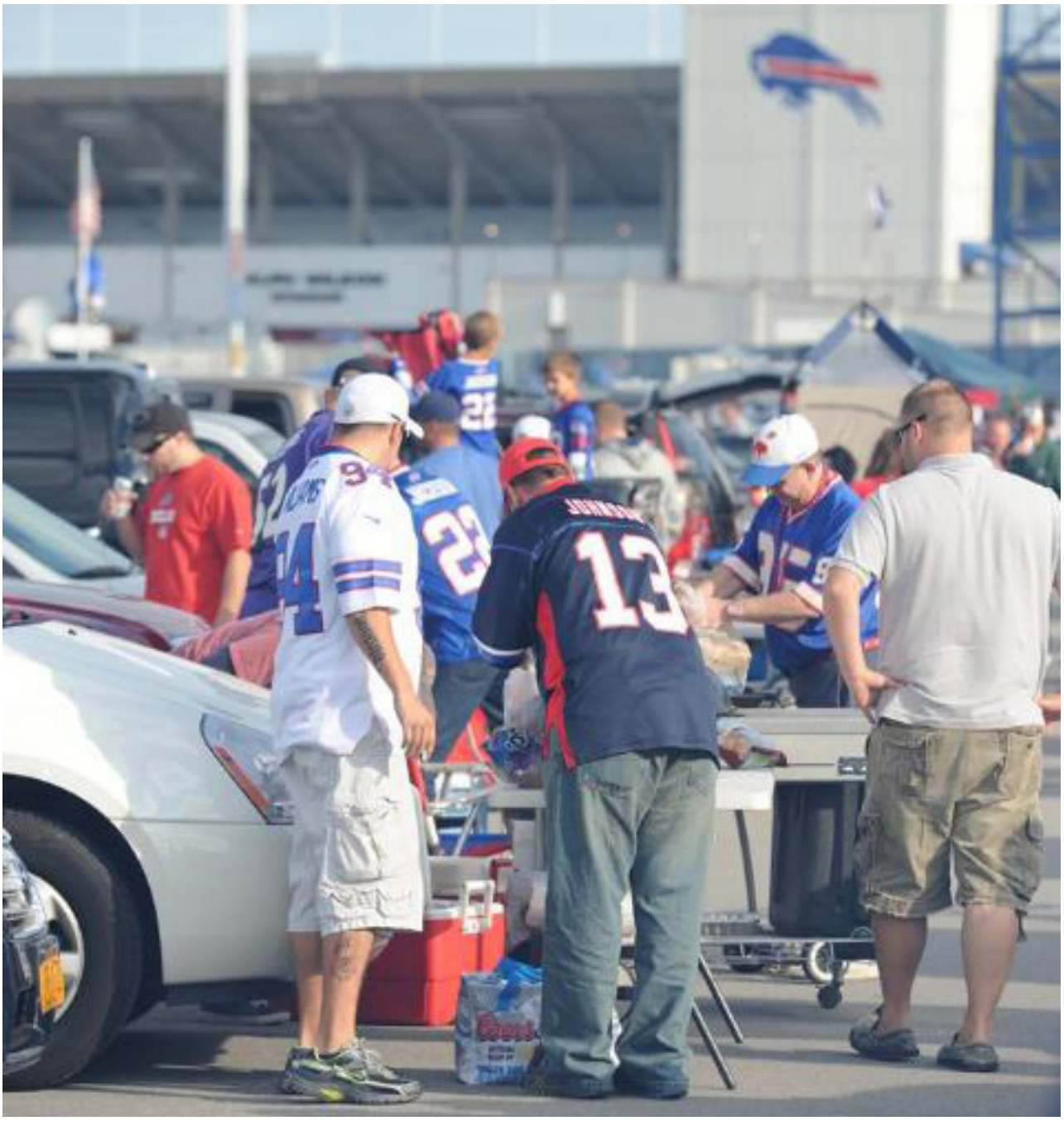
CATEGORY FOUR: MEDIA FACILITIES						
Category	Description	Unit	S.F.	Total NSF	GSF	Remarks
SUBTOTAL MEDIA FACILITIES					**33,678**	

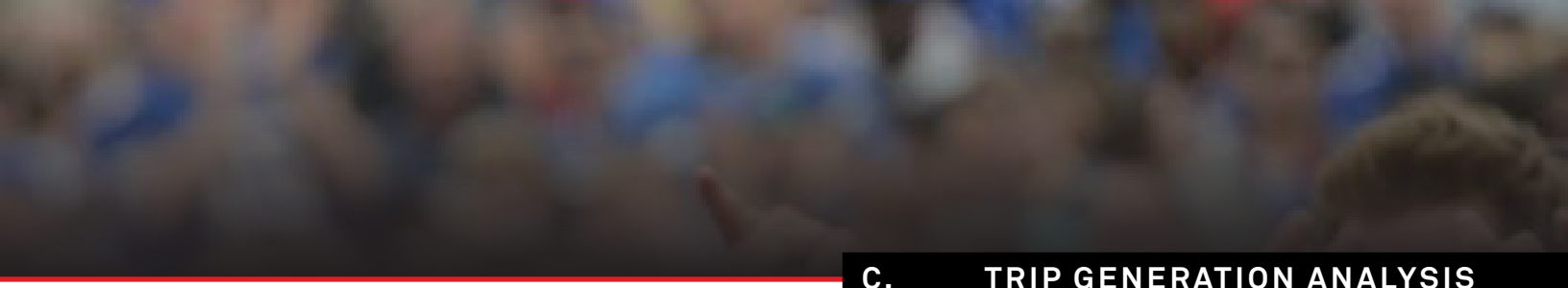
CATEGORY FIVE: ADMINISTRATION FACILITIES						
Category	Description	Unit	S.F.	Total NSF	GSF	Remarks
SUBTOTAL ADMINISTRATIVE FACILITIES					**9,738**	

CATEGORY SIX: OPERATIONS FACILITIES						
Category	Description	Unit	S.F.	Total NSF	GSF	Remarks
SUBTOTAL OPERATIONS FACILITIES				**481,020**	**577,224**	

CATEGORY SEVEN: CIRCULATION						
Category	Description	Unit	S.F.	Total NSF	GSF	Remarks
SUBTOTAL CIRCULATION				**408,804**	**449,684**	

TOTAL STADIUM SQUARE FOOTAGE	**2,053,939**





TRIP GENERATION ANALYSIS

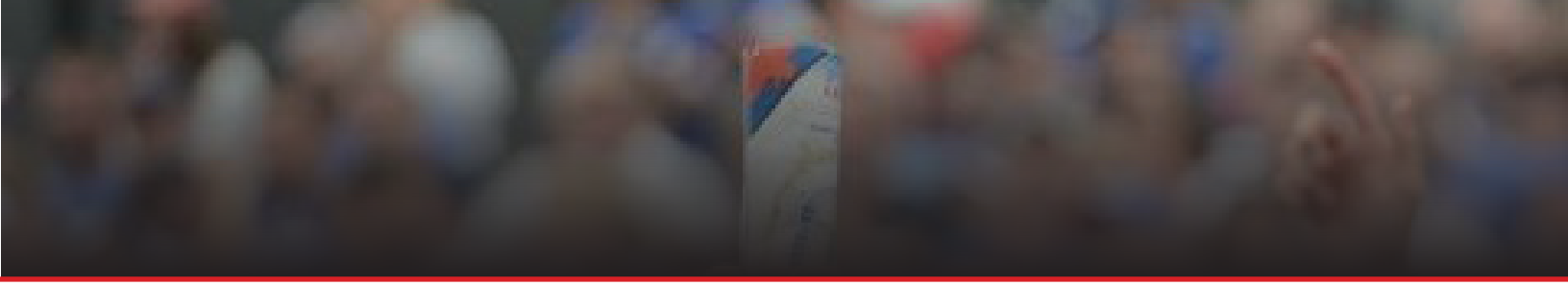
Stadium Program

65000 Guest Seats
200 VIPs
3000 Game Day Employees

Generic Mode Share		Occupancy	Persons	Vehicles		Site Specific Mode Share A	B	D	E	F	G
75%	via Auto	3.50	48750	13,929	Autos						
	VIP Auto	2.00	200	100	Autos						
15%	via Light Rail (Primary)	540	9750	18	Trains	15%	15%	15%	15%	0%	0%
5%	via Transit Bus	35	3250	93	Buses						
3%	via Hired Car / Shuttle	5	1950	390	Vehicles						
2%	via Charter Bus	35	1300	37	Buses						
100%			65200								
	Entire Game Day			14,419	Parking Spaces (On and off-site)	14,419	14,419	14,419	14,419	16,963	16,963
					Parking Spaces (On-Site)	8,651	9,372	5,047	4,326	16,963	16,963
					Parking Spaces (Off-Site)	5,767	5,047	9,372	9,372	-	-
				9,750	LRT Passengers (Primary)	9,750	9,750	9,750	9,750	-	-
					LRT Passengers (Secondary)	10,093	1,766	16,401	26,242	-	-
					LRT Passengers (Total)	19,843	11,516	26,151	35,992	-	-
			Target	Current Orchard Park							
	Arrival Peak Hour		20%	20%	Vehicles to On-Site	1,730	1,874	1,009	865	3,393	3,393
					Vehicles to Off-Site	1,153	1,009	1,874	1,874	-	-
			60%	60%	LRT Passengers as Primary	5,850	5,850	5,850	5,850	-	-
					LRT passengers as Secondary	6,056	1,060	9,841	15,745	-	-
	Departing Peak Hour		50%	45%	Vehicles from On-Site	4,326	4,686	2,523	2,163	8,482	8,482
					Vehicles from Off-Site	2,884	2,523	4,686	4,686	-	-
			80%	80%	LRT passengers as Primary	7,800	7,800	7,800	7,800	-	-
					LRT passengers as Secondary	8,074	1,413	13,121	20,993	-	-
Needed Highway Capacity											
via Ramps	1,500	vphpl		0.0	Arriving Lanes	1.9	1.9	1.9	1.8	2.3	2.3
				0.0	Departing Lanes	4.8	4.8	4.8	4.6	5.7	5.7
via Signals	900	vphpl		0.0	Arriving Lanes	3.2	3.2	3.2	3.0	3.8	3.8
				0.0	Departing Lanes	8.0	8.0	8.0	7.6	9.4	9.4

Arrival Temporal Distribution	MetLife	Bills	Target
3rd+ hour	57%	55%	55%
2nd hour	21%	20%	20%
1st hour	17%	20%	20%
PostKickoff	5%	5%	5%

Departure Temporal Distribution	MetLife	Bills	Target
4th qtr	15%	15%	15%
1st hour	40%	45%	50%
2nd hour	35%	30%	25%
3rd+ hour	10%	10%	10%



Executive Summary

Project Overview and Cost Drivers

This report considers potential costs for a new 65,000 seat football stadium for the Bills in Buffalo, New York. Several sites are contemplated in this report, along with variations on the basic stadium model. Potential costs for each site are reported on our Site Option Summary and each begins with a stadium which, like the current facility, has no roof. In this baseline, we also consider the development of a site "apron" which would theoretically extend to 25' beyond the building exterior walls. Variables which are contemplated for the facility and which affect overall costs are the inclusion of space and programmatic features which would allow the stadium to function for trade shows and the like (the "Dual Purpose" variable). Subsequent to that, we consider the options of a roof which covers the entire facility and then another which considers costs if that roof could open & close mechanically. Lastly, we consider how the cost model would be affected by the site variable - size primarily and then, in one case, the desire to raise the event level to above flood plain level in that specific locale.

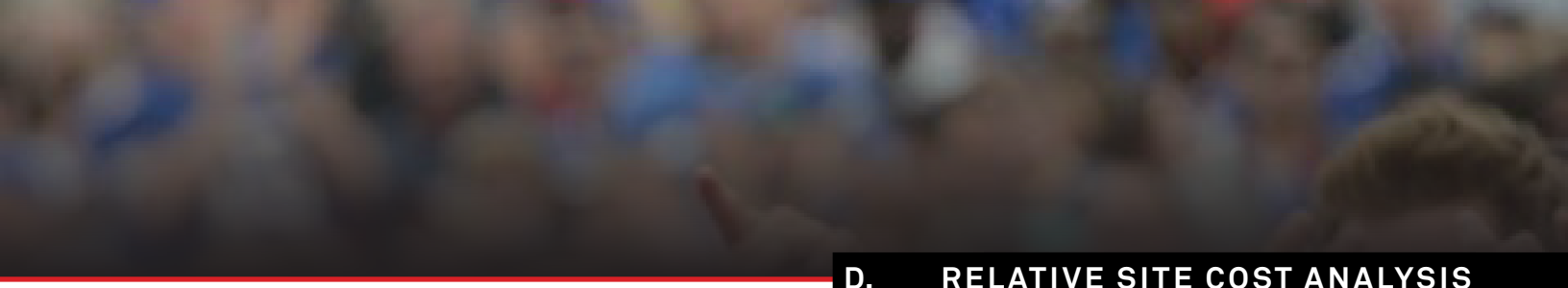
Summary

In summary, potential costs range by over $110M and depend greatly on the presence or not of a roof and the extent of site likely to be developed. Anticipated costs will also vary if the construction start date and duration are extended beyond that currently contemplated (June 2015 and 16 months respectively).

Site Option Summary

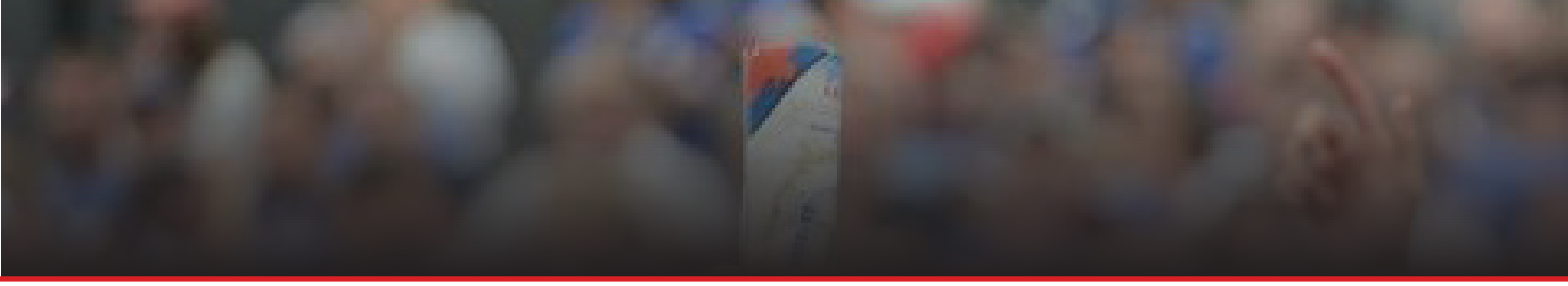
$ x 1,000

Description	Cobblestone District	Exchange Street	South Park Site	Orchard Park Site
Base Stadium & Site - Open Air Football No Roof	520,362	520,362	520,362	520,362
Premium for Dual Purpose Program	62,741	62,741	62,741	0
Premium for Fixed Roof	188,589	188,589	188,589	0
Additional Premium for Moveable Roof	0	0	62,815	0
Site Development - based on site size	8,906	5,949	70,385	28,081
FF & E allowance	7,000	7,000	7,000	6,500
	787,598	784,640	911,891	554,943



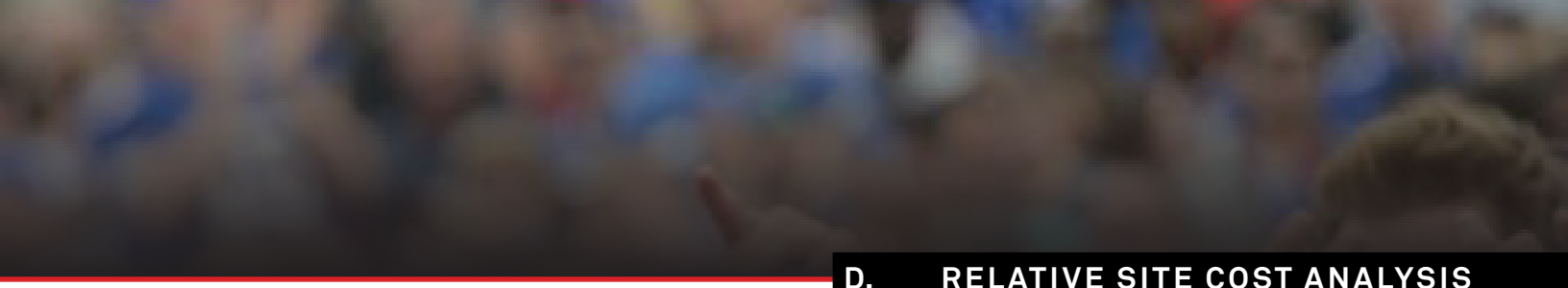
Overall Summary Baseline

			SF	$/SF	TOTAL
B1	Open Air Stadium		1,870,514	272.70	510,082
TOTAL BUILDING CONSTRUCTION			1,870,514	272.70	510,082
S1	Arena Related Site		745,478	13.79	10,280
TOTAL SITEWORK					10,280
TOTAL BUILDING AND SITEWORK					520,362
Z30	Escalation To Midpoint Included Above	0.00%			0
RECOMMENDED BUDGET					**520,362**



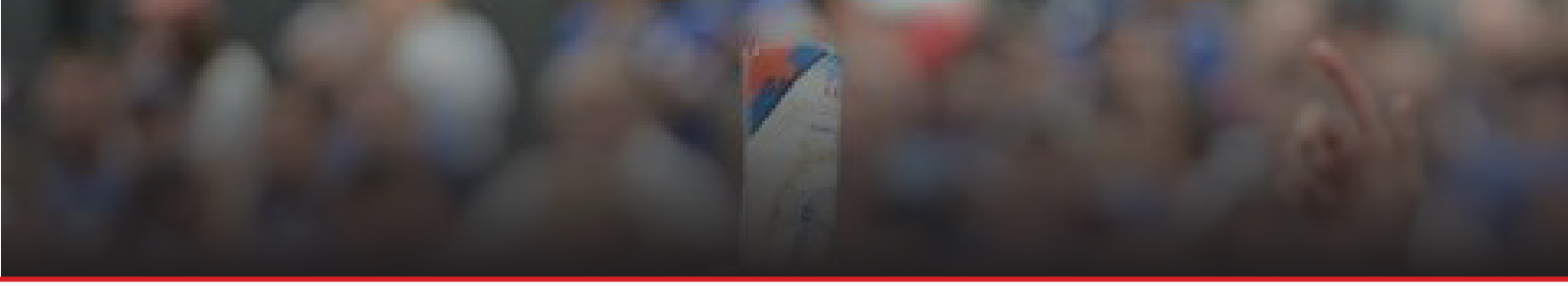
Open Air Stadium Areas & Control Quantities

	SF	SF
Areas		
Program Areas		
Enclosed	911,109	
Sheltered	375,000	
Field	132,000	
Seating	452,405	
Subtotal of Programmed Areas		1,870,514
Structured Areas		
On Grade	549,703	
Suspended	868,162	
Seating	452,649	
Subtotal of Structured Areas		-



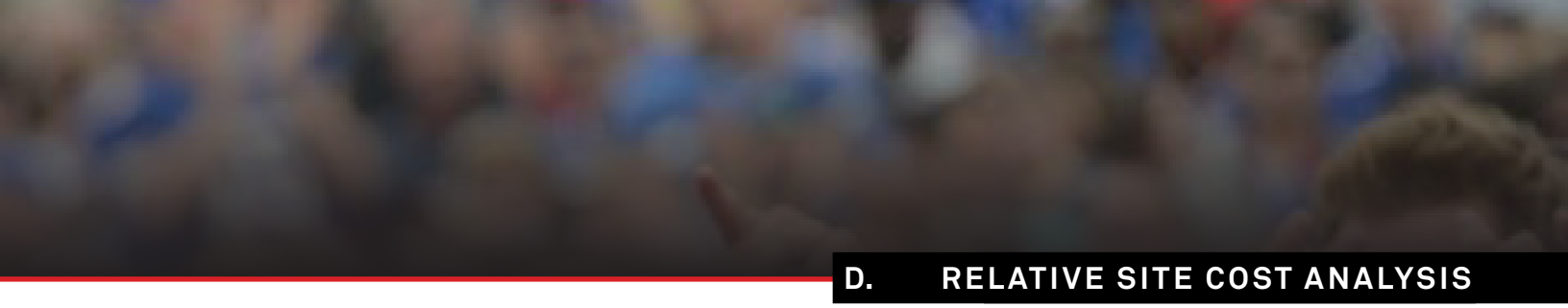
Subtotal of Structured Areas	-			
TOTAL GROSS FLOOR AREA	**1,870,514**	**Efficiency:**	**0%**	**2,900**

Control Quantities				Ratio to GFA
Functional Units		65,028	Seats	0.035
Number of Stories (x1,000)		5	EA	0.003
Gross Floor Area		1,870,514	SF	1.000
Enclosed Area		911,109	SF	0.487
Footprint Area		549,703	SF	0.294
Gross Wall Area		500,716	SF	0.268
Retaining Wall Area		0	SF	-
Finished Wall Area		500,716	SF	0.268
Windows or Glazing	13%	65,093	SF	0.035
Roof & Deck Area - Flat		555,635	SF	0.297
Roof Glazing Area		0	SF	-
Interior Partitions		58,738	LF	0.031
Finished Area		911,109	SF	0.487
Elevators (x10,000)		14	EA	0.075
Electrical Load		21,000	KW	0.011



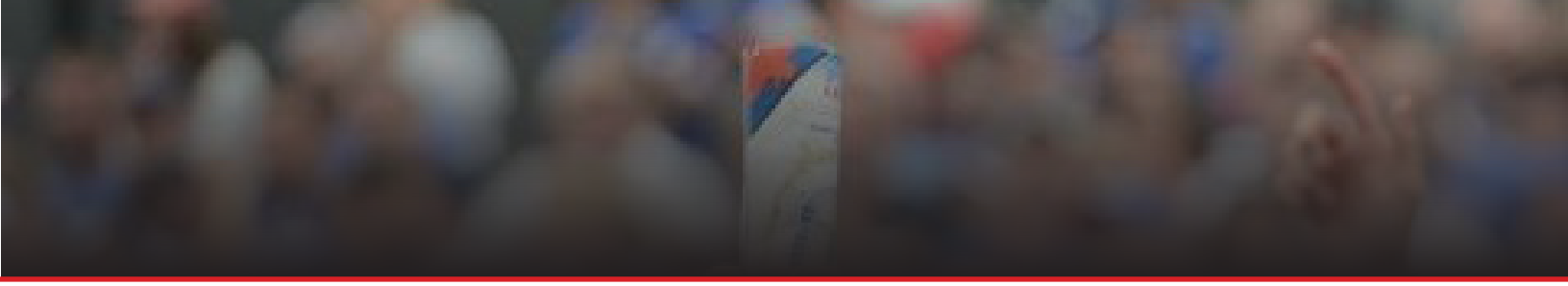
Open Air Stadium Summary

			%	$/SF	TOTAL
			Gross Area:	1,870,514 SF	
A10	Foundations		7%	19.72	36,896
A20	Basement Construction		0%	0.00	0
A	Substructure		7%	19.72	36,896
B10	Superstructure		16%	42.69	79,860
B20	Exterior Enclosure		5%	14.52	27,160
B30	Roofing		1%	2.96	5,545
B	Shell		22%	60.18	112,564
C10	Interior Construction		7%	19.72	36,893
C20	Stairways		0%	1.11	2,078
C30	Interior Finishes		7%	19.92	37,256
C	Interiors		15%	40.75	76,227
D10	Conveying Systems		2%	6.10	11,413
D20	Plumbing Systems		3%	7.94	14,860
D30	Heating, Ventilation & Air Conditioning		6%	16.66	31,160
D40	Fire Protection		1%	3.07	5,740
D50	Electrical Lighting, Power & Communications		11%	30.64	57,310
D	Services		24%	64.41	120,484
E10	Equipment		7%	17.84	33,374
E20	Furnishings		2%	5.92	11,075
E	Equipment & Furnishings		9%	23.76	44,448
F10	Special Construction		0%	1.33	2,480
F20	Selective Demolition		0%	0.00	0
F	Special Construction & Demolition		0%	1.33	2,480
BUILDING ELEMENTAL COST BEFORE CONTINGENCIES			77%	210.16	393,099
Z10	Design Contingency	10.00%	8%	21.02	39,310
BUILDING ELEMENTAL COST INCLUDING CONTINGENC			85%	231.17	432,409
Z21	Field Requirements	8.00%	7%	18.49	34,593
Z22	Office Overhead & Profit	4.00%	4%	9.99	18,680
BUILDING CONSTRUCTION COST BEFORE ESCALATION			95%	259.65	485,681
Z30	Escalation to Midpoint (Feb 2016)	5.02%	5%	13.04	24,400
RECOMMENDED BUDGET			100%	272.70	510,082

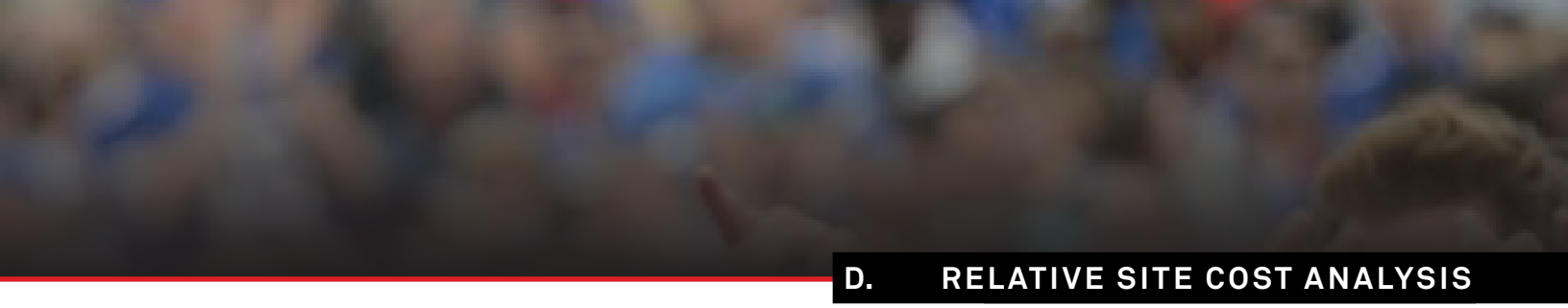


Open Air Stadium

	Quantity	Unit	Rate	Total
A10 Foundations				
A1010 Standard Foundations	**549,703**	SF	15.00	8,245,544
A1020 Special Foundations	**549,703**	SF	40.00	21,988,118
A1030 Slab On Grade	**549,703**	SF	11.55	6,662,026
Field slab - 6"	132,000	SF	9.04	1,193,280
Event level slab - 8"	417,703	SF	11.30	4,720,043
Extra over for ramped slabs	7,664	SF	5.65	43,302
Pads, trenches & curbs	1,870,514	SF	0.28	528,420
Perimeter drainage	7,831	LF	22.60	176,981
				36,895,689
A20 Basement Construction				
				0
B10 Superstructure				
B1010 Floor Construction	**1,320,811**	SF	58.41	77,154,702
Elevated floor construction - CIP concrete beams, girders & deck	868,162	SF	33.90	29,430,686
Extra over for topping slab at waterproofed decks	495,229	SF	5.65	2,798,044
Precast seating deck on CIP rakers	452,649	SF	73.45	33,247,054
CIP columns supporting floors	6,123	CY	960.50	5,881,322
Lids over single height spaces in double height volumes	95,036	SF	16.95	1,610,867
Steel framing & grating to catwalks	9,016	SF	50.85	458,469
Stair and elevator core walls	47,037	SF	45.20	2,126,072
Miscellaneous metals	1,417,865	SF	1.13	1,602,187
B1020 Roof Construction	**555,635**	SF	4.87	2,704,814
Steel framed roof with metal deck - lids	60,406	SF	22.60	1,365,176



Sub roofs under seating deck protecting interior finished spaces	47,421	SF	28.25	1,339,638
				79,859,516
B20 Exterior Enclosure				
B2010 Exterior Walls	**500,716**	SF	23.60	11,815,673
Damproofing and drainage panels to foundation walls	31,324	SF	5.65	176,981
CMU exterior walls	310,004	SF	16.95	5,254,565
Terracotta cladding	83,848	SF	45.20	3,789,941
Concourse railings - CMU interior face	16,985	SF	16.95	287,895
Catwalk railings	3,606	LF	169.50	611,292
Façade secondary steel	250	T	6,780.00	1,695,000
B2020 Exterior Windows	**89,258**	SF	123.11	10,988,529
Glass fin supported curtain walls	65,093	SF	146.90	9,562,176
Ticket windows	12	EA	5,085.00	61,020
Suite glazing	24,165	SF	56.50	1,365,333
B2030 Exterior Doors	**500,716**	SF	5.13	2,570,735
HM doors & frames	349	EA	1,695.00	590,811
Glazed aluminum entrance doors	133	EA	2,825.00	376,368
Bifold doors enclosing outdoor bars	2,782	SF	113.00	314,399
Rolling grilles enclosing concessions	10,450	SF	56.50	590,425
Insulated overhead coiling doors	3,323	SF	56.50	187,746
Wrought iron gates - large	12	EA	22,600.00	280,088
Wrought iron gates - large	14	EA	3,955.00	55,142
Sliding gates/fences at concourse level	781	SF	113.00	88,228
Door automation	1	LS	87,527.50	87,527
B2070 Exterior Louvers and Vents	**500,716**	SF	0.35	175,055
Allow for louvers	1	LS	175,055.00	175,055
B2080 Exterior Wall Appurtenances	**500,716**	SF	0.39	197,750
Entrance canopies	1	LS	169,500.00	169,500
Flagpoles	1	LS	28,250.00	28,250
B2090 Exterior Wall Specialties	**500,716**	SF	2.82	1,412,500
Allowance for video screen enclosure/structure	5,000	SF	282.50	1,412,500
				27,160,242

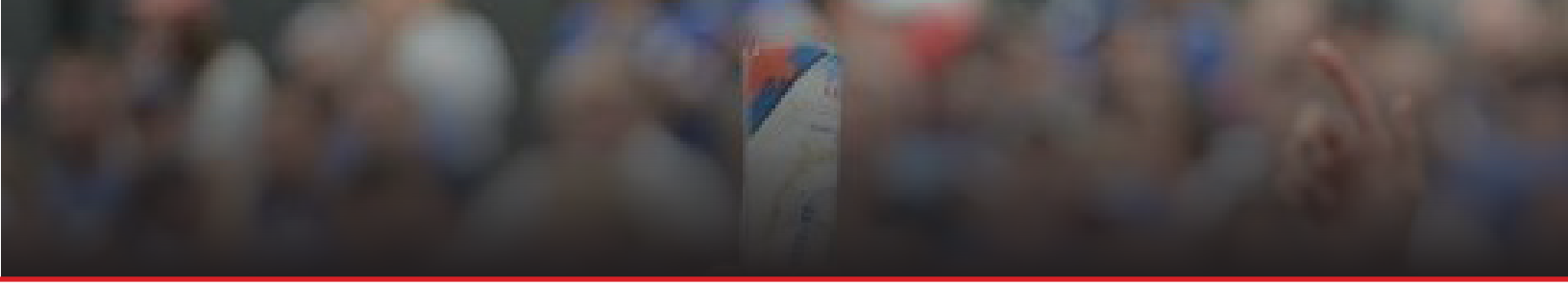


B30 Roofing

B3010 Roof Coverings	**555,635**	SF	9.90	5,500,752
Flat roofing on concourse amenity buildings	60,406	SF	16.95	1,023,882
Waterproofing to concourse split slabs - over occupied areas	495,229	SF	9.04	4,476,871
B3080 Overhead Exterior Enclosures	**25,851**	SF	1.70	43,817
Soffits - painted concrete	25,851	SF	1.70	43,817
				5,544,570

C10 Interior Construction

C1010 Partitions	**958,422**	SF	12.98	12,442,871
CMU partitions	285,434	SF	16.95	4,838,106
Drywall partitions	672,988	SF	11.30	7,604,764
C1020 Interior Doors	**958,422**	SF	2.10	2,014,225
Interior glazing	1	LS	452,000.00	452,000
HM doors & frames	600	EA	1,695.00	1,017,000
Glazed aluminum entrance doors	50	EA	2,825.00	141,250
Wood doors	108	EA	1,977.50	213,570
Overhead coiling grilles	3,370	SF	56.50	190,405
C1030 Fittings	**1,286,109**	SF	17.44	22,435,471
Seating railings	23,511	LF	169.50	3,985,123
Rough carpentry	1,286,109	SF	0.85	1,089,977
Firestopping	1,286,109	SF	0.28	363,326
Caulking and sealant to interiors	1,286,109	SF	0.28	363,326
Caulking and sealant to exterior walls	500,716	SF	0.28	141,452
Millwork allowances				
Suites	122	EA	11,300.00	1,378,600
Club - bars, fixed drinkrails and built in furnishings	1	LS	565,000.00	565,000
Premium Restrooms	11,448	SF	8.48	97,022
Showers and change rooms	39,774	SF	5.65	224,723
Other millwork	1	LS	452,000.00	452,000
Toilet accessories & partitions	1	LS	1,469,000.00	1,469,000



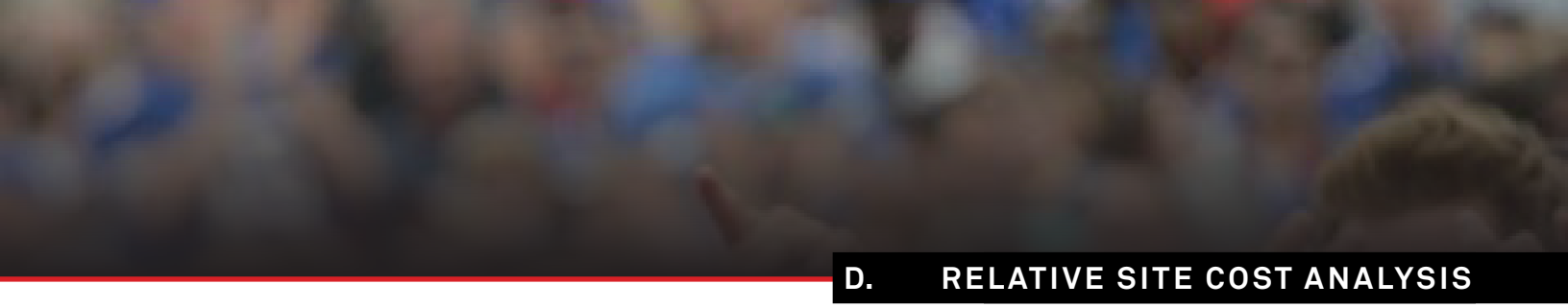
Stainless concession counters	2,090	LF	282.50	590,425
Code signage	1,870,514	SF	0.28	528,420
Graphics package	1,870,514	SF	2.83	5,284,201
Sponsorship package	1,870,514	SF	2.83	5,284,201
Lockers				
Players lockers - football	150	EA	2,825.00	423,750
Coaches lockers	40	EA	1,130.00	45,200
Aux lockers	70	EA	1,130.00	79,100
Employees locker, 3 tier per door	700	EA	84.75	59,325
Officials locker, 2 tier per door	20	EA	565.00	11,300
				36,892,566

C20 Stairways

C2010 Stair Construction	**1,286,109**	SF	1.62	2,078,070
Steel stairs per flight	48	EA	28,250.00	1,356,000
Short stair flights - voms	154	EA	3,955.00	609,070
Catwalk access - main roof	4	EA	28,250.00	113,000
C2020 Stair Finishes	**1,286,109**	SF		
Included below				
				2,078,070

C30 Interior Finishes

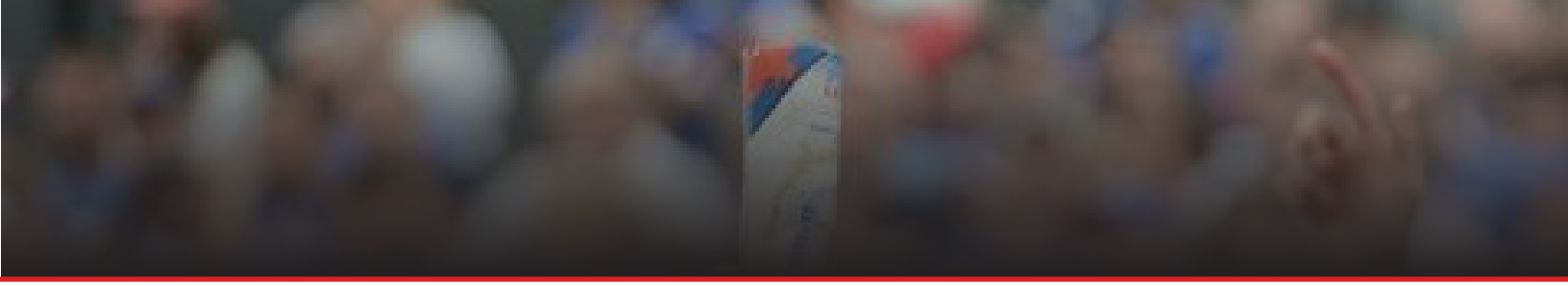
By program	**1,286,109**	SF	28.97	37,256,108
Service space	154,356	SF	5.65	872,111
Building support/BOH	66,600	SF	5.65	376,290
Security	2,820	SF	16.95	47,799
MEP	85,500	SF	5.65	483,075
Vault	96	SF	16.95	1,627
First aid	2,880	SF	16.95	48,816
Private toilets	3,948	SF	25.00	98,700
Public toilets	57,630	SF	8.48	488,414
Premium toilets	9,540	SF	45.20	431,208



Press workroom	5,640	SF	16.95	95,598
Press viewing/commentary	16,950	SF	16.95	287,303
Laundry	600	SF	28.25	16,950
Offices	10,290	SF	16.95	174,416
Circulation - premium	60,000	SF	22.60	1,356,000
Suites	71,280	SF	56.50	4,027,320
Concourse	320,400	SF	2.83	905,130
Event staff changing	3,540	SF	16.95	60,003
Lockers - dry - staff	10,176	SF	16.95	172,483
Lockers - dry - players	41,868	SF	56.50	2,365,542
Lockers - wet	12,030	SF	56.50	679,695
Warehouse/storage/shops	19,800	SF	5.65	111,870
Ticket sales	3,570	SF	16.95	60,512
Club	100,200	SF	141.25	14,153,250
VIP Lobby	1,200	SF	169.50	203,400
Kitchen/concession	67,650	SF	45.20	3,057,780
HOF	24,000	SF	113.00	2,712,000
Team store	23,400	SF	113.00	2,644,200
Stairs & ramps	94,320	SF	5.65	532,908
Elevators & escalators	15,845	SF		
Sealer to seating	452,405	SF	1.75	791,708
				37,256,108

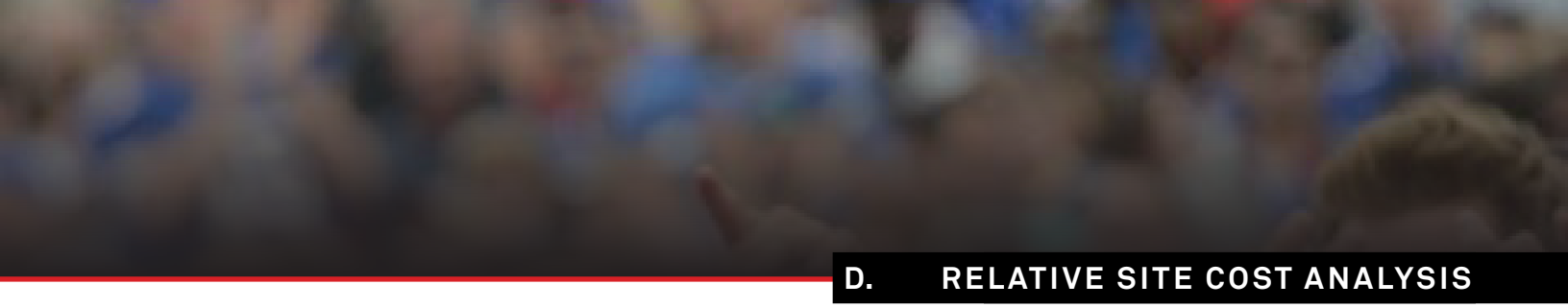
D10 Conveying Systems

D1010 Elevators & Lifts	**1,286,109**	SF	1.14	1,469,000
Passenger elevators	5	EA	226,000.00	1,130,000
Freight elevators	1	EA	339,000.00	339,000
D1020 Escalators & Moving Walks	**1,286,109**	SF	7.73	9,944,000
Escalators	44	EA	226,000.00	9,944,000
				11,413,000

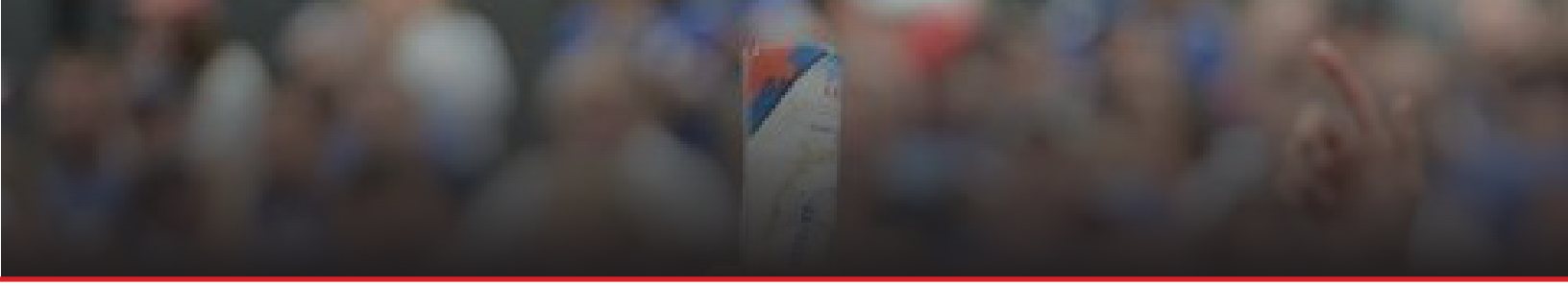


D20 Plumbing Systems

D2010 Plumbing Fixtures	**1,286,109**	SF	4.42	5,680,415
Service space	154,356	SF	0.57	87,211
Building support/BOH	66,600	SF	1.02	67,732
Security	2,820	SF	0.06	159
MEP	85,500	SF	1.13	96,615
Vault	96	SF	1.13	108
First aid	2,880	SF	7.91	22,781
Private toilets	3,948	SF	25.99	102,609
Public toilets	57,630	SF	21.47	1,237,316
Premium toilets	9,540	SF	25.99	247,945
Press workroom	5,640	SF	1.13	6,373
Press viewing/commentary	16,950	SF	1.02	17,238
Laundry	600	SF	2.83	1,695
Offices	10,290	SF	1.36	13,953
Circulation - premium	60,000	SF	1.02	61,020
Suites	71,280	SF	2.83	201,366
Concourse	320,400	SF	0.79	253,436
Event staff changing	3,540	SF	2.26	8,000
Lockers - dry - staff	10,176	SF	12.43	126,488
Lockers - dry - players	41,868	SF	12.43	520,419
Lockers - wet	12,030	SF	25.99	312,660
Warehouse/storage/shops	19,800	SF	0.45	8,950
Ticket sales	3,570	SF	0.17	605
Club	100,200	SF	9.04	905,808
VIP Lobby	1,200	SF	6.78	8,136
Kitchen/concession	67,650	SF	19.21	1,299,557
HOF	24,000	SF	1.13	27,120
Team store	23,400	SF	1.13	26,442
Stairs & ramps	94,320	SF	0.17	15,987
Elevators & escalators	15,845	SF	0.17	2,686
D2020 Domestic Water Distribution	**1,286,109**	SF	2.49	3,202,275
Service space	154,356	SF	0.57	87,211
Building support/BOH	66,600	SF	1.36	90,310
Security	2,820	SF	0.45	1,275
MEP	85,500	SF	1.75	149,753



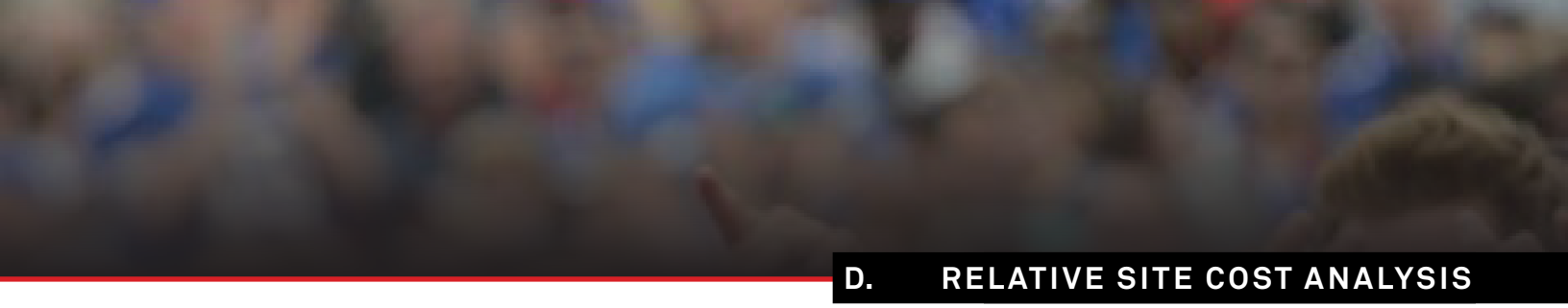
Vault	96	SF	0.45	43
First aid	2,880	SF	4.52	13,018
Private toilets	3,948	SF	7.91	31,229
Public toilets	57,630	SF	11.30	651,219
Premium toilets	9,540	SF	7.91	75,461
Press workroom	5,640	SF	1.70	9,560
Press viewing/commentary	16,950	SF	1.24	21,069
Laundry	600	SF	9.04	5,424
Offices	10,290	SF	1.81	18,604
Circulation - premium	60,000	SF	0.90	54,240
Suites	71,280	SF	2.83	201,366
Concourse	320,400	SF	0.68	217,231
Event staff changing	3,540	SF	1.13	4,000
Lockers - dry - staff	10,176	SF	0.68	6,899
Lockers - dry - players	41,868	SF	0.68	28,387
Lockers - wet	12,030	SF	4.07	48,938
Warehouse/storage/shops	19,800	SF	0.45	8,950
Ticket sales	3,570	SF	1.13	4,034
Club	100,200	SF	5.65	566,130
VIP Lobby	1,200	SF	2.26	2,712
Kitchen/concession	67,650	SF	12.43	840,890
HOF	24,000	SF	0.68	16,272
Team store	23,400	SF	0.68	15,865
Stairs	94,320	SF	0.06	5,329
Elevators	15,845	SF	1.70	26,857
D2030 Sanitary Waste	**1,286,109**	SF	3.03	3,894,554
Service space	154,356	SF	0.68	104,653
Building support/BOH	66,600	SF	1.58	105,361
Security	2,820	SF	0.11	319
MEP	85,500	SF	2.26	193,230
Vault	96	SF	1.58	152
First aid	2,880	SF	5.20	14,970
Private toilets	3,948	SF	9.04	35,690
Public toilets	57,630	SF	12.43	716,341
Premium toilets	9,540	SF	9.04	86,242
Press workroom	5,640	SF	1.81	10,197
Press viewing/commentary	16,950	SF	1.36	22,984



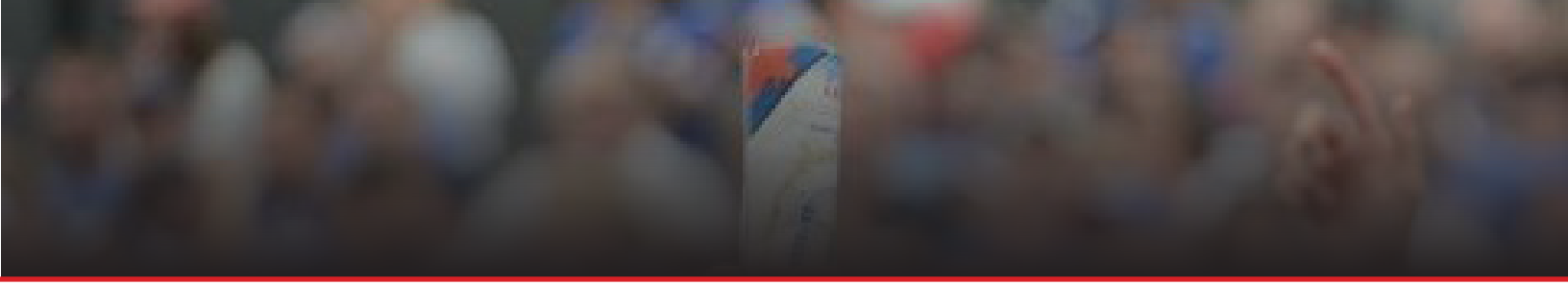
Laundry	600	SF	3.39	2,034
Offices	10,290	SF	1.92	19,767
Circulation - premium	60,000	SF	1.02	61,020
Suites	71,280	SF	2.83	201,366
Concourse	320,400	SF	0.79	253,436
Event staff changing	3,540	SF	1.24	4,400
Lockers - dry - staff	10,176	SF	4.07	41,396
Lockers - dry - players	41,868	SF	4.07	170,319
Lockers - wet areas	12,030	SF	4.07	48,938
Warehouse/storage/shops	19,800	SF	0.68	13,424
Ticket sales	3,570	SF	0.11	403
Club	100,200	SF	6.78	679,356
VIP Lobby	1,200	SF	2.83	3,390
Kitchen/concession	67,650	SF	13.56	917,334
HOF	24,000	SF	0.68	16,272
Team store	23,400	SF	0.79	18,509
Stairs	94,320	SF	1.24	117,240
Elevators	15,845	SF	2.26	35,809
D2040 Rain Water Drainage	**1,008,040**	SF	1.64	1,653,478
Roof drainage	555,635	SF	2.01	1,117,604
Seating drainage	452,405	SF	1.18	535,873
D2090 Other Plumbing Systems	**1,870,514**	SF	0.23	429,400
Water treatment & storage	1	LS	282,500.00	282,500
Water pumping & circulation	1	LS	146,900.00	146,900
				14,860,123

D30 Heating, Ventilation & Air Conditioning

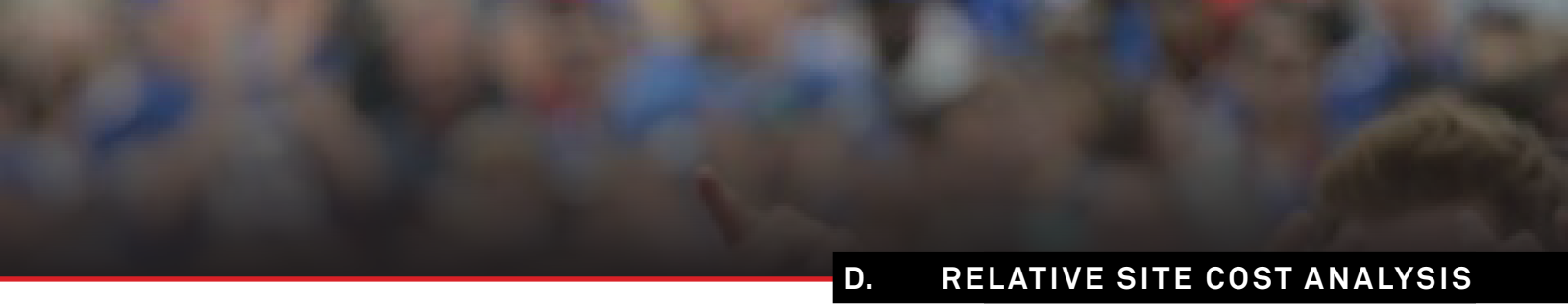
D3010 Energy Supply	**911,109**	SF	1.29	1,175,200
Natural gas systems	1	LS	429,400.00	429,400
Generator fuel storage & first fill	1	LS	745,800.00	745,800
D3020 Heat Generating Systems	**911,109**	SF	1.49	1,356,000
High efficiency boilers & ancillaries	1	LS	1,084,800.00	1,084,800
Misc. resistance heat	1	LS	271,200.00	271,200



D3030 Cooling Generating Systems	**911,109**	SF	3.29	2,994,500
Air-cooler chillers & ancillaries	1	LS	2,305,200.00	2,305,200
Food service refrigeration	1	LS	565,000.00	565,000
Misc. heat pumps & compressors	1	LS	124,300.00	124,300
D3040 Distribution Systems	**911,109**	SF	12.30	11,208,074
Hydronic Distribution Systems				
Service space	154,356	SF	1.58	244,191
Building support/BOH	66,600	SF	1.70	112,887
Security	2,820	SF	1.36	3,824
Vault	85,500	SF	4.52	386,460
MEP	96	SF	4.52	434
First aid	2,880	SF	3.96	11,390
Private toilets	3,948	SF	4.41	17,399
Public toilets	57,630	SF	3.96	227,927
Premium toilets	9,540	SF	4.41	42,043
Press workroom	5,640	SF	3.96	22,306
Press viewing/commentary	16,950	SF	3.96	67,037
Laundry	600	SF	1.70	1,017
Offices	10,290	SF	3.84	39,534
Circulation - premium	60,000	SF	1.81	108,480
Suites	71,280	SF	4.52	322,186
Concourse	320,400	SF	0.68	217,231
Event staff changing	3,540	SF	3.39	12,001
Lockers - dry - staff	10,176	SF	3.39	34,497
Lockers - dry - players	41,868	SF	3.39	141,933
Lockers - wet areas	12,030	SF	4.07	48,938
Warehouse/storage/shops	19,800	SF	1.13	22,374
Ticket sales	3,570	SF	1.24	4,438
Club	100,200	SF	4.07	407,614
VIP Lobby	1,200	SF	3.96	4,746
Kitchen/concession	67,650	SF	4.52	305,778
HOF	24,000	SF	3.39	81,360
Team store	23,400	SF	4.52	105,768
Stairs	94,320	SF	1.02	95,923
Elevators	15,845	SF	0.20	3,223
Air-side distribution systems				
Service space	154,356	SF	3.39	523,267



Building support/BOH	66,600	SF	4.52	301,032
Security	2,820	SF	4.52	12,746
MEP	85,500	SF	6.78	579,690
First aid	96	SF	7.91	759
Private toilets	2,880	SF	9.04	26,035
Public toilets	3,948	SF	9.04	35,690
Premium toilets	57,630	SF	9.04	520,975
Press workroom	9,540	SF	5.65	53,901
Press viewing/commentary	5,640	SF	5.65	31,866
Laundry	16,950	SF	10.17	172,382
Offices	600	SF	7.91	4,746
Circulation - premium	10,290	SF	2.26	23,255
Suites	60,000	SF	9.04	542,400
Concourse	71,280	SF	1.13	80,546
Event staff changing	320,400	SF	6.78	2,172,312
Lockers - dry - staff	3,540	SF	6.78	24,001
Lockers - dry - players	10,176	SF	6.78	68,993
Lockers - wet areas	41,868	SF	4.07	170,319
Warehouse/storage/shops	12,030	SF	2.26	27,188
Ticket sales	19,800	SF	9.04	178,992
Club	3,570	SF	9.04	32,273
VIP Lobby	100,200	SF	9.04	905,808
Kitchen/concession	1,200	SF	10.17	12,204
Bar - self contained	67,650	SF	10.17	688,001
HOF	24,000	SF	7.91	189,840
Team store	23,400	SF	9.04	211,536
Stairs	94,320	SF	5.09	479,617
Elevators	15,845	SF	2.83	44,762
D3050 Terminal & Package Units	**911,109**	SF	6.43	5,857,920
Air handling units & other terminal units	576,000	CFM	10.17	5,857,920
D3060 Controls and Instrumentation	**911,109**	SF	7.06	6,434,707
DDC controls	911,109	SF	7.06	6,434,707
D3070 Systems Testing & Balancing	**911,109**	SF	0.73	669,210
Test & Balance	911,109	SF	0.73	669,210
D3090 Other HVAC Systems & Equipment	**911,109**	SF	1.61	1,464,480
Exhaust systems	576,000	CFM	2.54	1,464,480
				31,160,091

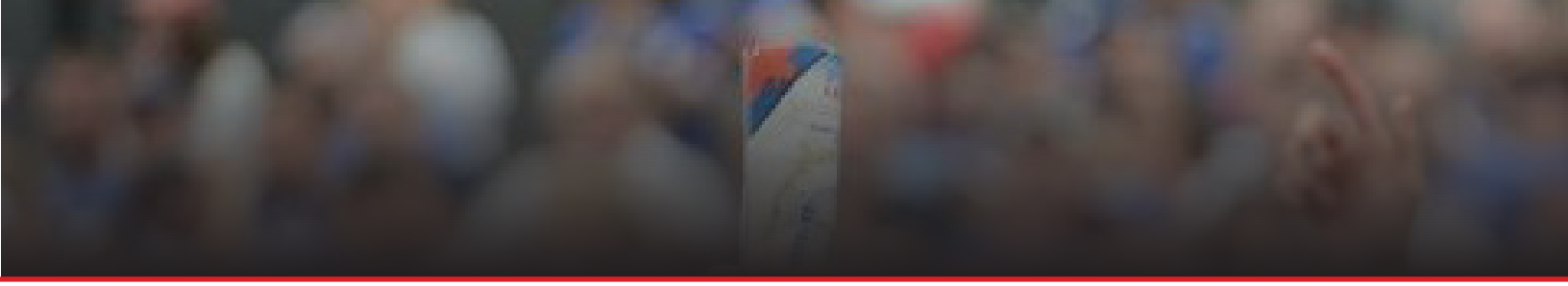


D40 Fire Protection

D4010 Sprinklers	**1,286,109**	SF	4.46	5,740,225
Enclosed areas	911,109	SF	4.62	4,208,298
Covered areas requiring protection	375,000	SF	2.77	1,039,247
Special fire protection systems	1	LS	492,680.00	492,680
				5,740,225

D50 Electrical Lighting, Power & Communications

D5010 Electrical Service & Distribution	**1,870,514**	SF	7.19	13,446,192
Main switchgear, transformers, & distribution panel boards	21,000	KW	342.50	7,192,563
Feeders	1	LS	565,000.00	565,000
Equipment power: HVAC , Plumbing	911,109	SF	3.39	3,088,659
Equipment power: concession , food service	67,650	SF	16.95	1,146,668
Convenience power	1,286,109	SF	1.13	1,453,303
D5020 Lighting & Branch Wiring	**1,870,514**	SF	9.88	18,472,332
Lighting for enclosed areas	911,109	SF	12.43	11,325,082
Lighting for non-enclosed areas	375,000	SF	6.78	2,542,500
Facade lighting	1	LS	1,440,750.00	1,440,750
Event lighting	1	LS	2,034,000.00	2,034,000
Lighting controls	1	LS	1,130,000.00	1,130,000
D5030 Communications & Security	**1,870,514**	SF	5.09	9,520,250
Security systems inc. cameras, card readers, control	1	LS	3,051,000.00	3,051,000
Fire alarm system: complete	1	LS	2,260,000.00	2,260,000
Voice / data systems	1	LS	3,305,250.00	3,305,250
Special systems: broadcasting connections	1	LS	904,000.00	904,000
D5090 Other Electrical Systems	**1,870,514**	SF	8.49	15,871,415
Lightning protection and grounding	1	LS	960,500.00	960,500
Sound system	1	LS	3,390,000.00	3,390,000
Broadcast cable	1	LS	2,260,000.00	2,260,000
Distributed TV	1	LS	2,034,000.00	2,034,000
Audio visual pathway & display systems	1	LS	3,579,840.00	3,579,840
Scoreboard & event display: power & pathway only	1	LS	655,400.00	655,400
Emergency power generation	6,000	KVA	468.95	2,813,700
Start-up & commission	1,750	HR	101.70	177,975
				57,310,190

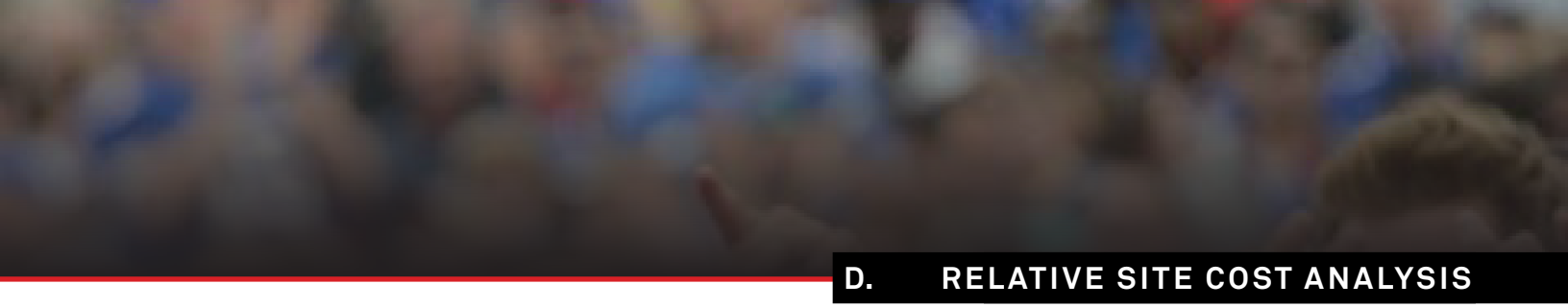


E10 Equipment

E1010 Commercial Equipment	**1,286,109**	SF	10.64	13,684,752
Dock bumpers	9	EA	2,825.00	25,425
Concession equipment	67,650	SF	169.50	11,466,675
Bar equipment				
Concourse public bars	12	EA	11,300.00	135,600
Club	1	LS	169,500.00	169,500
Beer distribution	1	LS	565,000.00	565,000
POS system	418	EA	3,164.00	1,322,552
E1090 Other Equipment	**1,286,109**	SF	15.31	19,688,950
Suite equipment	122	EA	2,825.00	344,650
Scoreboards	5,000	SF	900.00	4,500,000
Ribbon boards	8,334	SF	900.00	7,500,600
Media mesh allowance	7,500	SF	847.50	6,356,250
Moveable partitions	1	LS	250,000.00	250,000
Hydrotherapy equipment	1	LS	250,000.00	250,000
Steam/Sauna equipment	1	LS	75,000.00	75,000
Monitor mounts, allow	700	EA	508.50	355,950
Window shades/blinds	1	LS	56,500.00	56,500
				33,373,702

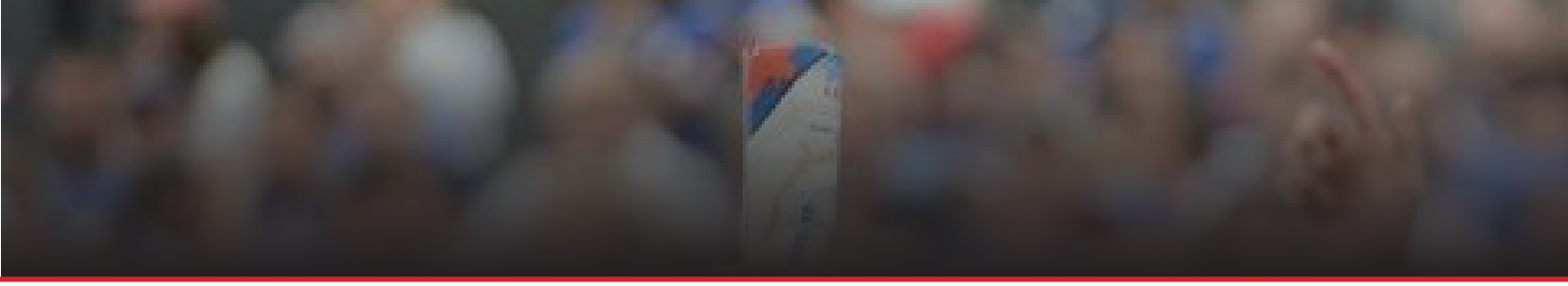
E20 Furnishings

E2010 Fixed Furnishings	**1,286,109**	SF	8.61	11,074,723
Stadium seating				
General seating	55,600	EA	152.55	8,481,780
Suite, premium seating	1,600	EA	265.55	424,880
Club, Loge premium seating	7,500	EA	265.55	1,991,625
ADA Companion seating	164	EA	265.55	43,550
ADA Spaces	164	EA		
Fire extinguisher cabinets, recessed	128	EA	508.50	65,088
Floor mats and frames	1	LS	56,500.00	56,500
Whiteboard and tack boards, allow	1	LS	11,300.00	11,300
				11,074,723



F10 Special Construction

F1030 Special Construction Systems	**132,000**	SF	18.79	2,480,000
Field construction & equipment	132,000	SF	15.00	1,980,000
Aeration system	1	LS	500,000.00	500,000
				2,480,000

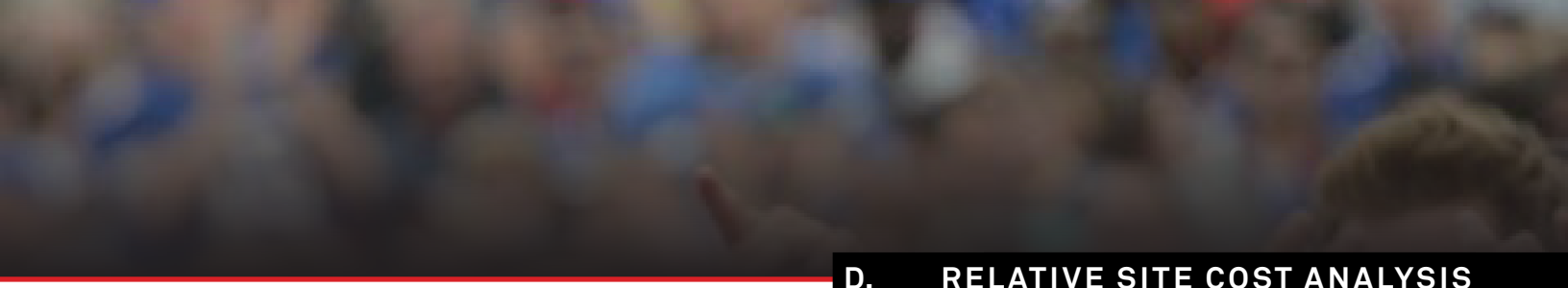


Basic Site Areas & Control Quantities

	SF	SF	SF
Areas			
Basic Site Areas			
Building Footprint Area	549,703		
25 Feet Building Perimeter Apron	195,775		
Subtotal of Building Footprint Areas		745,478	
TOTAL SITE AREA			**745,478**

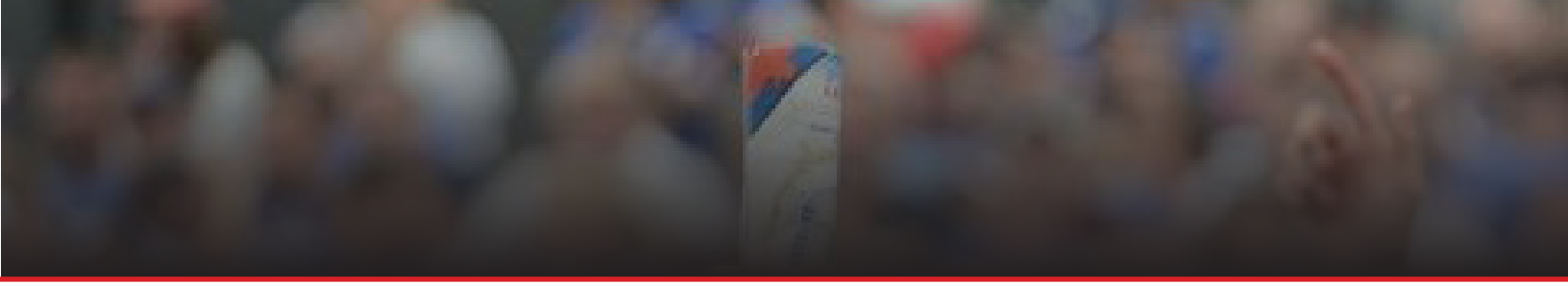
Basic Site Summary

			%	$/SF	TOTAL
			Gross Area:	745,478 SF	
G10	Site Preparation		18%	2.49	1,853
G20	Site Improvements		38%	5.21	3,883
G30	Site Mechanical Utilities		11%	1.57	1,170
G40	Site Electrical Utilities		10%	1.36	1,017
G90	Other Site Construction		0%	0.00	0
G	Building Sitework		77%	10.63	7,923
SITE ELEMENTAL COST BEFORE CONTINGENCIES			77%	10.63	7,923
Z10	Contingency	10.00%	8%	1.06	792
Z11	Other 1	0.00%	0%	0.00	0
Z12	Other 2	0.00%	0%	0.00	0
SITE ELEMENTAL COST INCLUDING CONTINGENCIES			85%	11.69	8,715
Z21	Field Requirements	8.00%	7%	0.94	697
Z22	Office Overhead & Profit	4.00%	4%	0.51	376
Z23	Other 1	0.00%	0%	0.00	0
Z24	Other 2	0.00%	0%	0.00	0
SITE CONSTRUCTION COST BEFORE ESCALATION			95%	13.13	9,789
Z30	Escalation to Midpoint (Feb 2016)	5.02%	5%	0.66	492
RECOMMENDED BUDGET			100%	13.79	10,280



Basic Site

Item Description	Quantity	Unit	Rate	Total
G10 Site Preparation				
G1010 Site Clearing	**745,478**	SF	1.50	1,118,217
Allow	745,478	SF	1.50	1,118,217
G1020 Site Demolition and Relocations	**745,478**	SF	0.76	565,000
Demolition of existing buildings	1	LS	565,000.00	565,000
G1030 Site Earthwork	**745,478**	SF	0.23	169,500
Dewatering based on duration of in-ground activities	6	MOS	28,250.00	169,500
G1040 Hazardous Waste Remediation	**745,478**	SF		
Excluded				
				1,852,717
G20 Site Improvements				
G2040 Site Development	**195,775**	SF	16.95	3,318,386
Hardscape	195,775	SF	16.95	3,318,386
G2050 Landscaping	**195,775**	SF	2.89	565,000
Allow	1	LS	565,000.00	565,000
				3,883,386
G30 Site Mechanical Utilities				
G3010 Water Supply	**195,775**	SF	0.92	180,800
Domestic and fire water mains	500	LF	214.70	107,350
Domestic and fire water structures	1	LS	73,450.00	73,450
G3020 Sanitary Sewer	**195,775**	SF	2.83	553,700
Sanitary sewer mains	500	LF	214.70	107,350
Sanitary sewer structures	1	LS	50,850.00	50,850
Lift stations	1	LS	395,500.00	395,500



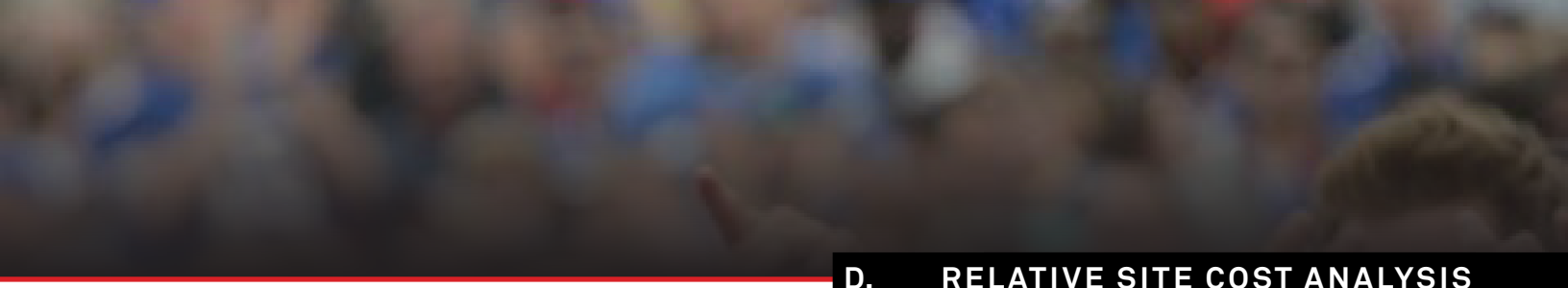
G3030 Storm Sewer	**195,775**	SF	1.15	226,000
Storm drain piping	2,000	LF	67.80	135,600
Storm drain structures	1	LS	90,400.00	90,400
G3050 Cooling Distribution	**195,775**	SF	0.62	122,040
Chilled water piping	600	LF	203.40	122,040
G3060 Fuel Distribution	**195,775**	SF	0.44	87,010
Natural gas piping	200	LF	124.30	24,860
Service entrance and metering	1	LS	62,150.00	62,150
				1,169,550

G40 Site Electrical Utilities

G4010 Electrical Distribution	**195,775**	SF	1.82	355,950
Duct banks	1,000	LF	310.75	310,750
Misc feeders	500	LF	90.40	45,200
G4020 Site Lighting	**195,775**	SF	2.89	565,000
Circulation lighting	1	LS	565,000.00	565,000
G4030 Site Communications & Security	**195,775**	SF	0.49	96,050
Voice & data feed inc. room for spare	500	LF	124.30	62,150
Voice & data structures	1	LS	33,900.00	33,900
				1,017,000

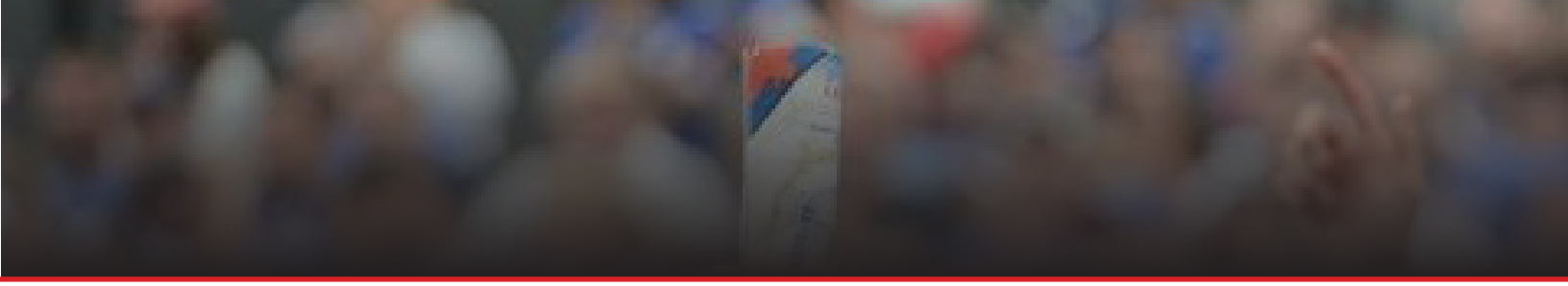
G90 Other Site Construction

				0



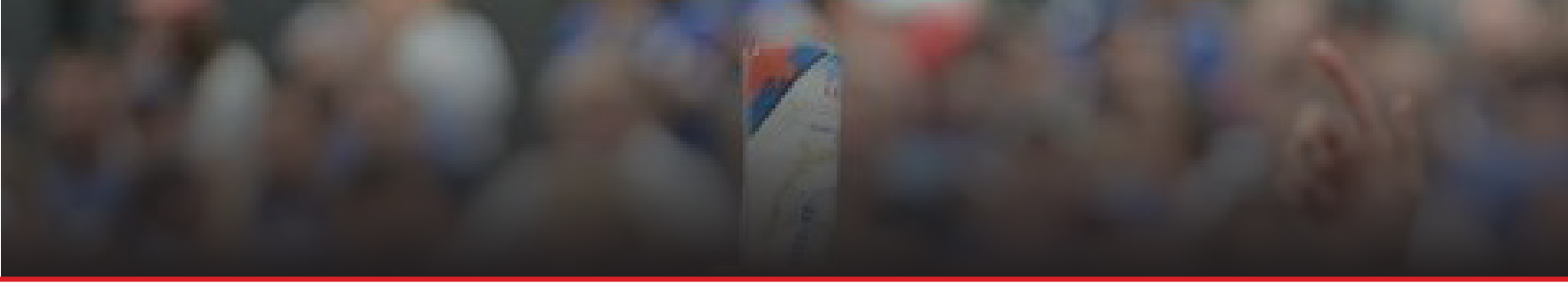
Premium for Dual Purpose Facility

Item Description	Quantity	Unit	Rate	Total
Additional Program and Trade Show Provision for Field				
A1010 Standard Foundations	**60,240**	SF	15.00	903,600
A1020 Special Foundations	**60,240**	SF	40.00	2,409,600
A1030 Slab On Grade	**60,240**	SF	11.55	2,276,280
Expanded field slab slab	40,000	SF	9.04	361,600
Thickened field slab	150,000	SF	8.00	1,200,000
Additional event level slab	60,240	SF	11.30	680,712
Pads, trenches & curbs	60,240	SF	0.28	17,018
Perimeter drainage	750	LF	22.60	16,950
B1010 Floor Construction	**79,119**	SF	11.55	3,191,912
Elevated floor construction - CIP concrete beams, girders & deck	79,119	SF	33.90	2,682,134
CIP columns supporting floors	367	CY	960.50	352,302
Miscellaneous metals	139,359	SF	1.13	157,476
B2010 Exterior Walls	**60,000**	SF	23.60	1,415,853
B2020 Exterior Windows	**10,696**	SF	123.11	1,316,778
B2030 Exterior Doors	**60,000**	SF	5.13	308,047
C1010 Partitions	**71,405**	SF	12.98	927,032
C1020 Interior Doors	**71,405**	SF	2.10	150,066
C1030 Fittings	**139,359**	SF	7.47	1,040,542
Rough carpentry	139,359	SF	0.85	118,107
Firestopping	139,359	SF	0.28	39,369
Caulking and sealant to interiors	139,359	SF	0.28	39,369
Caulking and sealant to exterior walls	60,000	SF	0.28	16,950
Code signage	139,359	SF	0.28	39,369
Graphics package	139,359	SF	2.83	393,689
Sponsorship package	139,359	SF	2.83	393,689
C3010 Finishes by program	**139,359**	SF	24.31	3,387,136
Prefunction	30,000	SF	50.00	1,500,000
Meeting rooms	23,040	SF	50.00	1,152,000
Corridor	3,600	SF	10.00	36,000
Meeting room satellite kitchen	3,600	SF	45.20	162,720
Bowl MEP	120,000	SF	5.65	678,000
Concourse	(31,700)	SF	2.83	(89,711)



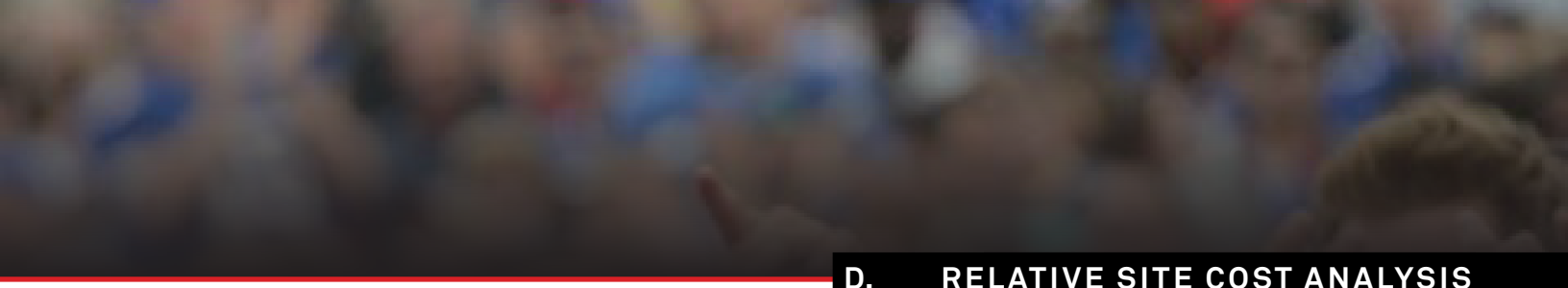
Vertical circulation	(9,181)	SF	5.65	(51,873)
D2010 Plumbing Fixtures	**139,359**	SF	4.42	615,513
D2020 Domestic Water Distribution	**139,359**	SF	2.49	346,989
D2030 Sanitary Waste	**139,359**	SF	3.03	422,003
D3010 Energy Supply	**139,359**	SF	1.29	179,753
D3020 Heat Generating Systems	**139,359**	SF	1.49	207,408
D3030 Cooling Generating Systems	**139,359**	SF	3.29	458,025
D3040 Distribution Systems	**139,359**	SF	12.30	1,714,335
D3050 Terminal & Package Units	**139,359**	SF	6.43	896,000
D3060 Controls and Instrumentation	**139,359**	SF	7.06	984,223
D3070 Systems Testing & Balancing	**139,359**	SF	0.73	102,359
D4010 Sprinklers	**609,943**	SF	4.62	2,817,250
Enclosed areas	609,943	SF	4.62	2,817,250
D5010 Electrical Service & Distribution	**609,943**	SF	7.19	4,384,577
D5020 Lighting & Branch Wiring	**609,943**	SF	9.88	6,023,517
D5030 Communications & Security	**609,943**	SF	5.09	3,104,393
E1090 Other Equipment	**139,359**	SF	5.51	768,519
Moveable partitions	1	LS	250,000.00	250,000
Electrical & data outlets at field level - 30' grid	167	EA	2,000.00	333,333
Water & air outlets at field level - 90' grid	19	EA	10,000.00	185,185
E2010 Fixed Furnishings	**139,359**	SF	57.41	8,000,400
Stadium seating				
General seating - retractable	8,889	EA	900.00	8,000,400
Alternate Cost Before Markups				**48,352,110**
Z10 Contingency	10.00%			4,835,211
Z21 Field Requirements	8.00%			4,254,986
Z22 Office Overhead & Profit	4.00%			2,297,692
Z30 Escalation to Midpoint (Feb 2016)	5.02%			3,001,315
				62,741,313

D. RELATIVE SITE COST ANALYSIS



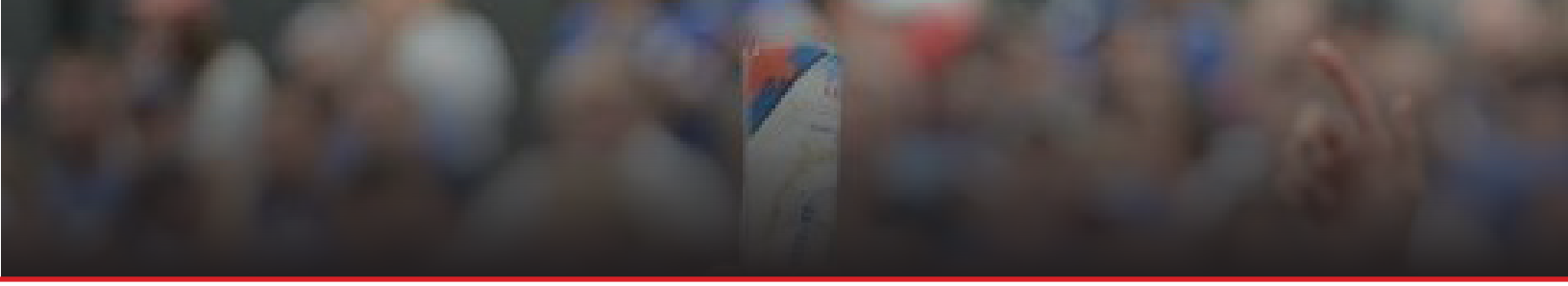
Fixed Roof

Item Description	Quantity	Unit	Rate	Total
Cost Premium for Fixed Roof				
B1020 Roof Construction	**609,943**	SF	131.69	80,323,262
Main static roof structure	14,217	T	5,650.00	80,323,262
B3010 Roof Coverings	**609,943**	SF	62.15	37,907,957
Main roof covering - pillows of ETFE	609,943	SF	62.15	37,907,957
B3020 Roof Openings	**609,943**	SF	1.44	879,257
Main roof gutters	3,417	LF	169.50	579,257
Roof fall protection system	1	LS	150,000.00	150,000
Bird deterrents	1	LS	150,000.00	150,000
D2040 Rain Water Drainage	**609,943**	SF	4.06	2,476,839
Roof drainage	609,943	SF	2.01	1,226,839
Plumbing for enclosed bowl	1	LS	1,250,000.00	1,250,000
D3090 Other HVAC Systems & Equipment	**609,943**	SF	1.61	15,000,000
HVAC for enclosed bowl	1	LS	15,000,000	15,000,000
D4010 Sprinklers	**609,943**	SF	2.05	1,250,000
Sprinklers for enclosed bowl	1	LS	1,250,000.00	1,250,000
D5090 Other Electrical Systems	**609,943**	SF	8.49	7,500,000
Electrical for enclosed bowl	1	LS	7,500,000.00	7,500,000
Alternate Cost Before Markups				**145,337,316**
Z10 Contingency	10.00%			14,533,732
Z21 Field Requirements	8.00%			12,789,684
Z22 Office Overhead & Profit	4.00%			6,906,429
Z30 Escalation to Midpoint (Feb 2016)	5.02%			9,021,386
				188,588,546



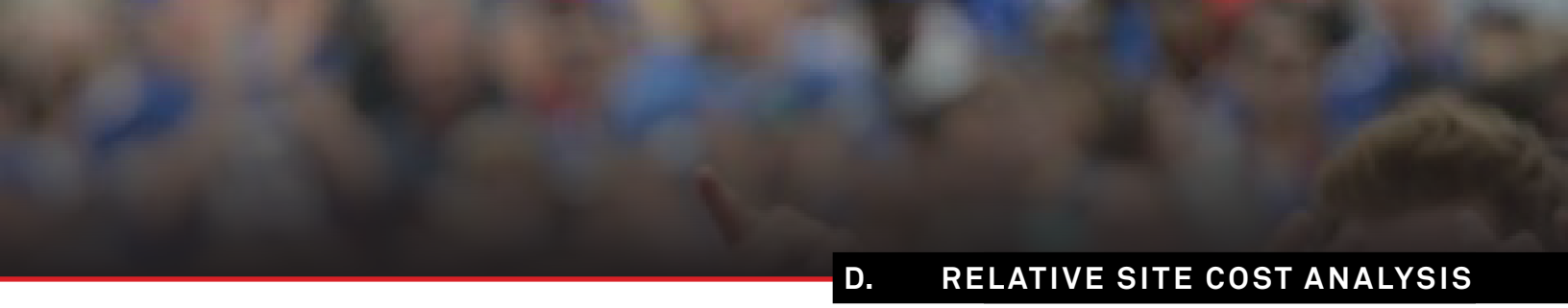
Movable Roof

Item Description	Quantity	Unit	Rate	Total
Cost Premium for Movable Roof				
B1020 Roof Construction	**609,943**	SF	54.77	33,408,790
Main static roof structure - increased steel complexity	14,217	T	2,350.00	33,408,790
B3010 Roof Coverings	**609,943**	SF		
Main roof covering - as fixed version				
F1030 Special Construction Systems	**609,943**	SF	24.59	15,000,000
Roof Operation	1	LS	15,000,000.00	15,000,000
Alternate Cost Before Markups				**48,408,790**
Z10 Contingency	10.00%			4,840,879
Z21 Field Requirements	8.00%			4,259,974
Z22 Office Overhead & Profit	4.00%			2,300,386
Z30 Escalation to Midpoint (Feb 2016)	5.02%			3,004,833
				62,814,862



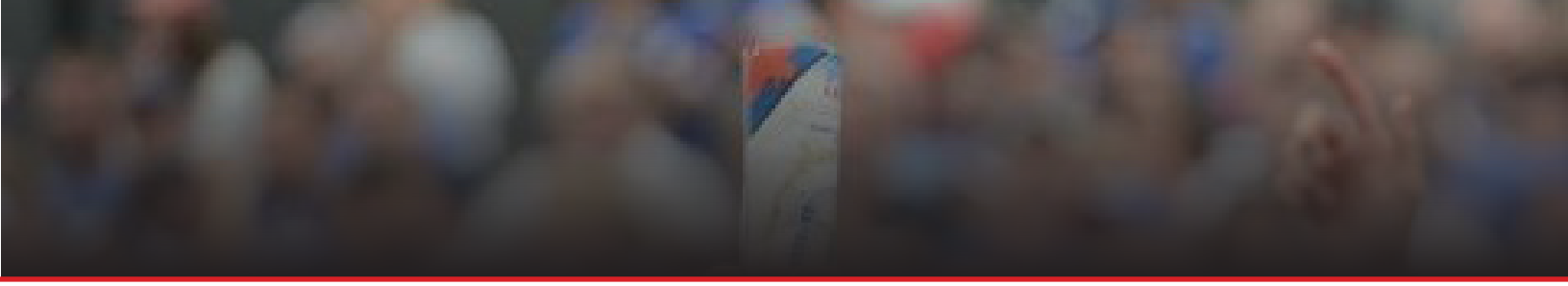
Costs Affected by Site Size

Item Description	Quantity	Unit	Rate	Total
COBBLESTONE SITE - 1,018,000sf total, 272,522sf net of building & apron				
G1010 Site Clearing	**1,018,000**	SF	0.40	408,783
Allow	272,522	SF	1.50	408,783
G1020 Site Demolition and Relocations	**1,018,000**	SF	0.23	231,464
Demolition of existing buildings	1	LS	231,463.58	231,464
G1040 Hazardous Waste Remediation	**1,018,000**	SF		
Excluded				
G2040 Site Development	**272,522**	SF	16.95	4,619,248
Hardscape	272,522	SF	16.95	4,619,248
G2050 Landscaping	**272,522**	SF	2.89	786,489
Allow	1	LS	786,489.24	786,489
G3030 Storm Sewer	**272,522**	SF	1.50	408,783
Storm drain piping	272,522	SF	1.50	408,783
G4020 Site Lighting	**272,522**	SF	1.50	408,783
Circulation lighting	272,522	SF	1.50	408,783
Alternate Cost Before Markups				**6,863,550**
Z10 Contingency	10.00%			686,355
Z21 Field Requirements	8.00%			603,992
Z22 Office Overhead & Profit	4.00%			326,156
Z30 Escalation to Midpoint (Feb 2016)	5.02%			426,035
				8,906,088



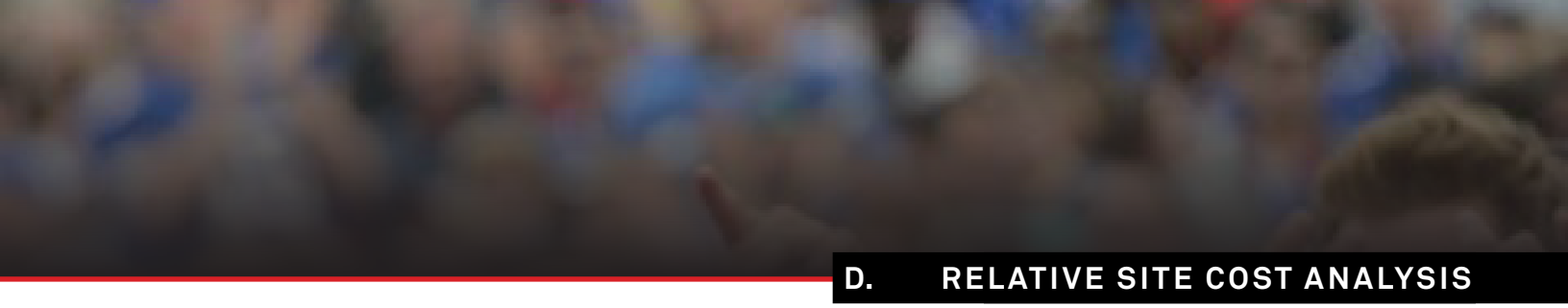
EXCHANGE STREET SITE - 182,022sf net of building & apron

G1010 Site Clearing	**927,500**	SF	0.29	273,033
Allow	182,022	SF	1.50	273,033
G1020 Site Demolition and Relocations	**927,500**	SF	0.17	154,598
Demolition of existing buildings	1	LS	154,598.40	154,598
G1040 Hazardous Waste Remediation	**927,500**	SF		
Excluded				
G2040 Site Development	**182,022**	SF	16.95	3,085,273
Hardscape	182,022	SF	16.95	3,085,273
G2050 Landscaping	**182,022**	SF	2.89	525,309
Allow	1	LS	525,309.31	525,309
G3030 Storm Sewer	**182,022**	SF	1.50	273,033
Storm drain piping	182,022	SF	1.50	273,033
G2040 Site Development	**182,022**	SF	16.95	3,085,273
Hardscape	182,022	SF	16.95	3,085,273
G2050 Landscaping	**182,022**	SF	2.89	525,309
Allow	1	LS	525,309.31	525,309
G3030 Storm Sewer	**182,022**	SF	1.50	273,033
Storm drain piping	182,022	SF	1.50	273,033
G4020 Site Lighting	**182,022**	SF	1.50	273,033
Circulation lighting	182,022	SF	1.50	273,033
Alternate Cost Before Markups				**4,584,280**
Z10 Contingency	10.00%			458,428
Z21 Field Requirements	8.00%			403,417
Z22 Office Overhead & Profit	4.00%			217,845
Z30 Escalation to Midpoint (Feb 2016)	5.02%			284,556
				5,948,525



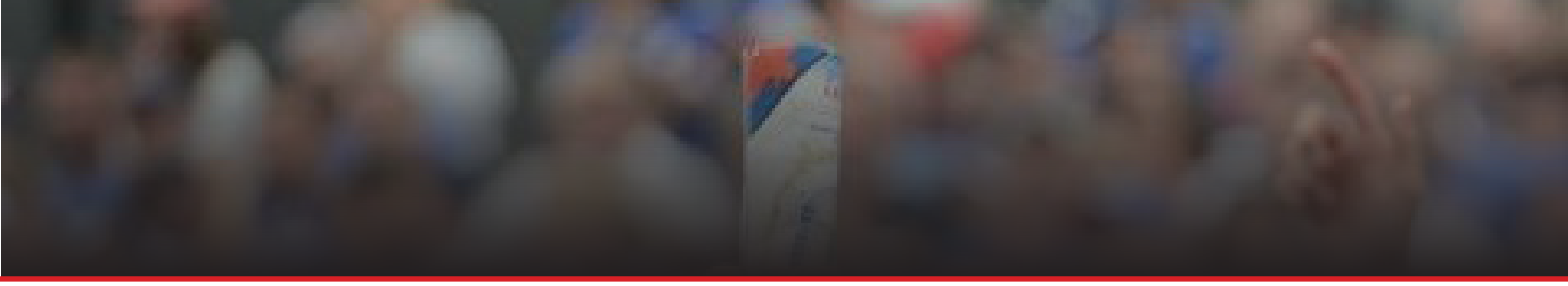
SOUTH PARK SITE - 5,345,300sf total, 4,599,822sf net of building & apron

G1010 Site Clearing	**5,345,300**	SF	1.29	6,899,733
Allow	4,599,822	SF	1.50	6,899,733
G1020 Site Demolition and Relocations	**5,345,300**	SF	0.73	3,906,809
Demolition of existing buildings	1	LS	3,906,808.56	3,906,809
G1040 Hazardous Waste Remediation	**5,345,300**	SF		
Excluded				
G2040 Site Development	**1,393,022**	SF	16.51	22,999,110
Hardscape	4,599,822	SF	5.00	22,999,110
G2050 Landscaping	**1,393,022**	SF	4.76	6,637,465
Allow	1	LS	6,637,465.02	6,637,465
G3030 Storm Sewer	**1,393,022**	SF	4.95	6,899,733
Storm drain piping	4,599,822	SF	1.50	6,899,733
G4020 Site Lighting	**1,393,022**	SF	4.95	6,899,733
Circulation lighting	4,599,822	SF	1.50	6,899,733
Alternate Cost Before Markups				**54,242,583**
Z10 Contingency	10.00%			5,424,258
Z21 Field Requirements	8.00%			4,773,347
Z22 Office Overhead & Profit	4.00%			2,577,608
Z30 Escalation to Midpoint (Feb 2016)	5.02%			3,366,949
				70,384,744



ORCHARD PARK SITE - 8,058,000sf total, 7,312,522sf net of building & apron

G1010 Site Clearing	**8,058,000**	SF	0.23	1,828,131
Allow for selective grading	7,312,522	SF	0.25	1,828,131
G1020 Site Demolition and Relocations	**8,058,000**	SF	1.24	10,000,000
Demolition of existing buildings	1	LS	10,000,000.00	10,000,000
G1040 Hazardous Waste Remediation	**8,058,000**	SF		
Excluded				
G2040 Site Development	**7,312,522**	SF	0.50	3,656,261
Pavement patching & restriping	7,312,522	SF	0.50	3,656,261
G2050 Landscaping	**7,312,522**	SF	0.34	2,500,000
Allow	1	LS	2,500,000.00	2,500,000
G3030 Storm Sewer	**7,312,522**	SF	0.25	1,828,131
Storm drain piping - mostly existing	7,312,522	SF	0.25	1,828,131
G4020 Site Lighting	**7,312,522**	SF	0.25	1,828,131
Circulation lighting - mostly existing	7,312,522	SF	0.25	1,828,131
Alternate Cost Before Markups				**21,640,653**
Z10 Contingency	10.00%			2,164,065
Z21 Field Requirements	8.00%			1,904,377
Z22 Office Overhead & Profit	4.00%			1,028,364
Z30 Escalation to Midpoint (Feb 2016)	5.02%			1,343,280
				28,080,739

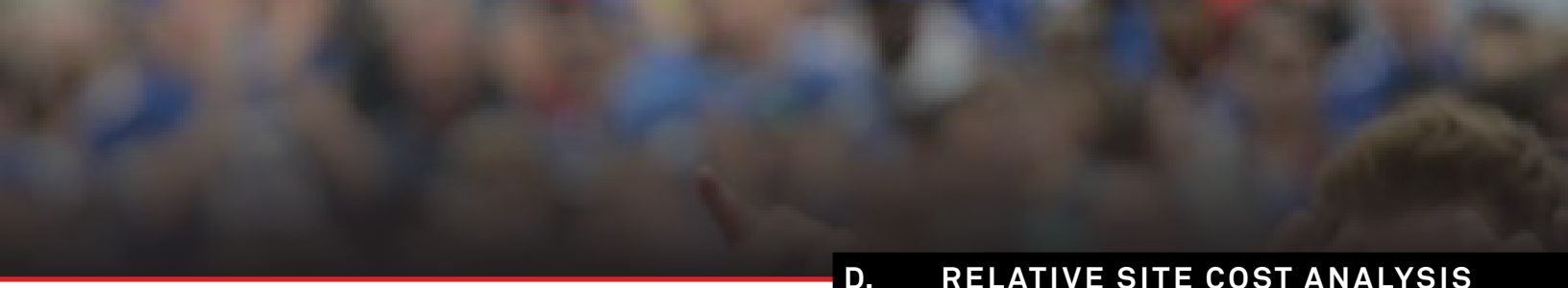


Individual Site Conditions Costs

Item Description	Quantity	Unit	Rate	Total
Item 1: Raising site above flood plain				
G1030 Site Earthwork	**609,943**	SF		
Imported fill to raise existing level from +7 to +11	90,362	CY	25.00	2,259,048
Alternate Cost Before Markups				**2,259,048**
Z10 Contingency	10.00%			225,905
Z21 Field Requirements	8.00%			198,796
Z22 Office Overhead & Profit	4.00%			107,350
Z30 Escalation to Midpoint (Feb 2016)	5.02%			140,224
				2,931,323

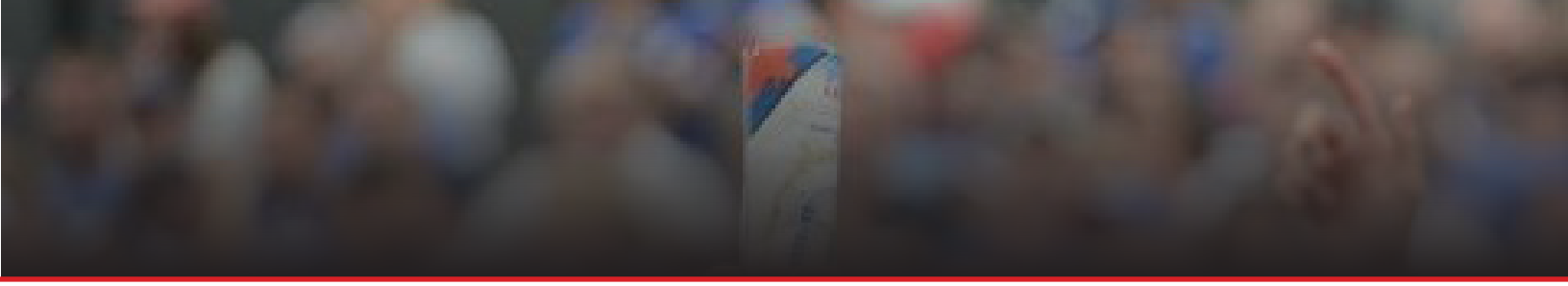
Stadium Average Versus Current Cost Model

		Average $/SF	Average TOTAL	Cost Model $/SF	Cost Model TOTAL
	Gross Floor Area:	1,685,764 SF		1,870,514 SF	
A10	Foundations	18.78	31,653	21.89	36,896
A20	Basement Construction	0.00	0	0.00	0
A	Substructure	18.78	31,653	21.89	36,896
B10	Superstructure	76.76	129,397	47.37	79,860
B20	Exterior Enclosure	21.15	35,651	16.11	27,160
B30	Roofing	5.20	8,771	3.29	5,545
B	Shell	103.11	173,819	66.77	112,564
C10	Interior Construction	27.97	47,157	21.88	36,893
C20	Stairways	0.00	0	1.23	2,078
C30	Interior Finishes	13.71	23,106	22.10	37,256
C	Interiors	41.68	70,263	45.22	76,227



Stadium Average Versus Current Cost Model

		Average		Cost Model	
		$/SF	TOTAL	$/SF	TOTAL
D10	Conveying Systems	4.47	7,543	6.77	11,413
D20	Plumbing Systems	12.64	21,304	8.82	14,860
D30	Heating, Ventilation & Air Conditioning	16.77	28,266	18.48	31,160
D40	Fire Protection	2.88	4,863	3.41	5,740
D50	Electrical Lighting, Power & Communications	32.60	54,964	34.00	57,310
D	Services	69.37	116,940	71.47	120,484
E10	Equipment	17.27	29,120	19.80	33,374
E20	Furnishings	17.49	29,489	6.57	11,075
E	Equipment & Furnishings	34.77	58,609	26.37	44,448
F10	Special Construction	2.06	3,477	1.47	2,480
F20	Selective Demolition	0.00	0	0.00	0
F	Special Construction & Demolition	2.06	3,477	1.47	2,480
ELEMENTAL COST BEFORE CONTINGENCIES		269.77	454,761	233.19	393,099
Z10	Contingency	6.43	10,833	23.32	39,310
ELEMENTAL COST INCLUDING CONTINGENCIES		276.19	465,594	256.51	432,409
Z21	General Requirements	24.43	41,191	20.52	34,593
Z22	Fee	9.50	16,016	11.08	18,680
Z23	Bond	2.66	4,489	0.00	0
CONSTRUCTION COST BEFORE ESCALATION		313.03	527,691	288.11	485,681
Z30	Escalation to Midpoint (Feb 2016)	15.73	26,511	14.47	24,400
RECOMMENDED BUDGET		328.75	554,202	302.58	510,082



MARKET RESEARCH

Set forth below is an analysis of the current market conditions in Buffalo, New York including changes in demographics and socioeconomic conditions. In addition, AECOM evaluates recent trends in the regional hotel, office, residential and retail markets to understand the economic environment in which the proposed stadium and ancillary development will operate. This information is being provided for context only and AECOM makes no assumptions regarding the future development or performance of various types of facilities.

While we will provide high level market and demographic analysis for the metropolitan area for each of the proposed real estate uses, this analysis does not take the place of a precise market and feasibility study associated with ancillary real estate development, either on- or off-site.

DEMOGRAPHICS

Comprised of Erie and Niagara counties, the Buffalo-Niagara Falls, New York metropolitan statistical area (MSA) is home to 1.1 million people. The MSA was a major industrial area with a large steel manufacturing industry. As manufacturing jobs moved out of the northeast, the population followed. In 1970, the MSA population peaked with 1.3 million residents. Although the population in the MSA may have stabilized in recent years at 1.1 million people, Figure 1 above shows the redistribution of the population in Buffalo and the surrounding areas. Even as the population was growing in the MSA, the share of residents living in Buffalo declined as people moved to the suburbs. In 1940, 60 percent of the MSA residents lived in Buffalo. By 2010, the number of residents in the MSA residing in Buffalo had dropped to 23 percent, and that rate has remained constant since.

Figure 1 – Population of Buffalo-Niagara Falls MSA, 1940-2013

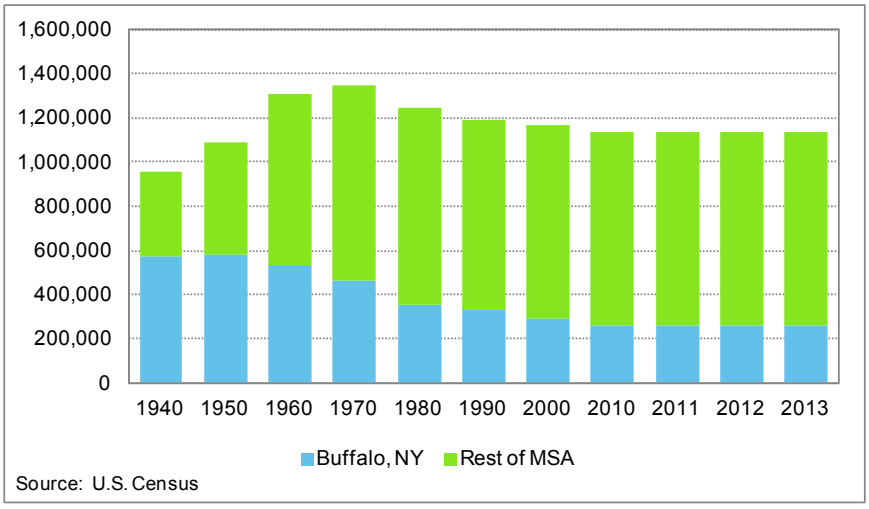
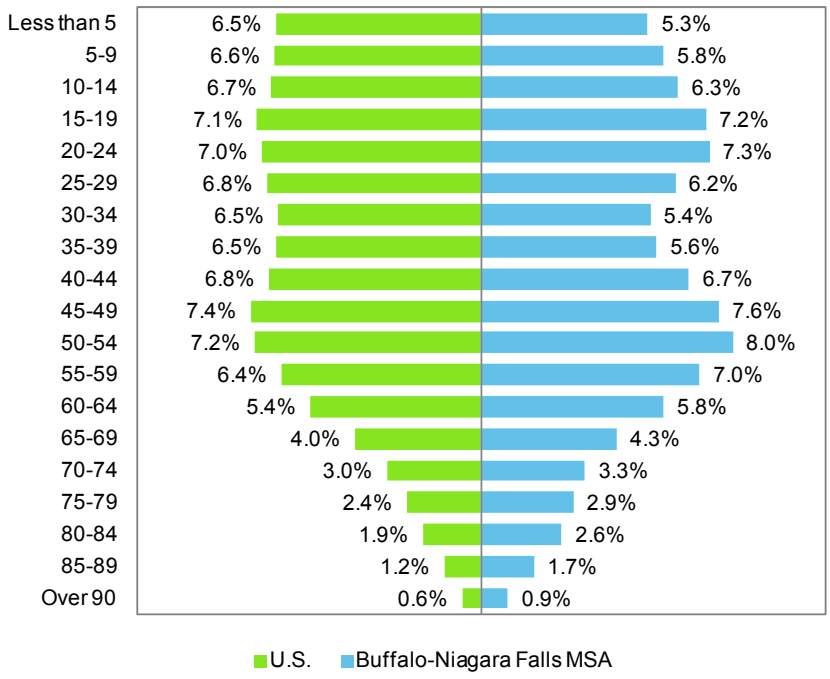


Figure 2 – Age Distribution, 2010



Source: U.S. Census

The median age of residents in the Buffalo-Niagara Falls MSA is several years older than the U.S. median, 40.6 years in Buffalo compared to 37.2 years in the U.S. Interestingly, the median age for residents in Buffalo was 33.2 years reflecting in part the student population. Figure 2 compares the distribution of residents by age group in the U.S. and the Buffalo-Niagara Falls MSA. There is a smaller share of the MSA population under the age of 14 than in the U.S. and a larger share of residents over the age of 45. Residents between the ages of 25 and 64, the core of the workforce, represent 52.3 percent of the Buffalo MSA population, compared to 53 percent of the U.S. population at large. The share of residents between the ages of 15 and 24 is slightly higher in the MSA than in the U.S. which could reflect the university population in the region. The City of Buffalo projects the MSA population to grow by 28% by the year 2031.

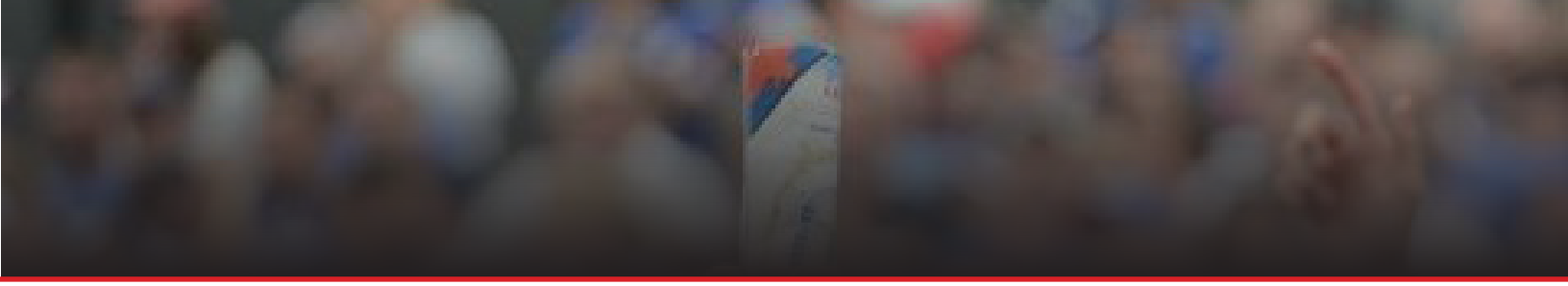
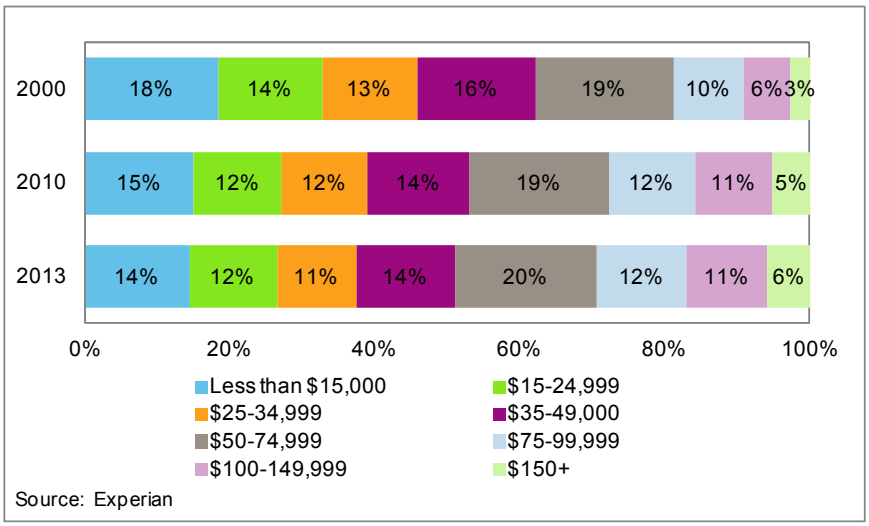


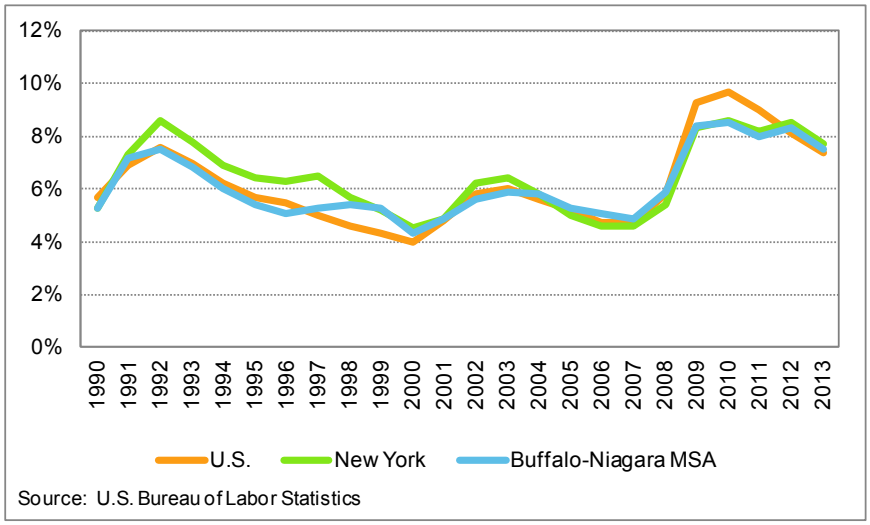
Figure 3 – Buffalo-Niagara Falls MSA Income Distribution



The median household income for the city of Buffalo metro area is lower than the national median. In 2011, median household income in the U.S. was $50,502 compared to $47,081 in the MSA. The distribution of households by income is shown in Figure 3 with a clear shift occurring from lower income categories to higher. In 2000, 18 percent of all households earned less than $15,000 annually. By 2013, that share had dropped to 14 percent, yet the income category showing the largest growth is households earning between $100,000 to $149,999.

SOCIOECONOMICS

Figure 4 – Unemployment Rates, 1990-2013



With the exception of the late 1990s and the late 2000s, the unemployment rate in the Buffalo-Niagara Falls MSA has substantially mirrored national trends, as reflected in Figure 4. During the most recent economic downturn, the regional unemployment rate was lower than the national averages by a full percentage point. However, in 2012 and 2013, the unemployment rate in the MSA surpassed the national rates slightly.

Within the MSA, the number of jobs has remained fairly steady, even during the recent recession, though in 2013, there were 4,200 fewer jobs in the Buffalo region than in 2001. The types of jobs in the economy has shifted though, with a smaller share of goods producing and more service providing and government jobs.

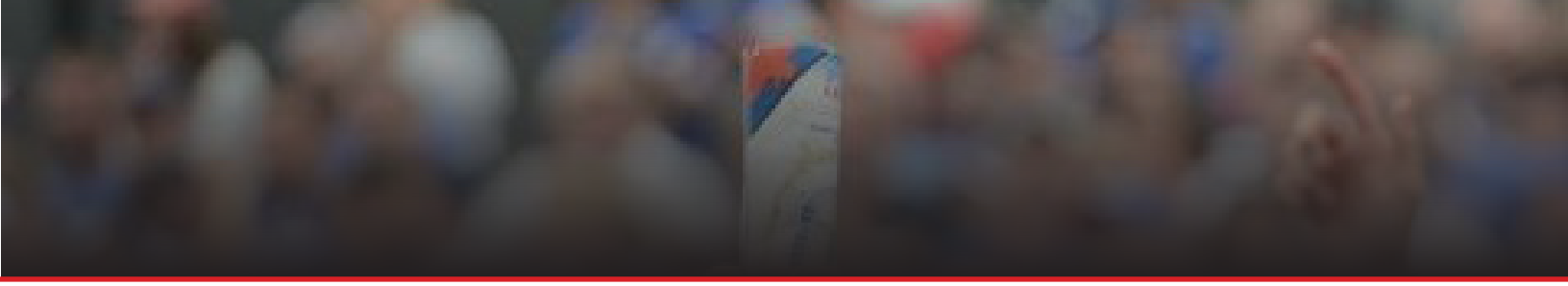
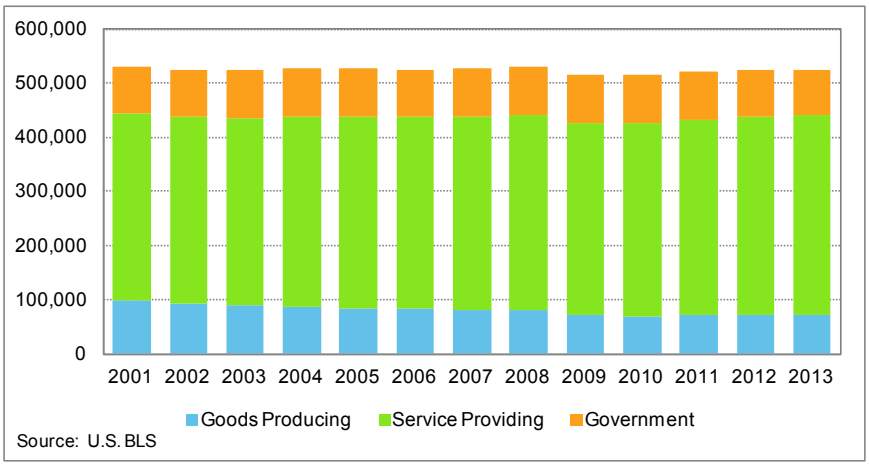


Figure 5 – Regional Labor Market Trends, 2001-2013



Goods producing jobs include natural resources and mining, construction and manufacturing jobs. In 2001, there were 99,887 people employed in goods producing jobs, 19 percent of all jobs. By 2013, this fell to 71,020 jobs or 14 percent of the total. Manufacturing jobs make up the largest share of the goods producing sector and experienced a significant downturn since 2001, nearly 27,300 jobs. Service providing jobs accounted for much of this decline, adding 26,157 since 2001. The most jobs were added in professional and business services, followed by leisure and hospitality jobs and education and health service jobs. Employment in the public sector makes up 16 percent of jobs in the Buffalo MSA. Some jobs were lost in the federal and local government, but small gains were made in state government employment.

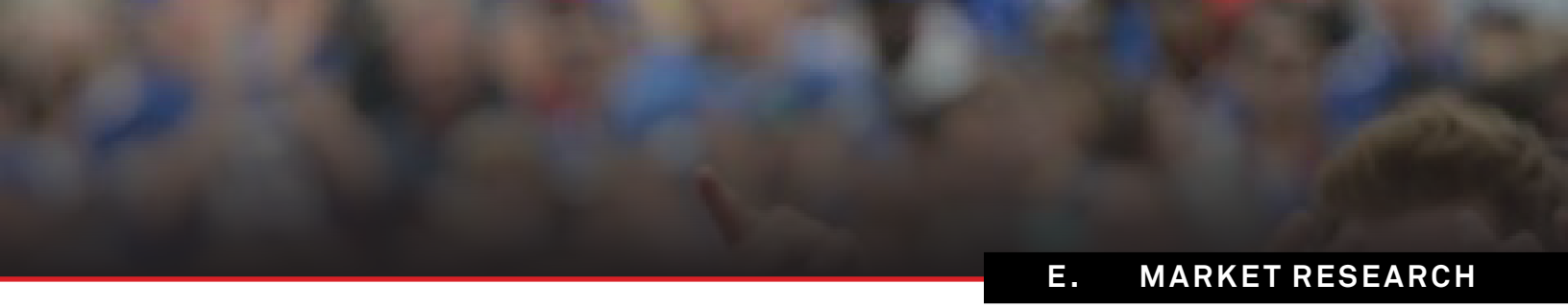
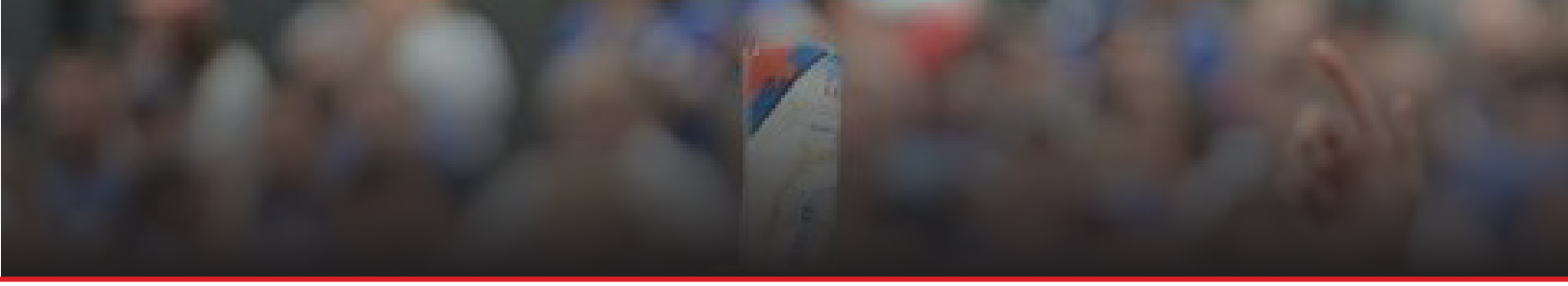


Table 1 – Top Private Employers in the Buffalo-Niagara Falls MSA, 2014

Employer	Sector	Number of Employees
Kaleida Health	Health care system	10,000
Catholic Health System	Health care system	6,628
Employer Services Corp.	Employment-related services	6,363
M&T Bank	Commercial bank	5,140
Tops Markets LLC	Supermarket retailer	5,058
Catholic Diocese of Buffalo	Parishes, schools, and institutions	3,500
Wegmans Food Markets Inc.	Supermarket retailer	3,209
Roswell Park Cancer Institute	Hospital	3,186
Moog Inc.	Manufacturer	3,174
HSBC Bank USA N.A.	Commercial bank	3,000

Source Buffalo Business First 2014 Book of Lists

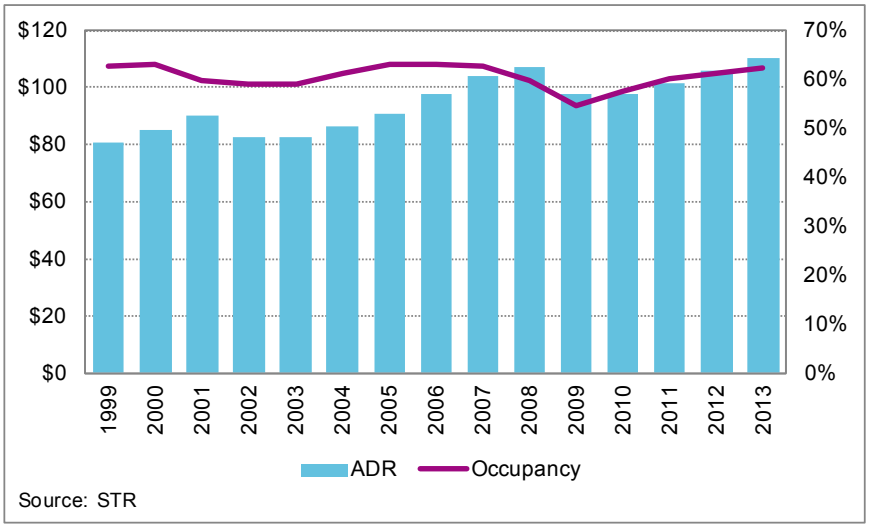
Table 1 shows the largest private employers in the Buffalo MSA. The largest two private employers are in the health care sector. The MSA has become the center for healthcare and education for much of Western New York.



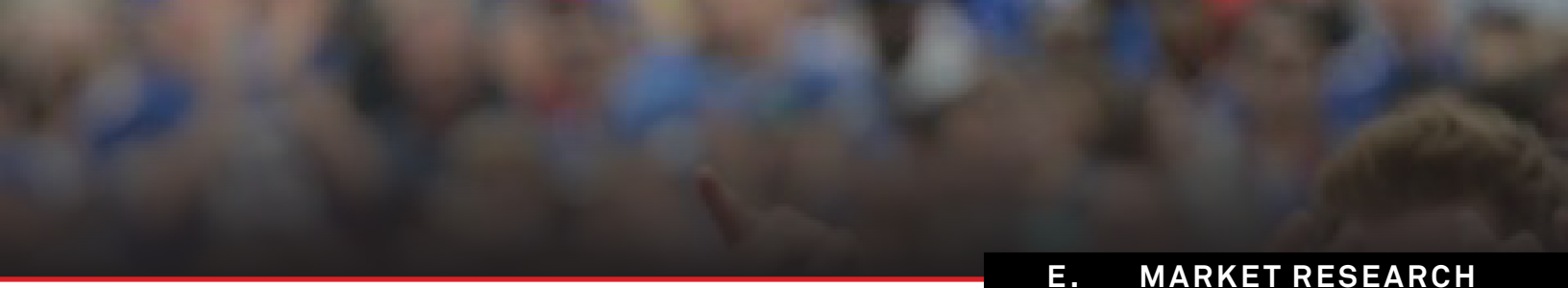
HOTEL MARKET

The travel industry nationwide has been showing signs of gradual recovery since 2010 and in 2013 room rates surpassed pre-recession levels. Smith Travel Research (STR), a company that gathers lodging industry supply, demand and performance data from properties in more than 160 countries, reported that U.S. hotels experienced growth in three key metrics during 2013 – occupancy, average daily rate (ADR) and revenue per available room (RevPAR).

Figure 6 – U.S. Hotel Performance, 1999-2013



Overall, the U.S. hotel industry's occupancy increased to 62.3 percent in 2013, the highest it has been since 2007. During the past several years, increases in occupancy did not always translate into revenue gains as many hotel properties lowered their room rates due to increased competition. In addition, there was a downshifting in type of hotel used. Instead of staying in an "Upper Upscale" hotel such as a Hilton, Hyatt or Marriott, travelers choose instead to stay in "Upscale" hotels such as a Courtyard, Crowne Plaza or Hilton Garden Inn. However, from 2012 to 2013, the average daily rate (ADR) was up 3.9 percent to $110.35; reaching a new peak, and revenue per available room (RevPAR) which accounts for both occupancy and ADR grew 5.4 percent to $68.69. According to STR, in 2013 the U.S. hotel industry also had the highest number of rooms available (1.7 billion), rooms sold (1.1 billion) and room revenue ($122 billion). These numbers indicate both that more people are traveling and that rates have also recovered which is good news for the industry. The progress made in 2013 can be attributed to the combination of overall improved economic conditions, corporate and consumer confidence, strong leisure travel demand and moderate room supply.



STR classifies hotels into class segments based on their brand as well as average room rates. Independent hotels are now categorized by class also. The segments include:

- Luxury Chains
- Upper Midscale Chains
- Upper Upscale Chains
- Mid Scale Chains
- Upscale Chains
- Economy Chains

In the Buffalo region, there are 156 hotel properties providing 13,656 rooms according to STR. The following table shows the number of hotels operating throughout the Buffalo region as well as the number of rooms by class.

Table 2 – Hotels in Buffalo Region

	Properties	Rooms
Economy	72	3,462
Midscale	23	2,349
Upper Midscale	35	4,247
Upscale	19	1,937
Upper Upscale	7	1,661
Total	156	13,656

Source: STR

Though "Economy" hotels make up the largest number of properties, the largest share of rooms are "Upper Midscale", which includes Comfort Inn, Holiday Inn, Hampton Inn Best Western and similar hotels. Nearly half of the rooms in the MSA are in the cities of Buffalo and Niagara, 6,536 rooms. There are currently 7 properties under construction throughout the region which will increase the room count by 6 percent, a total of 861 new rooms. There are no luxury properties in the market.

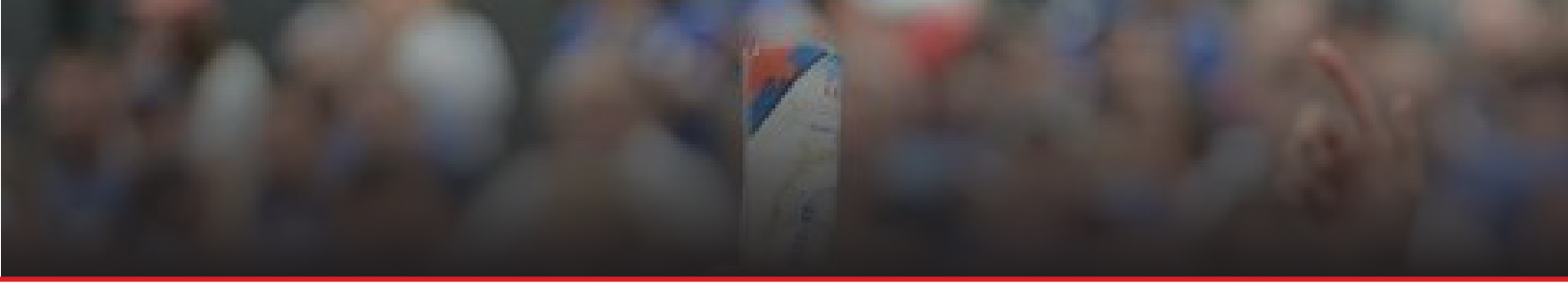
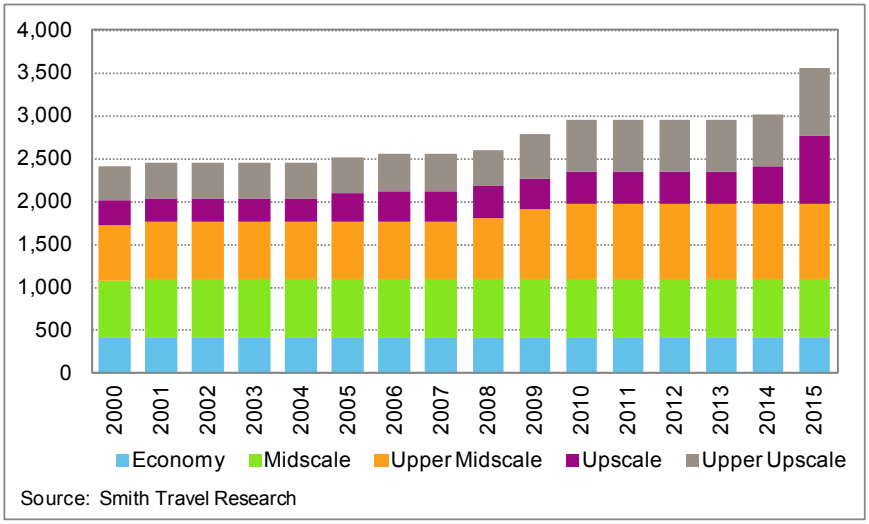


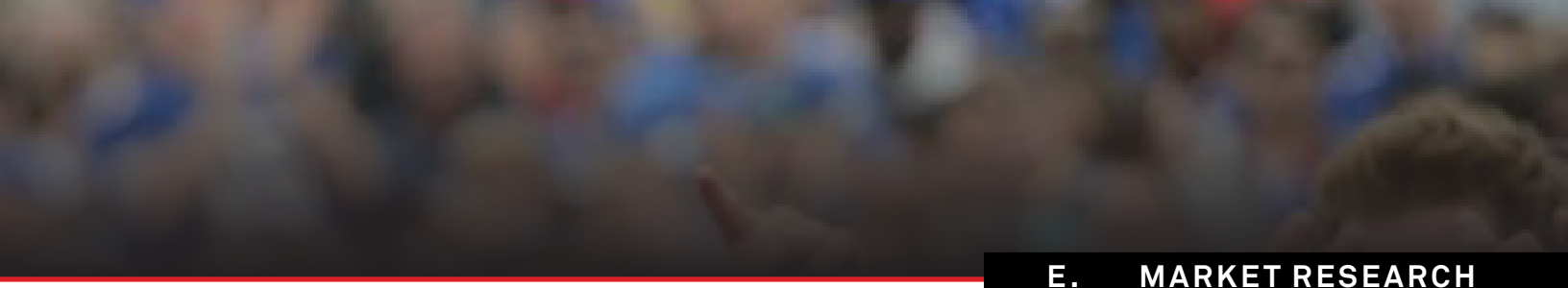
Figure 7 – Buffalo Hotel Rooms by Class



As set forth in Table 2, the 156 hotels in the region, 23 are located in Buffalo with 3,564 rooms. Figure 7 shows hotel rooms by class with the largest share of rooms classified as upper midscale (868 rooms). The number of hotel rooms offered in Buffalo grew at an average rate of 1.6 percent per year since 2000, as a total of 616 rooms were added over this span. In May 2014, the Courtyard Buffalo Downtown Canalside opened with 102 rooms. It was the first new hotel in Buffalo since the Fairfield Inn & Suites Buffalo Airport, an "Upper Midscale" property, and the Embassy Suites Buffalo, an "Upper Upscale" property, opened in July 2009.

Table 3 – Hotels Under Construction in Buffalo, New York

Property	Zip Code	Rooms
Upscale		
Boutique Hotel	14202	57
Hilton Garden Inn Buffalo Downtown	14202	116
Hyatt Place Buffalo Amherst	14226	137
Upper Upscale		
Marriott Buffalo Downtown	14203	205
Source: STR		



E. MARKET RESEARCH

According to STR and set forth in Table 3, there are 4 hotels currently under construction in Buffalo which will add 515 rooms to the inventory, a 17 percent increase. Three of the properties are "Upscale" and the other is "Upper Upscale". Three of the properties are downtown, adding 378 rooms. The Marriott property is located in the HARBORCENTER, a mixed-use development adjacent to the Niagara Center with two hockey rinks and other amenities, and is scheduled to open in mid-2015. A 2014 report by HVS lists several redevelopment projects that include hotels:

- The former Trio manufacturing facility will be developed into a 230 room facility divided into an upscale boutique property and an upscale extended stay hotel along with residences and retail space.
- The Richardson Olmsted complex in Buffalo's Forest neighborhood will be reportedly redeveloped into an 88 room boutique hotel and event center by 2016.
- The former Curtis Building downtown may be redeveloped into a 67 unit upscale boutique hotel.
- The Grange League Federation grain elevator and warehouse is part of the RiverWorks mixed use development which will include a craft brewery, hotel, entertainment and retail attractions.
- The Adam's Mark hotel is currently for sale. Given its proximity to HARBORCENTER, there is a possibility that a future owner may renovate and reposition the hotel to capture the influx of hockey-related and meeting and group demand.

An in-depth analysis of the 12 properties downtown (Midscale and better) shows a healthy market, in part due to limited supply of hotel rooms. As shown in Table 4, combined these 12 hotels offer 1,905 rooms and represent the competitive market for new hotel development downtown. The largest property is Adam's Mark Buffalo with 486 rooms. The Hyatt Regency provides 396 rooms.

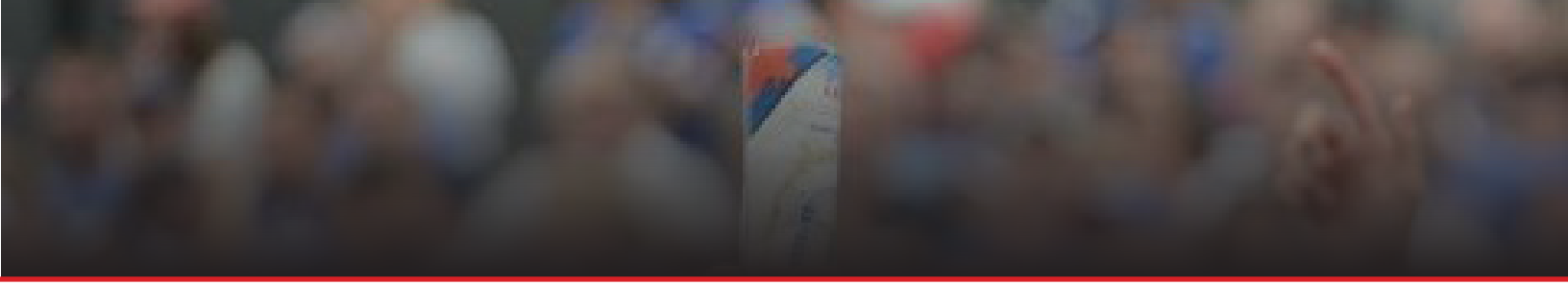


Table 4 – Select Properties in Downtown Buffalo

Class/Property Name	Open Date	Rooms
Midscale		
Adam's Mark Buffalo	June 1980	486
Best Western on the Avenue	June 1968	61
Lenox Hotel	NP	40
Upper Midscale		
Comfort Suites Downtown Buffalo	April 1980	146
Doubletree Club Buffalo Downtown	Nov. 1998	100
Hampton Inn Suites Buffalo Downtown	May 2001	140
Holiday Inn Buffalo Downtown	Aug. 1966	167
Upscale		
Courtyard Buffalo Downtown Canalside	May 2014	102
Hotel @ The Lafayette	June 1904	57
Upper Upscale		
Embassy Suites Buffalo	July 2009	182
Hyatt Regency Buffalo	Feb. 1984	396
The Mansion on Delaware Avenue	June 2001	28

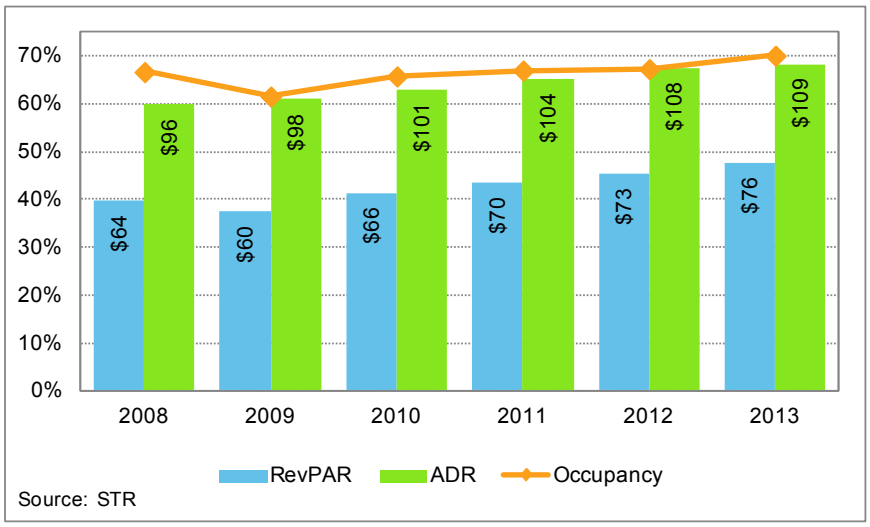
NP = Not provided

Source: STR

Performance data for these properties for the past several years shows that demand for rooms has outpaced changes in supply indicating that the market is not oversupplied. During the recent economic recovery, occupancy rates dipped in 2009 and have since surpassed pre-recession levels even as new properties opened.

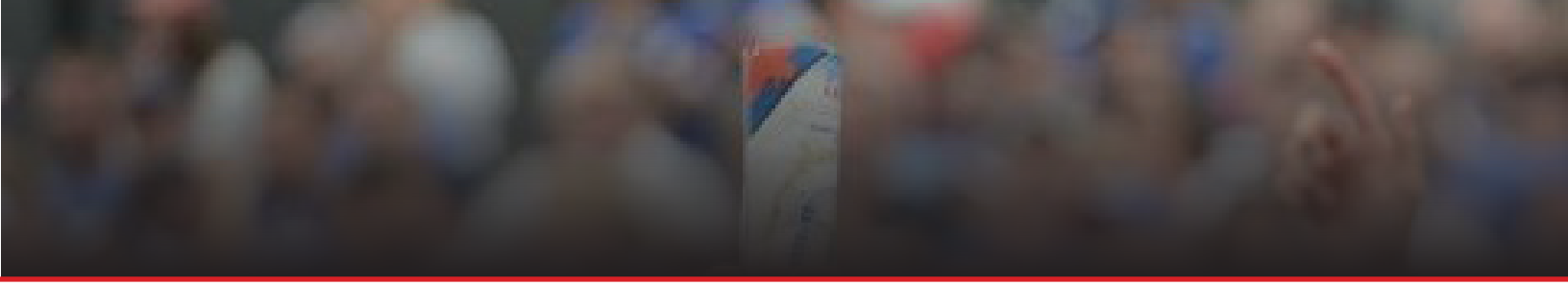
A commonly used hotel performance measure is revenue per available room (RevPAR). This is determined by dividing total room revenue by the room supply (i.e., the number of rooms available for the period being analyzed). RevPAR is a measure of how well hotels are able to fill rooms and is commonly throughout the industry to benchmark performance to other time periods, competitive hotels, other markets, etc. Among the properties described in table 4, RevPAR grew an average of 3.7 percent annually since 2008.

Figure 8 – Hotel Performance at Select Downtown Properties



Source: STR

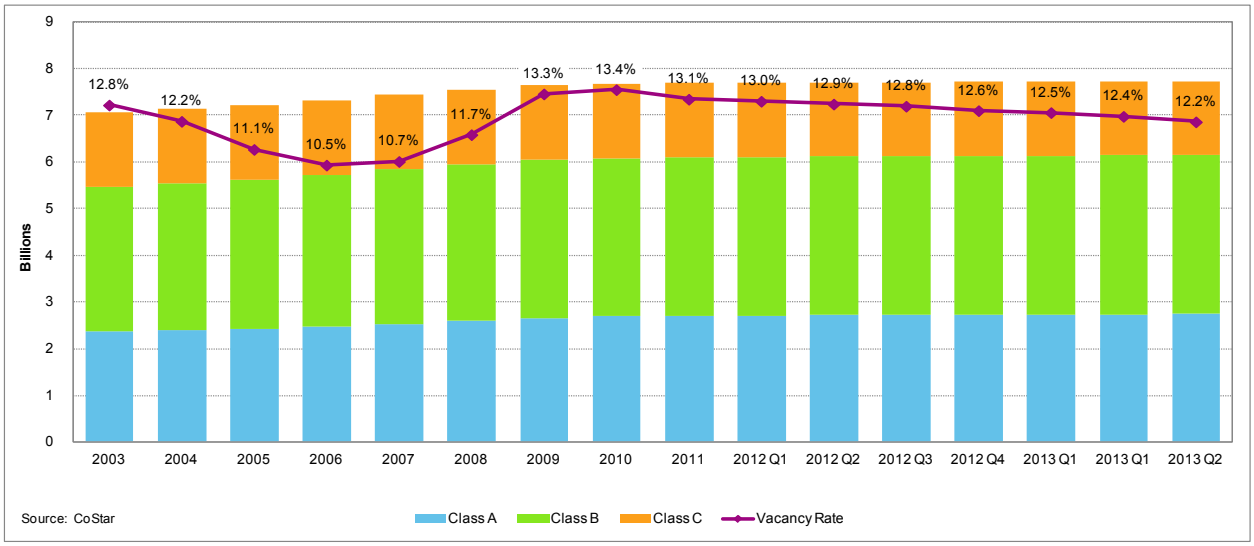
Since 2008, the number of rooms supplied in the market has been growing at 2.9 percent annually. Demand exceeded growth at 3.9 percent over the same time period which resulted in increasing occupancy rates. As an indicator of health in the hotel market, both the average daily rate (ADR) and RevPAR also grew. As set forth in Figure 8, 2013, RevPAR was $76 per room at the select properties, an increase of $12 per night since 2008. In a hotel market, when occupancy passes 70 percent, it is often an indicator that there is enough demand in the market to support additional rooms.



OFFICE MARKET

National demand for office space was negatively impacted by the economic downturn beginning in 2008, as illustrated in Figure 9. Vacancy rates started growing that year as companies reduced the size of their workforces as well as sought to minimize leasing costs by increasing worker density in office space.

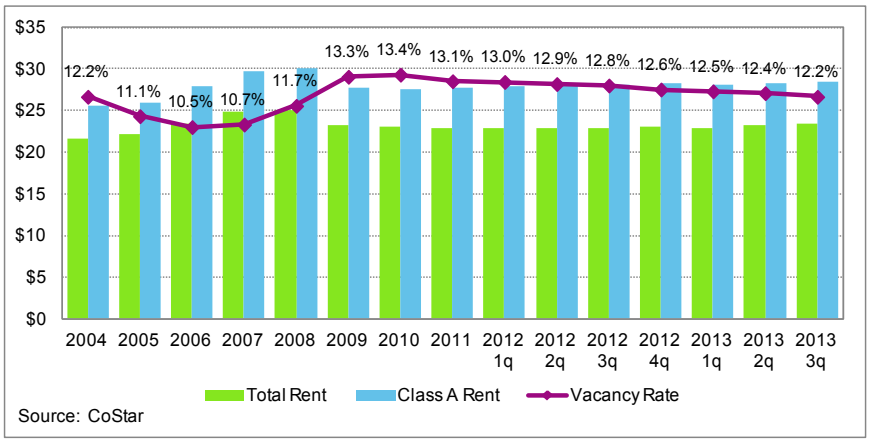
Figure 9 – National Office Market, 2003-Q2 2013



The recovery from the economic downturn is underway as illustrated by declining vacancy rates since peaking at 13.4 percent in 2010. Demand for office space has been restructured since the beginning of the economic downturn. Contributing factors include higher worker productivity resulting in slower total employment growth, higher levels of worker density per office compared to the pre-downturn era and continuing technological advancements that ease remote work by employees as well as employer willingness to allow employees to work off site.

At the end of 2013 Q2, there was a total of 7.7 billion square feet of office space in the U.S., with 36 percent of this total comprised of Class A space, 44 percent Class B space, and 20 percent Class C space.

Figure 10 – National Office Market Rents



Typically, as vacancy rates increase, average rents fall. Figure 10 does show this relationship at the national level, particularly as the recession began. Since the dramatic drop in rates in 2009, they have varied little, reaching $23.37 per square foot of office space in the third quarter of 2013. Rates for Class A space have recovered faster, adding $0.75 per square foot in rent since 2009 compared to $0.07 for total rents. However, they are still lower than their peak of $30.07 per square foot in 2008. At the end of the third quarter of 2013, average rents for Class A space in the U.S. were $28.56 per square foot, more than $7.50 square foot higher than Class B space.

In 2013, vacancy rates in the Buffalo market increased as a result of HSBC's downsizing. HSBC left more than 700,000 square feet vacant at the One Seneca Tower in the central business district (CBD). A report by HVS indicates that there are discussions to convert the building to a mixed use space with lodging, office, retail, entertainment and other uses. The impact of this vacancy will likely linger. On the positive side, there are several redevelopment initiatives resulting from the Buffalo Billion initiative. The initiative was developed by the Western New York Regional Economic Development Council (WNYREDC) at the request of Governor Cuomo. In 2013, the WNYREDC pledged $1 billion in state funds to attract complementary private investment in excess of $5 billion to accelerate growth in health care, manufacturing, technology and tourism. To date, key components include the $1.5 billion Buffalo High-Tech Manufacturing Hub at RiverBend, the $225 million Buffalo Medical Innovation and Commercialization Hub, the $50 million New York Genome Center, the $53 million Buffalo Niagara Advanced Manufacturing Institute, and the $55 million Buffalo IT Innovation and Commercialization Hub.

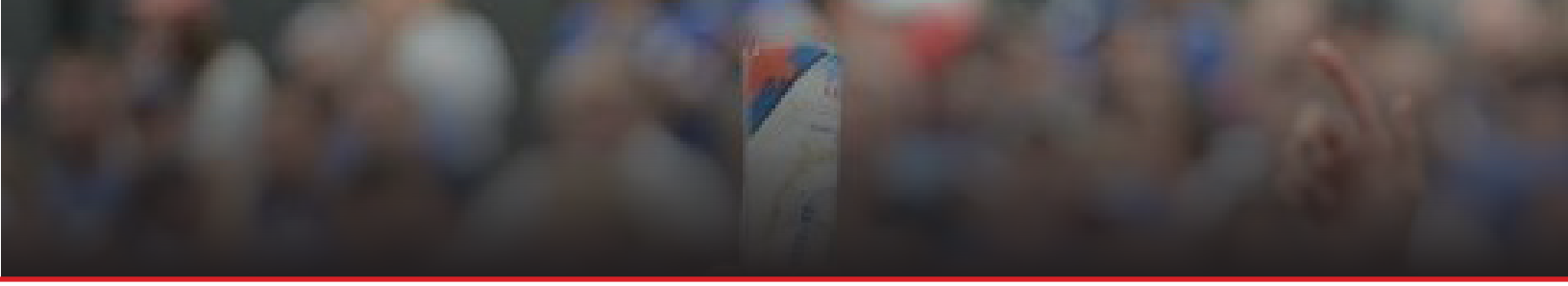
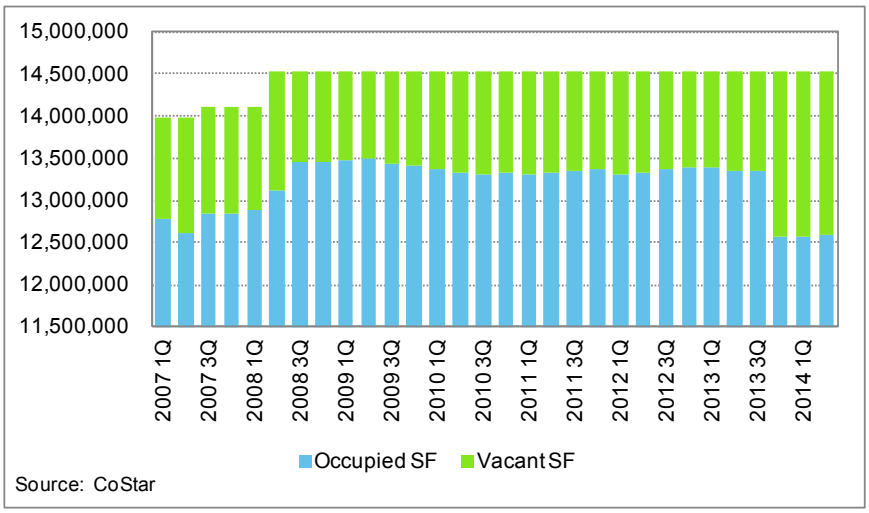
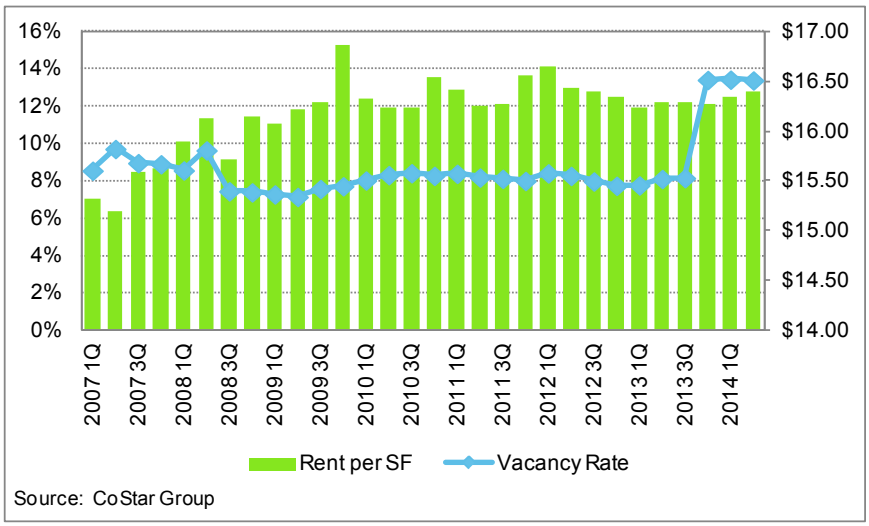


Figure 11 – Total Office Space in Buffalo CBD



According to the CoStar Group and as set forth in Figure 11, a company that maintains a database of existing and under construction office buildings in metropolitan areas across the U.S., there are 14.5 million square feet of office space in Buffalo's central business district. Since the first quarter of 2007, only two properties have been added, increasing the inventory by 547,258 square feet. The total rental building area (RBA) has been unchanged since the second quarter of 2008. The number of vacant square feet has not been as volatile as the national averages. However, with the HSBC departure discussed above, the share of vacant space increased in the third quarter of 2013 from 8.2 percent to 13.4 percent, nearly 2 million square feet of vacant space.

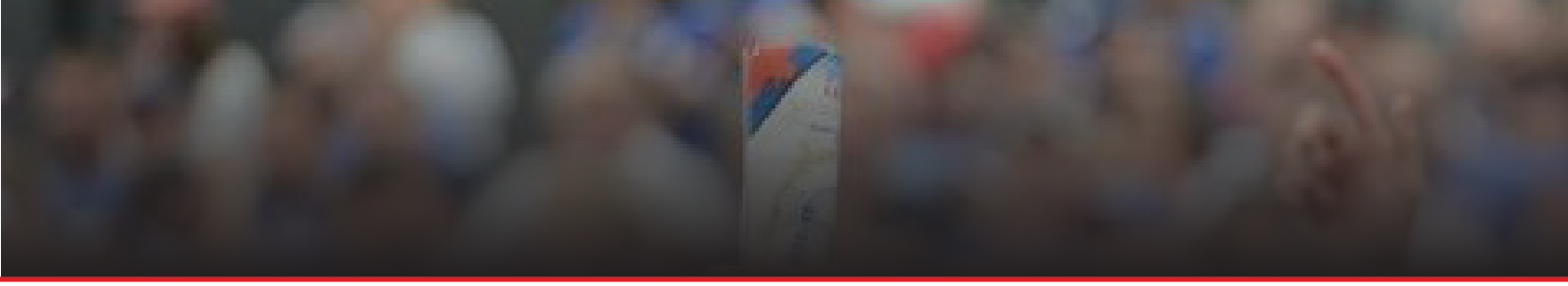
Figure 12 – Vacancy Rates and Rent for Buffalo CBD Office Space



Typically as vacancy rates rise, rents fall. However, vacancy rates in the Buffalo CBD have been fairly steady until recently, as shown in Figure 11. Rents also fluctuated only slightly. The average rent for office space peaked in the fourth quarter of 2009 at $16.86. Since then, rates have fallen and have been averaging $16.30 for the past several quarters. As of the second quarter of 2014, average rents were $16.39 per square foot.

There are 5.6 million square feet of Class A space in downtown Buffalo. Vacancy rates were just under 7 percent until the One Seneca property emptied. Currently at 20 percent vacancy, rates dropped slightly to $18.05 per square foot.

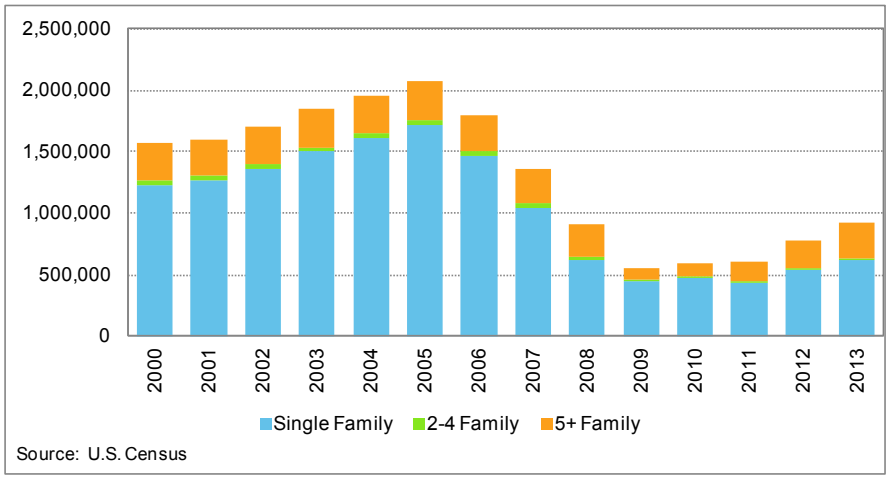
Though nationally construction has slowed, CBRE projections show more than 500,000 square feet of office space currently under construction in the Buffalo market with another 300,000 square feet in the planning stages. In addition to new construction, new inventory is expected to come from redevelopment projects in the CBD of Class C space.



RESIDENTIAL MARKET

Home sales and prices across the country have recently been rising, though still lagging from the peak of the housing bubble back in 2006. This rise has been attributed to a drop in foreclosures, lower unemployment, continued low mortgage rates and pent up demand. Homeownership peaked in the U.S. in 2004 at 69.2 percent and has experienced a steady decline dropping to 64.8 percent in the first quarter of 2014. Restrictive credit markets, low inventories of homes for sale and high student debt for young adults have made home ownership difficult for some prospective owners. A difficult job market and stagnant wages also are hindrances. This has also affected the household growth rate. Though still growing it is at a much slower rate as some families are now cohabitating.

Figure 13 – Housing Starts in the U.S., 2000-2013

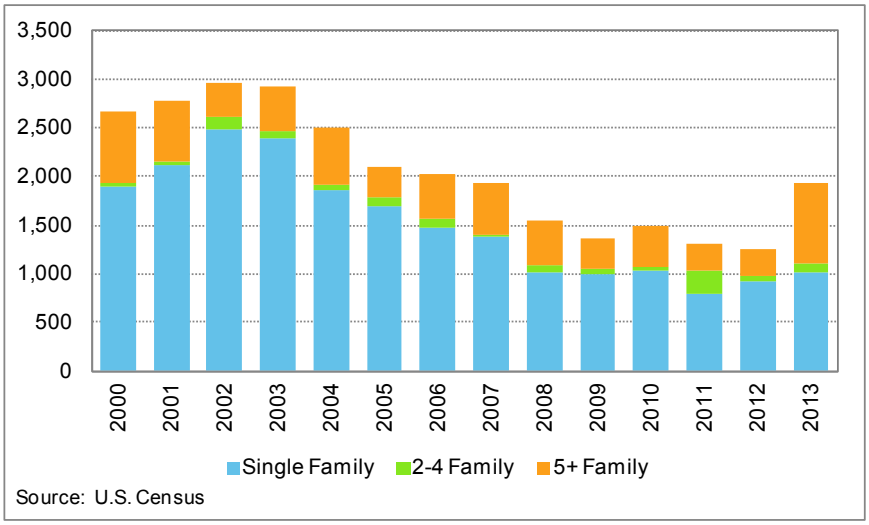


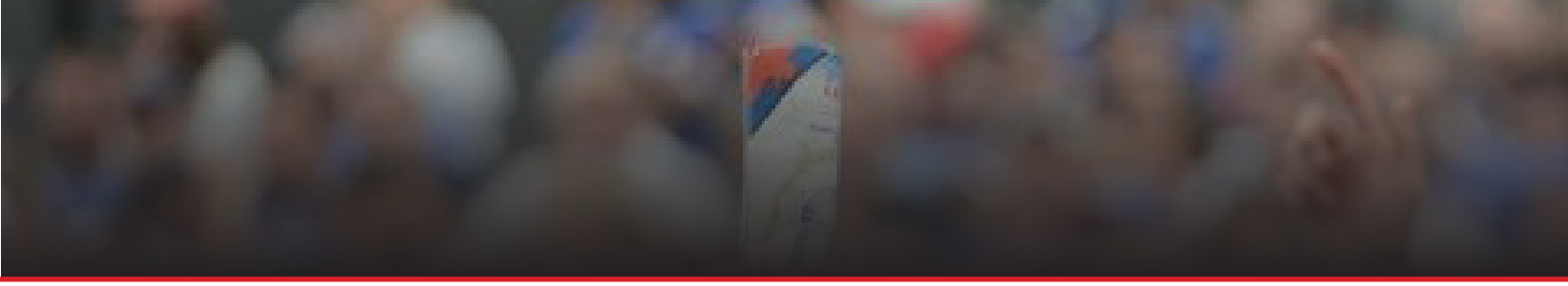
The strength of the housing market, and the economy, is often measured by housing starts. According to the U.S. Department of Housing and Urban Development (HUD), when the housing bubble began in 2003, the pace of single-family housing starts was at an annual rate of 1.5 million units, peaking in 2005 at 1.7 million units, as shown in Figure 13. Construction starts began rising again in 2010. At the end of 2013, there were 617,600 construction starts on single family homes, a 15 percent increase from 2012. Multifamily housing starts also peaked in 2005 and fell to a low of 108,800 in 2008. By 2013, there were 307,400, a 25 percent increase from 2012. The number of building permits issued, a fairly reliable indicator over time of future starts, follows a similar pattern as housing starts, peaking in 2005 and slowly recovering starting in 2010. Permits for single-family homes were up 20 percent in 2013 to 620,802. Multifamily building permits were up similarly. Before the housing market crashed, multi-family permits made up between 20 and

25 percent of all permits in the U.S. In the post-recession recovery, they made up 37 percent in both 2012 and 2013 indicating that perhaps this segment is recovering faster.

In the Buffalo MSA, there were an estimated 518,979 housing units in 2012, of which 90 percent were occupied. Owners occupied two-thirds of such units. Home sales declined in early 2014. According to Corelogic, as reported by HUD, existing home sales decreased by 3,675, or 35 percent, to 6,650 homes sold during the 12 months ending February 2014 compared with a year earlier, and the average sales price for an existing home sold decreased by 1 percent, to $116,350. Sales of new homes decreased 5 percent to approximately 120 homes sold and the average sales price decreased 11 percent to $196,250 during the same period. The rental market stabilized during the past year as the vacancy rate for apartments was unchanged. According to realtor.com, the average rent for a one bedroom apartment in Buffalo is $1,234 and $1,404 for a two bedroom. Rents are slightly higher in Buffalo than in the rest of the MSA which is typical in urban areas.

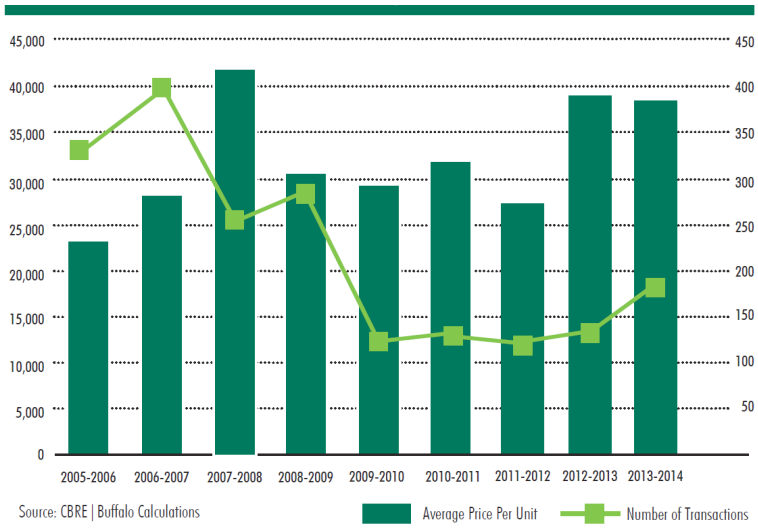
Figure 14 – Residential Building Permits, Buffalo-Niagara Falls MSA





As set forth in Figure 14, the Buffalo MSA, the number of residential building permits issued peaked in 2002 with nearly 3,000. The vast majority of such permits are for single family homes. With the recent financial crisis and the tightening of the credit markets, the number of permits issued for single family homes fell between 2007 and 2008 and again between 2010 and 2011. In 2013, the number was 1,016. The number of multi-family units has fluctuated over time with relatively few smaller multi-family buildings (2-4 units) than larger developments (5+ units). However, in 2013, there were considerably more permits issued for 5+ unit buildings in Buffalo than in previous years.

Figure 15 – Sales Transactions for Multi-Family Housing, 2005-2013



A 2013 report by CB Richard Ellis (CBRE) Global Research and Consulting, denoted in Figure 15, shows that multifamily housing transactions are slowly rebounding in the Buffalo market. In 2013, there were 179 sales transactions, up from 131 transactions in 2012. The sales transactions represented 2,688 apartment units, selling for an average of $39,627 per unit. As shown in Figure 15, the selling price is down slightly from the previous year, but still much higher than 2008-2009 levels. This reflects a recovering economy as well as the continuation of low interest rates.

Properties outside of the city of Buffalo are selling at a higher price. In 2013-2014, more than one-quarter of the apartments sold were in Buffalo (27%), averaging $29,733 per unit. This is 25 percent lower than the MSA average. In Erie County, the 1,320 apartments sold at an average of $48,359.

According to CBRE, published plans indicate 193 units to be built downtown as well as housing for 584 students in 216 units. There are several other reuse projects that have not released the number of units, one of which includes senior

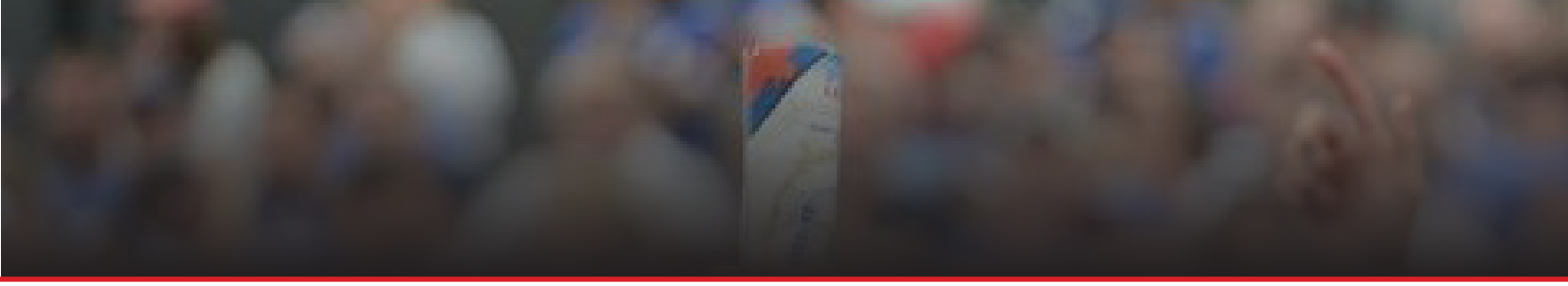
housing. In the surrounding area, there are pans to add 458 units of housing to the market which includes 120 senior housing units. According to CBRE, future demand is driven largely by the need for additional student housing in the region.

Table 5 – Estimated Demand for New Home Sales

Price Range	Units of Demand	Percent of Total
$150,000 to $199,999	310	12%
$200,000 to $249,999	800	31%
$250,000 to $299,999	570	22%
$300,000 to $349,999	360	14%
$350,000 to $399,999	180	7%
$400,000 to $499,999	150	6%
$500,00 and higher	210	8%

Source: HUD

In a 2012 report on the MSA housing market, HUD estimates demand for new market rate sales housing in Erie County through October 2015. Expected demand is 3,575 new homes in Erie County, some of which would be met by units under construction as well as currently vacant units. The rental housing market in Erie county has improved since 2010 as demand from college students and seniors increased. The vacancy rate in 2012 was 7 percent, down from 8.5 percent in 2010. HUD estimates that there is demand for nearly 1,525 new market rate rental units in Erie County through October 2015. Of those, 75 are studios, 460 are one bedrooms, 690 are two bedrooms and 310 have three or more bedrooms.



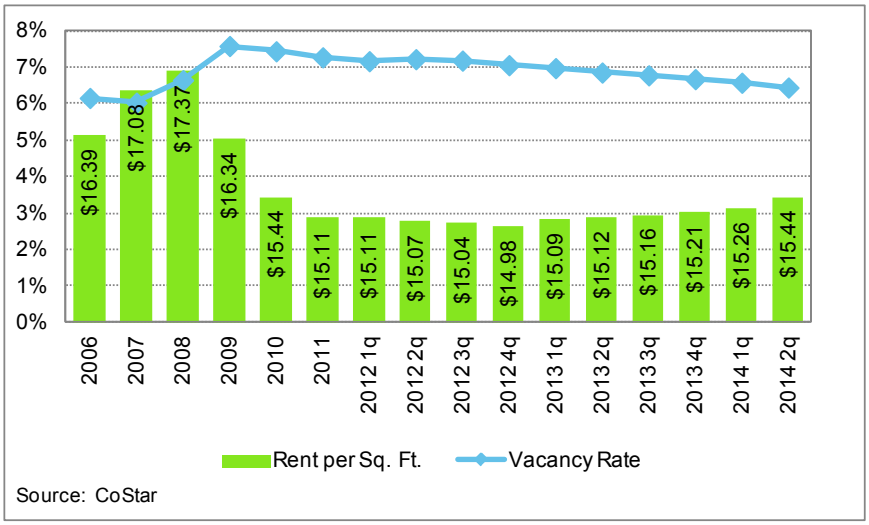
RETAIL MARKET

Retail sales declined as economic uncertainty grew in 2008 and 2009. Declines in net worth and home equity hindered consumer spending. Recovery began slowly in 2010 with some lingering concerns of a double dip recession through 2011. However, pent up demand combined with recovery in the housing markets, resulted in retail sales surpassing their previous peak in 2012, reaching nearly $4.9 trillion.

Two trends that will impact the retail market are worth noting – the sluggish rebound in the housing market and the push for taxation of online retail sales. Retail sales depend on household growth and new household formation. However, more young adults are living at home longer waiting for the economic recovery to take root. With small improvements in job creation, retail sales will rise. Second, pressure has been growing on Congress to address the sales tax exemption for interstate online retail sales. State and local governments, joined by some business interests, are pressing for the sales tax issue to be addressed as tax receipts for retail sales continue to drop due to the growth of online shopping.

The economic downturn had an impact on real estate as well. Several large big box retailers were not able to survive the economic downturn such as Borders, Circuit City and Linens 'n Things. Other chains are merging operations, such as Office Depot and OfficeMax, while other large retailers close underperforming stores across the country such as Kmart, Abercrombie & Fitch, and most recently, Blockbuster Video. These retailers have left large, empty storefronts in their wake and communities are struggling to fill them. At the same time, other retailers thrived as shoppers with consumers becoming more value-driven as household income declined. These cost-conscious shoppers shifted their spending to discount, dollar and thrift stores though it is expected that as employment and household spending recover, retail patterns will shift back.

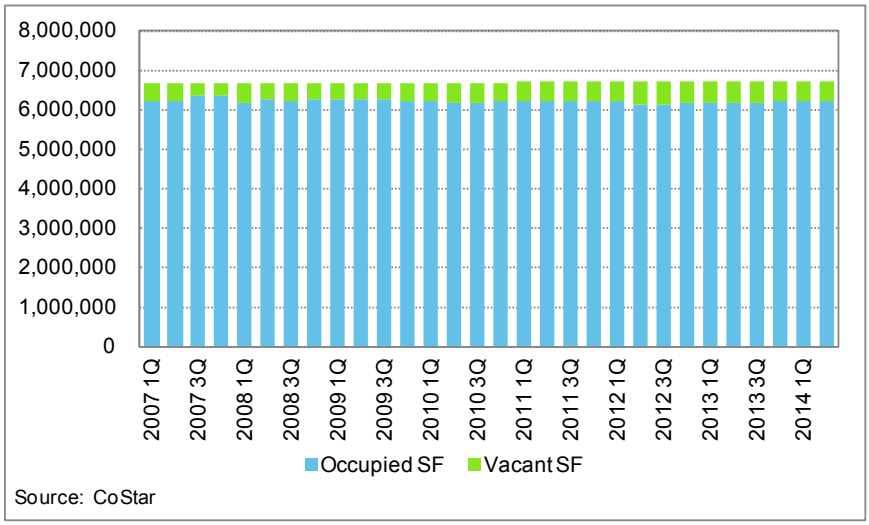
Figure 16 – National Retail Space, 2006-2014



Despite declines in retail sales, the amount of retail space in the U.S. continues to grow, though the pace of growth has slowed. By the second quarter of 2014, there were nearly 10.1 billion square feet of retail space throughout the U.S. according to CoStar. Reference Figure 16. Vacancy rates peaked at 7.6 percent in 2009 and have slowly fallen to 6.5 percent currently. As vacancy rates fell, rents started rising again, though they remain almost $2 per square foot lower than their peak of $17.37 in 2008. The amount of retail space being constructed fell dramatically in 2008 and 2009 as credit markets froze and project financing became very difficult. Even as the financial sector recovered, the amount of retail space expected to be delivered to market in the U.S. in 2014 is 8.9 million square feet compared to a high of 210.7 million square feet in 2006.

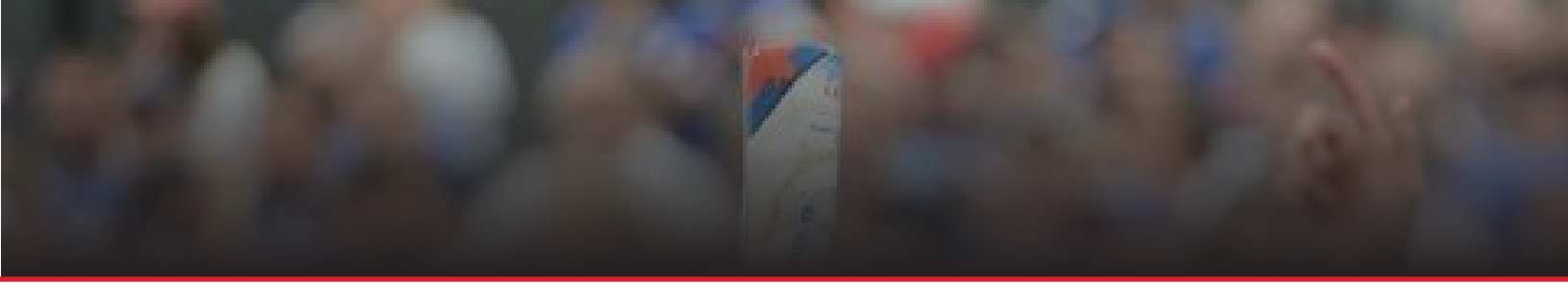
According to CoStar, the Buffalo-Niagara Falls MSA retail market has 59.9 million square feet of retail space, 7.1 percent of which is vacant. Current MSA rents average $10.26 per square foot. Over the past year, a total of 269,312 square feet of retail space has been built in Buffalo-Niagara Falls market. There were 2 retail spaces under construction which will add 16,826 square feet of retail space.

Figure 17 – Downtown Buffalo Retail Space



In Buffalo CBD, there are 6.7 million square feet of retail space, 11 percent of the region's total. The vacancy rate is slightly higher at 7.4 percent. Rents are also higher, averaging $13.59 per square foot, typical in a downtown. Since the first quarter of 2007, there has been only 1 retail space added to the downtown inventory with 26,206 square feet. Vacancy rates peaked in the second quarter of 2012 at 8.7 percent and have been falling slowly.

According to CBRE, attrition, redevelopment and adaptive re-use of vacant space have all contributed to the reduction. For example, a former Wal-Mart in Hamburg is being repurposed as a light manufacturing facility and a former department store is being redeveloped as a Cabela's in Cheektowaga.



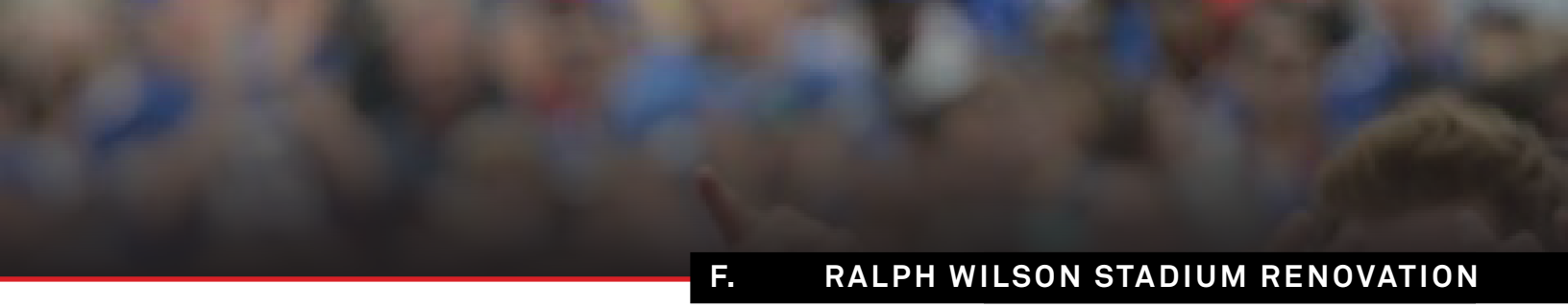
AECOM reviewed and evaluated the plans for the recently completed renovation project at Ralph Wilson Stadium (RWS). The RWS renovation project cost approximately $130 million and was completed prior to the 2014 NFL season.

The RWS renovations added value to the facility and are likely to be appreciated by Bills fans. The renovations included upgrading the arrival and concourse experience for fans and upgrading RWS's technological resources, including new HD video boards and Point of Sale technology for better and more flexible food and retail purchasing options. Further, RWS's concessions and toilet facilities were renovated on the concourses and entry gates were added from the parking lots. These improvements should improve fan experience and interaction capabilities.

It is difficult to compare the holistic impact of the amenities and accommodations of renovated NFL stadiums to those of newly constructed NFL stadiums. However, a categorical comparison of the amenities at the renovated RWS to those at a selection of other NFL stadiums, including certain recently renovated stadiums and certain newly constructed stadiums, is set forth in Appendix A.

While the RWS renovation project will certainly enhance the fan experience, as technology continues to advance, the existing RWS continues to age and NFL fan expectations continue to evolve, additional renovation projects and improvements to RWS may be necessary in order to entice the team to enter into a renewed long term lease. For reference purposes, the current trend in NFL stadiums is to provide seating treads of 34 inches to accommodate modern stadium chairs and provide fans with adequate leg room. By contrast, the post-renovation RWS will retain 30 inch seating treads. Further, the concourses in RWS are 22 feet wide and have to accommodate both fan circulation and concession queuing. The current trend in NFL stadiums is to provide concourses that are approximately 65 feet wide.

After reviewing the stadium documents we believe it may be possible to conduct renovations that would extend the useful NFL life of the facility. Renovations to Lambeau Field in Green Bay and Arrowhead Stadium in Kansas City provide examples of older facilities for which the useful NFL life was extended following extensive renovations. The $295 million dollar renovation to Lambeau Field included an overhaul of the Lambeau concourses, construction of a new retail Atrium, a new Pro Shop, adding rest rooms, adding a new entrance and adding new player facilities (including strength and conditioning rooms and a new player parking area). The $375 million renovation to Arrowhead Stadium included a new press box, a new Kansas City Chiefs Hall of fame, new seating arrangements, a new team store, new suites and club lounges and a children's learning area.



F. RALPH WILSON STADIUM RENOVATION

Beginning with those models, we could envision a future renovation to RWS that would take an approach similar to the renovation of Lambeau Field to address structural improvements and include upgrades to premium seating areas, additional restroom and concourse improvements, further improvements to Point of Sale system and ADA compliance-related improvements. For reference purposes, we believe renovations to RWS comparable to those at Lambeau Field and Arrowhead Stadium could cost over $420million in 2014 dollars. RWS however would offer the additional complexity of rebuilding the upper deck structures to accommodate the required premium suites and modern media facilities. This added challenge would add between $125 and $150 million to the other renovation cost model. Thus the costs associated with undertaking the aforementioned improvements and renovations could exceed $540 million in 2014 dollars. Note that this amount does not take into account any infrastructure improvements. Additional analysis combined with owner input is necessary to facilitate a discussion on merits of renovating RWS vs constructing a new facility.

Nonetheless, modernizing the stadium will not create a site that we anticipate becoming a candidate viable ancillary development, as discussed elsewhere in this report.