Addendum 2

Issued April 7, 2022

The City received the questions below via email from the respondents invited to submit responses to the Diamond District RFAI. Questions and responses are listed in no particular order.

Question: The Richmond 300 Plan shows a major park and other open spaces in the Diamond District. Is it a requirement to meet the total open space acreage illustrated in the Richmond 300 Plan? Or, is the Richmond 300 Open Space Plan just a suggested vision with acreage a flexible number?

Response: The open space plan shown in Richmond 300 is a vision for an interconnected park system. The exact acreage shown in Richmond 300 need not be replicated.

Question: Is it appropriate at this time for RFP respondents to engage with the community regarding their proposed development concepts?

Response: The City has not prohibited respondents from engaging with the community. The City will host a public meeting for the Finalists the week of May 23.

Question: We understand that contact with members of the selection committee is prohibited. Can you please clarify if that is limited to the specific individuals in question or if that includes the organization each individual represents? E.g., we know that Karol Kain Gary from VCU is on the committee. Does that mean we are not permitted to speak with Ed McLaughlin?

Response: The City has not prohibited respondents from engaging with City and VCU staff who are not members of the Diamond District Evaluation Panel.

Question: We have been approached by individuals/firms who are interested in joining our team and who we believe may be accretive to our effort and the project in general. Is there any restriction as it relates to adding team members at this stage of the process?

Response: Respondents may add team members. Page 5 of the RFAI states, “highlight in the organizational chart any changes made since the RFI submission.”

Question: Is there a specific timeframe that we should look at for the economic impact analysis (e.g., 20 years? 50 years?).

Response: 20 years.

Question: Should respondents use the TOC provided in the RFAI at section 4.2 or the TOC provided in the checklist on page 11?

Response: The submission checklist is not a Table of Contents. Respondents should include a Table of Contents that "indicate[s] significant elements of the RFAI Response by subject and page number."

Question: Please confirm that the RFI language regarding the Arthur Ashe Jr. Athletic Center still applies to the RFAI response.

Response: Yes. The RFI language regarding the Arthur Ashe Jr. Athletic Center still applies to the RFAI response.

Question: Please confirm that the RFI language regarding the Sports Bakers stadium still applies to the RFAI response.

Response: Yes. The RFI language regarding the Sports Backers stadium still applies to the RFAI response.

Question: Using the categories listed under the "Financing Program Spreadsheet" for both rental and for-sale units, is there a baseline, in either % or unit counts, that the evaluation committee expects to see in the RFAI response related to affordable housing under each AMI category listed: 80%, 60%, 50%, and 30% AMI?

Response: Yes. The City would like to see housing affordable to households earning incomes at or below 60 percent of the area median income (AMI), with the goal of having at least 20% of the total units at or below 60% AMI and for-sale units for households between 60% and 80% AMI.

Question: Should the Gilpin Court replacement units mentioned in the RFAI be included in the overall affordable housing numbers in the Financing Program Spreadsheet or under a separate category?

Response: The Gilpin Court replacement and relocation units should be included the total sum of affordable housing units and listed separately as well.

Question: Could you please provide the number of units, unit mix, and income levels of the Gilpin Court units requested to be accommodated in new development at the Diamond?

Response: The exact unit count, unit mix, and income levels for the Gilpin Court relocation and replacement units have not been determined yet. In November 2021, the City and RRHA commenced a HUD-funded Choice Neighborhood Planning process for the Jackson Ward community. The community planning process is launch in April 2022 and the plan will be complete by November 2023. Exhibit B.1-1 of the RRHA's Draft Annual Agency Plan Fiscal

Year 22-23 lists the Housing Needs of Families of RRHA's Waiting Lists. However, Respondents should assume that the greatest need for housing units is for two bedroom units, followed by one bedroom units and then three bedroom units. The majority of Gilpin residents earn less than 30% of the area median income.

Question: Are there any VCU Athletics Village updated plans/drawings/schedule that may be referenced?

Response: Yes, see a site plan and rendering attached at the end of this Addendum.

Question: Is the City willing to provide more detail about priority sustainability goals/targets for the Diamond District?

Response: See minimum community benefits in the RFI appendix and RFI goals related to sustainability. The City is currently developing the RVAgreen 2050 plan which has a goal to reduce greenhouse gas emissions by 45% by 2030 and to zero by 2050. The City's RVA Clean Water Plan is a comprehensive framework for a watershed-wide, water quality-based strategy that will allow Richmond to develop an effective and affordable management plan. The City's Richmond 300 Master Plan provides several strategies in the Thriving Environment chapter to reach goals for cleaner air, cleaner water, and resilient and healthy communities.

Question: Do you have a recommendation on how a respondent should respond to certain RFAI questions that were also covered in the RFI? If a team does not have materially new information to provide, how do you recommend we respond?

Response: Respondents should resubmit information for the RFAI questions that were also covered in the RFI.

Question: Could an extension be given to the parties submitting for the RFAI? An extension of +/- 1-month would enable teams to more fully develop our response to meet the challenges and opportunities of the site and the RFP.

Response: No.

Question: Is it assumed that the private portions of the stadium will be funded by the Flying Squirrels/VCU?

Response: Private portions of the stadium may be funded by a variety of sources, including, but not limited to the Flying Squirrels, VCU, the developer, and other non-city sources.

Question: Page 6 of the preliminary Infrastructure analysis of the Boulevard Site conducted by the Timmons Group in 2016 refers to a trip generation/travel demand analysis. Would it be possible to get a copy of that report?

Response: Yes, see the Prelimiary Infrastructure Analysis of the Boulevard Site (Timmons, April 13, 2016) attached at the end of this Addendum. Note, the report was never finalized, therefore the draft report is attached.

Question: What usage fees do VCU and the squirrels anticipate paying for the stadium? Would it be possible to get a copy of the existing stadium use agreement between the city and team?

Response: The City does not have the authority to speak on behalf of the Flying Squirrels and VCU on the usage fees they anticipate paying for the stadium. The City would like development teams to suggest funding models to pay for the stadium. The existing stadium use agreement is attached to Ordinance 2019-185. The parties have extended the use agreement through the end of the 2024 season.

Question: What are the scoring criteria for judging the RFAI response?

Response: Page 8 of the RFAI states "RFAI Responses will be evaluated based upon the "Evaluation Criteria" set forth on pages 19 and 20 of the RFI.

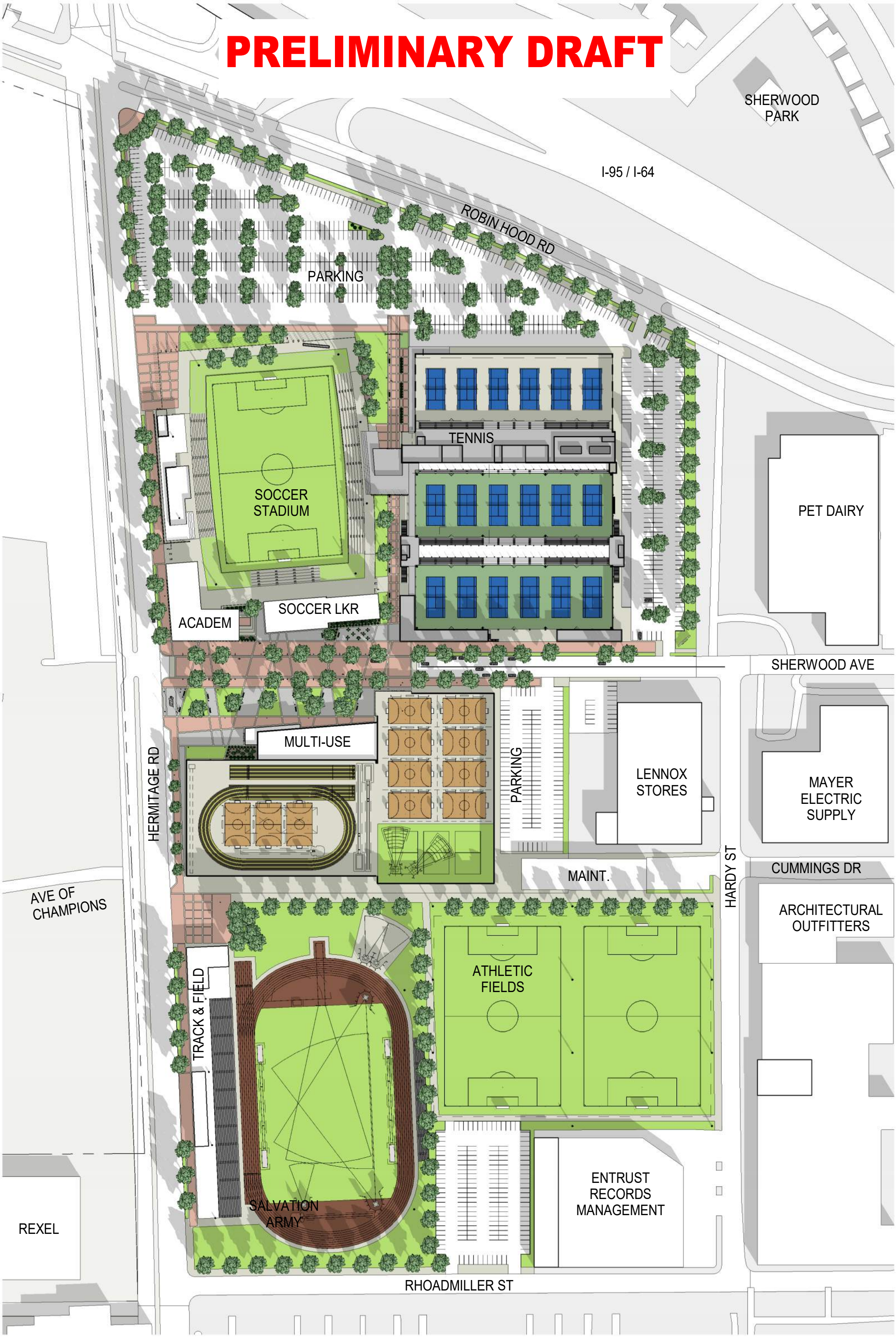
Question: In respect to phasing: it is our understanding the site portions of the site currently occupied by Sports Backers and the Ashe Center cannot be redeveloped until their functions are relocated to the VCU athletic village. Can you provide a timeframe for when VCU anticipates the portions of its athletics village necessary to carry out those functions will be ready?

Response: It is our desire to have the redevelopment of a new Sports Backers stadium within VCU's Athletic Village align with the development of the first phase of redevelopment within the Diamond District which must include a new baseball stadium.

Question: Does the city have a target number for the percentage of overall units that will be designated as affordable?

Response: Yes. The City would like to see housing affordable to households earning incomes at or below 60 percent of the area median income (AMI), with the goal of having at least 20% of the total units at or below 60% AMI and for-sale units for households between 60% and 80% AMI.

PRELIMINARY DRAFT



VCU ATHLETICS VILLAGE MASTER PLAN

OVERALL SITE PLAN

DECEMBER 29, 2020

1" = 160'-0"

PRELIMINARY DRAFT

VCU ATHLETICS VILLAGE MASTER PLAN

AERIAL VIEW

JANUARY 4, 2021

** Image courtesy of Tom Stiles and skyshots.com*

DRAFT
Preliminary Infrastructure Analysis of the Boulevard Site

April 13, 2016

RICHMOND VIRGINIA

TIMMONS GROUP

Table of Contents

Executive Summary

Tripp Umbach, in conjunction with Timmons Group, has previously conducted a Preliminary Market Analysis of the Boulevard Property. The property considered in this analysis consists of roughly 60 acres which is generally bounded by North Boulevard to the west, Interstate 95 to the north, Hermitage Road to the east, and the parcel located at the northwest corner of the intersection of Hermitage Road and Rhoadmiller Street to the south.

That analysis consisted of: stakeholder interviews; a review of secondary market data; an inventory of prior studies; spatial and access analysis of the site; analysis of adjacent neighborhoods; and market potential analysis for the redevelopment of the Boulevard site. After completing this preliminary analysis, Tripp Umbach conducted an economic impact study to measure the direct, indirect, and induced impacts stemming from recommended highest and best uses on the 60 acres of the Boulevard property. These impacts fall within the following categories: companies' expenditures for capital improvements, goods, and services; spending by employees; and spending by vendors and suppliers.

The team has identified and evaluated several potential land uses in order to recommend the development scenario that has the highest and most sustainable economic, employment and government revenue impact for the City of Richmond. The results of the Preliminary Market Analysis for the Boulevard Site is that the most viable option to maximize the potential of the site is an urban scale mixed use development with housing, retail, urban flex space (innovation oriented office space), and lodging.

Figure 1 represents what can be achieved as the highest and best use for the Boulevard site to be implemented over a 20-year timeframe based on current market needs and future projections of demographic changes in the City of Richmond.

Figure 1: 20-year timeframe for cumulative buildout of Boulevard site

	2020 (5 YEARS)	2025 (10 YEARS)	2035 (20 YEARS)
USES	TIME FRAME #1	TIME FRAME #2	TIME FRAME #3
Housing	800 units	2,000 units	4,000 units
Retail/Entertainment	200,000 square ft.	400,000 square ft.	500,000 square ft.
Working Space (Flex)	75,000 square ft.	225,000 squre ft.	375,000 square ft.
Hotel	150 rooms	250 rooms	250 rooms

**Note – Each time frame denotes cumulative totals*

The purpose of this Preliminary Infrastructure Analysis is to assess the existing traffic and transportation system and utility infrastructure conditions to identify the rough order of magnitude scope of work and costs associated with the redevelopment of the Boulevard property to the density outlined above. The

Timmons Group team has researched underground private utilities, including Dominion, Verizon, and others within the right-of-ways within the project limits. By mapping the existing utility infrastructure, we are able to determine future order of magnitude utility infrastructure costs associated with the various land use scenarios. The cost of related infrastructure is an important consideration in determining the economic benefit of future land development.

Existing Water Infrastructure:

As shown on *Exhibit 4: Existing Water Infrastructure*, there is ample water service in the vicinity of the project area to serve the proposed redevelopment density.

One very large transmission water line exists in the project area and is known as the Hanover Transmission line. This is approximately a 36" diameter water line that is not located within City right-of-way. It runs parallel to Hermitage Road, west of the right-of-way, and then turns to the west, south of Sports Backers Stadium. Impacts to this line should be carefully weighed against potential project benefits from its relocation. The City of Richmond estimates that relocation of this line outside of the project footprint would cost approximately $2.3 million.

There are some smaller water lines (4" and 6" diameter) located in the Avenue of Champions and just to the north and south of Sports Backers Stadium. These lines could be easily abandoned/removed without significantly reducing the capacity of the existing water distribution system.

City Staff indicated that the area is expected to have sufficient water pressure to support the redevelopment densities proposed. However, a detailed model of the water distribution system would be needed to confirm water pressures and available fire flows at specific building locations.

Proposed public waterline infrastructure needed to support the proposed development densities are expected to be 8"-16" lines with associated appurtenances, looped throughout the site, located within the roadway infrastructure. Individual service lines would then tap into the surrounding public infrastructure. **The public water infrastructure is anticipated to cost approximately $6.95 million, including the transmission line relocation described above.** This does not include service connections or service connection fees associated with developing individual project areas within the site.

Existing Gas Infrastructure:

As shown on *Exhibit 5: Existing Gas Infrastructure*, there is ample gas service in the vicinity of the project area to serve the proposed redevelopment density. There are some smaller gas lines (between 1" and 4" diameter) located in the Avenue of Champions, and just to the north and south of Sports Backers Stadium. These lines could be easily abandoned/removed to create building pads/envelopes.

Proposed public gas infrastructure needed to support the proposed densities are expected to be 6"-12" lines with associated appurtenances, looped throughout the site, located within the roadway infrastructure. Individual service lines would then tap into the surrounding public infrastructure. **The public gas infrastructure is anticipated to cost approximately $2.10 million.** This does not include service connections or service connection fees associated with developing individual project areas within the site.

Existing Street Light Infrastructure:

As shown on *Exhibit 6: Existing Street Light Infrastructure*, there are City street lights and City electric lines along all of the roadways within and adjacent to the project area. This City power grid serves City street lights and traffic signals, and is independent from the Dominion Virginia Power grid that serves the buildings in the same area. This street light infrastructure along road corridors can stay in place if these roadways are maintained during redevelopment, or easements could be granted if the roadways are re-routed or abandoned. If buildings are proposed that conflict with the current electric lines, then these lines would need to be re-routed or removed, causing additional project expense. Due to the nature of street lights and power lines, if a portion of the corridor is removed, then rewiring of the existing system that remains is typically necessary which also causes additional project expense.

It is also likely that the developer would prefer to place the existing overhead power lines underground as a way to clean-up the aesthetic of the streetscape within the limits of the proposed redevelopment. While this is feasible, it also adds considerable expense to the project.

Proposed public electric infrastructure needed to support the proposed densities is anticipated to cost approximately $4.07 million, but will vary widely depending on the extent of underground versus overhead lines used.

Existing Sewer Infrastructure:

As shown on *Exhibit 7: Existing Sewer Infrastructure*, there are many sewer pipes within and adjacent to the project area. This sewer system is part of the City's Combined Sewer System (CSS), meaning that the sanitary sewer and storm drainage are combined into one sewer system.

No new combined sewers are allowed within the City's system, which means that separate sanitary sewer and storm sewer will need to be installed within the development footprint, connecting to the existing large combined sewers in North Boulevard, Hermitage Road, Robin Hood Road and Sherwood Avenue. Proposed public sanitary sewer infrastructure needed to support the proposed densities are expected to be 8"-12" lines with associated appurtenances, looped throughout the site, located within the roadway infrastructure. Individual service laterals lines would then tap into the surrounding public infrastructure. **The public sanitary sewer infrastructure is anticipated to cost approximately $3.93 million.** This does not include service connections or service connection fees associated with developing individual project areas within the site.

Drainage / Stormwater Management:

As mentioned above, the drainage infrastructure in the project area is part of the City's Combined Sewer System, meaning that the sanitary sewer and storm drainage are combined into one sewer system. Therefore, the drainage (sewer) system is also shown on *Exhibit 7: Existing Sewer Infrastructure*. There is no FEMA Floodplain located within the project area, so there are no redevelopment restrictions based on floodplain limits. There are also no Chesapeake Bay Preservation Areas (CBPAs) (sometimes referred to as Resource Protection Areas (RPAs) or Resource Management Areas (RMAs)) located within the project

area. Since the project area is in the City's Combined Sewer System and there are no CBPA areas within the project area, there are no required water quality best management practices (BMPs) required for redevelopment. This is a significant advantage for redevelopment in this area.

The only stormwater management requirement for the project area is that the post redevelopment stormwater runoff must not exceed the existing condition stormwater runoff. Given that the project area is already vastly impervious (pavement and rooftops), it is likely that the percent impervious will either remain the same, or perhaps be slightly reduced during redevelopment.

Although it is anticipated that limited stormwater detention infrastructure will be required, storm sewers will still be needed to convey water from rooftops and roadways to the downstream system. Proposed public storm sewer infrastructure needed to support the proposed densities are expected to be 15"-48" lines with associated appurtenances, located within the roadway infrastructure. **The public storm sewer infrastructure is anticipated to cost approximately $4.20 million.**

Existing Private Power Infrastructure:

The vast majority of Dominion Virginia Power's infrastructure is overhead, but there are some isolated areas that are primarily underground. This electric infrastructure along road corridors can stay in place if these roadways are maintained during redevelopment, or easements could be granted if the roadways are re-routed or abandoned.

It is also likely that the developer would prefer to place the existing overhead power lines underground as a way to clean-up the aesthetic of the streetscape within the limits of the proposed redevelopment. While this is feasible, it also adds considerable expense to the project.

Dominion Virginia Power will perform a cost analysis for the proposed development to determine the extent of fees for the proposed infrastructure. Typically, there is no charge for residential projects. Commercial project's electric loads are analyzed more closely to determine if there is a possibility to offset or eliminate fees.

Existing Private Communications Infrastructure:

Many of the shared poles for Dominion Virginia Power and the City's electric system also carry Verizon and Comcast communications infrastructure along all of the roadways within and adjacent to the project area. This communications infrastructure directly services the buildings in the area.

The vast majority of the communications infrastructure is overhead, but there are some isolated areas that are underground. It is also likely that the developer would prefer to place the existing overhead communications lines underground as a way to clean-up the aesthetic of the streetscape within the limits of the proposed redevelopment. While this is feasible, it also adds considerable expense to the project.

High-speed internet service is available via DSL and Broadband, but fiber optic service is not currently available in the area.

Traffic and Transportation Analysis

For the purposes of the transportation infrastructure assessment, four (4) development scenarios were evaluated:

1. Mixed use development without Sports Backers Stadium or baseball field;
2. Mixed use development with Sports Backers Stadium only;
3. Mixed use development with Sports Backers Stadium and baseball field (existing locations); and
4. Mixed use development with Sports Backers Stadium and baseball field (clustered at southern end of the site).

Trip generation estimates were calculated for the site using ultimate development densities consistent with the density suggested in the Preliminary Market Analysis, which were adjusted for each of the respective scenarios based on the site availability, and the Institute of Traffic Engineers (ITE) Trip Generation Manual, 9th Edition.

Based on the available information, the redevelopment of the North Boulevard site is projected to generate from 16,000 daily trips (Scenario 4 – two sports venues clustered at the southern end of the site) to 33,000 daily trips (Scenario 1 – full redevelopment of the site without sports venues).

Potential transportation infrastructure improvements and costs were evaluated relative to each of the four (4) design scenarios. Initially, several improvements were identified that will be necessary in conjunction with all of the options. These improvements are listed below:

- Removal of the existing traffic signal at the entrance to The Diamond and installation of a new signal at the Avenue of Champions/ Boulevard West intersection.
- Upgrade North Boulevard between the railroad bridge and the I-95, within the existing road footprint, to accommodate site access.
- Upgrade Hermitage Road between North Boulevard and Hermitage Road, within the existing road footprint, to accommodate site access.
- Upgrade Robin Hood Road between Cummings Drive and Robin Hood Road, within the existing road footprint, to accommodate site access.

Subsequently, costs for each design scenario were compiled based on potential street networks that incorporated a mix of three-lane and four-lane roadways within the project area based on available space and efforts to maintain a traditional grid pattern street network consisting of block measurements of approximately 350’ x 350. A summary of the estimated infrastructure costs for the four scenarios is summarized in the table below.

Potential Transportation Infrastructure Costs

Scenario	Description	Estimated Infrastructure Costs
1	No Stadium/No Ball Field	$ 8,200,000
2	Sports Backers Stadium Only	$ 6,450,000
3	Stadium + Ball Field (existing locations)	$ 3,840,000
4	Stadium + Ball Field (existing locations)	$ 5,510,000

Lastly, the North Boulevard/I-95 and Hermitage Road/I-95 intersections have been identified as likely candidates for future improvement; both intersections are candidates for the installation of roundabouts for operational and aesthetic reasons. The cost for roundabouts at these locations is estimated at $2 million and $1.5 million, respectively. It should be noted that these costs are not included in the estimates shown in the above table and these items can be considered in addition to the North Boulevard redevelopment in future stages when the need and funding are available.

Introduction

Tripp Umbach, in conjunction with Timmons Group, has previously conducted a Preliminary Market Analysis of the Boulevard Property. The property considered in this analysis consists of roughly 60 acres which is generally bounded by North Boulevard to the west, Interstate 95 to the north, Hermitage Road to the east, and the parcel located at the northwest corner of the intersection of Hermitage Road and Rhoadmiller Street to the south.

That analysis consisted of: stakeholder interviews; a review of secondary market data; an inventory of prior studies; spatial and access analysis of the site; analysis of adjacent neighborhoods; and market potential analysis for the redevelopment of the Boulevard site. After completing this preliminary analysis, Tripp Umbach conducted an economic impact study to measure the direct, indirect, and induced impacts stemming from recommended highest and best uses on the 60 acres of the Boulevard property. These impacts fall within the following categories: companies' expenditures for capital improvements, goods, and services; spending by employees; and spending by vendors and suppliers.

The team has identified and evaluated several potential land uses in order to recommend the development scenario that has the highest and most sustainable economic, employment and government revenue impact for the City of Richmond. The results of the Preliminary Market Analysis for the Boulevard Site is that the most viable option to maximize the potential of the site is an urban scale mixed use development with housing, retail, urban flex space (innovation oriented office space), and lodging.

Figure 1 represents what can be achieved as the highest and best use for the Boulevard site to be implemented over a 20-year timeframe based on current market needs and future projections of demographic changes in the City of Richmond.

Figure 1: 20-year timeframe for cumulative buildout of Boulevard site

	2020 (5 YEARS)	*2025 (10 YEARS)*	*2035 (20 YEARS)*
USES	TIME FRAME #1	TIME FRAME #2	TIME FRAME #3
Housing	800 units	2,000 units	4,000 units
Retail/Entertainment	200,000 square ft.	400,000 square ft.	500,000 square ft.
Working Space (Flex)	75,000 square ft.	225,000 squre ft.	375,000 square ft.
Hotel	150 rooms	250 rooms	250 rooms

**Note – Each time frame denotes cumulative totals*

The purpose of this Preliminary Infrastructure Analysis is to assess the existing traffic and transportation system and utility infrastructure conditions to identify the rough order of magnitude scope of work and costs associated with the redevelopment of the Boulevard property to the density outlined above. The

Timmons Group team has researched underground private utilities, including Dominion, Verizon, and others within the right-of-ways within the project limits. By mapping the existing utility infrastructure, we are able to determine future order of magnitude utility infrastructure costs associated with the various land use scenarios. The cost of related infrastructure is an important consideration in determining the economic benefit of future land development.

Utility Infrastructure Analysis

Timmons Group was retained by the City of Richmond to perform a preliminary assessment of existing utility infrastructure in the vicinity of the 60-acre Boulevard site. Included in this scope of work was the following:

- Assemble comprehensive mapping of the study area using City GIS data.
- Collect existing data and evaluate all available information regarding gas, water lines, sewer lines, and City streetlights in order to assess preliminary issues onsite and offsite.
- Meet with the City Staff to collect and evaluate available information regarding existing utility locations and capacity, existing maintenance concerns, proposed capital improvements, and preliminary recommendations to address on-site and off-site utility issues associated with development alternatives.
- Work with City Staff to outline specific preliminary utility needs, including unique wastewater challenges, and the phasing/timing associated with the on-site improvements that the City will ultimately need to evaluate in detail.
- Work with City Staff to outline specific infrastructure re-location and construction needs and the phasing/timing associated with the off-site improvements that the City will ultimately need to evaluate in detail.
- Draft a project memo that summarizes the improvements recommended above, high level "order of magnitude" budgets for on-site and off-site improvements, and the recommended next steps towards refining each of the items.
- Research underground private utilities (Dominion and Verizon, etc.) within the right-of-ways within the project limits and prepare a map that identifies the approximate location of these utilities. The importance of this information is to inform the subsequent utility analysis that will determine order of magnitude utility infrastructure costs associated with the various land use scenarios. The cost of related infrastructure is an important consideration in determining the economic benefit of the various land use scenarios.
- Evaluate the existing private utilities within the project area to determine the relative impact of each land use scenario on the existing infrastructure. Meet with Dominion and Verizon staff to ensure that we have a clear understanding of the existing infrastructure and a general understanding of existing capacity and condition. Rank each of the land use scenarios in their relative impact on private utilities and provide rough order of magnitude costs to make necessary utility adjustments.

Per the scope outlined above, Timmons Group used the City's Geographic Information System to compile a series of exhibits. These exhibits are attached to the memo and are listed below. The proposed project limits are shown in a solid red line on each of the graphics provided.

Exhibit 1: Existing Parcel Boundaries

Exhibit 2: Existing Land Use

Exhibit 3: Existing Zoning

Exhibit 4: Existing Water Infrastructure

Exhibit 5: Existing Gas Infrastructure

Exhibit 6: Existing Street Light Infrastructure

Exhibit 7: Existing Sewer Infrastructure

Underground Utilities Exhibit (H&B Surveying and Mapping)

Based on a review of the existing infrastructure GIS and mapping, site visits, discussions with Dominion, Verizon and Comcast; as well as meetings with Senior Staff at the City of Richmond Department of Public Utilities, the following findings are provided:

Existing Water Infrastructure:

As shown on *Exhibit 4: Existing Water Infrastructure*, there is ample water service in the vicinity of the project area to serve the proposed redevelopment density. The existing larger water lines in the area are typically located within the rights-of-way of the major roadways such as North Boulevard, Hermitage Road, Robin Hood Road and Sherwood Avenue. This water infrastructure can stay in place if these roadway corridors are maintained during redevelopment, or easements could be granted if the roadways are re-routed or abandoned. Easement widths for small water lines (less than 12") would typically be about 16' wide. Easements for larger water lines (greater than 18") would typically be about 30' wide. If buildings are proposed over top of the existing water lines, then the water lines would need to be relocated, causing additional project expense.

One very large transmission water line exists in the project area and is known as the Hanover Transmission line. This is approximately a 36" diameter water line that is highlighted and labelled on the attached graphic. This water line is not located within City right-of-way. It runs parallel to Hermitage Road, west of the right-of-way, and then turns to the west, south of Sports Backers Stadium. Impacts to this line should be carefully weighed against potential project benefits from its relocation. The City of Richmond estimates that relocation of this line outside of the project footprint would cost approximately $2.3 million.

There are some smaller water lines (4" and 6" diameter) located in the Avenue of Champions and just to the north and south of Sports Backers Stadium. These lines could be easily abandoned/removed without significantly reducing the capacity of the existing water distribution system.

City Staff indicated that the area is expected to have sufficient water pressure to support the redevelopment densities proposed. However, a detailed model of the water distribution system would be needed to confirm water pressures and available fire flows at specific building locations.

Proposed public waterline infrastructure needed to support the proposed development densities are expected to be 8”-16” lines with associated appurtenances, looped throughout the site, located within the roadway infrastructure. Individual service lines would then tap into the surrounding public infrastructure. **The public water infrastructure is anticipated to cost approximately $6.95 million, including the transmission line relocation described above. This does not include service connections or service connection fees associated with developing individual project areas within the site.**

Existing Gas Infrastructure:

As shown on *Exhibit 5: Existing Gas Infrastructure*, there is ample gas service in the vicinity of the project area to serve the proposed redevelopment density. The existing larger gas lines in the area are typically located within the right-of-ways of the major roadways such as North Boulevard, Hermitage Road, Robin Hood Road and Sherwood Avenue. This gas infrastructure can stay in place if these roadway corridors are maintained during redevelopment, or easements could be granted if the roadways are re-routed or abandoned. Easement widths for small gas lines (less than 12”) would typically be about 16’ wide. If buildings are proposed over top of the existing gas lines, then these gas lines would need to be relocated, causing additional project expense.

There are some smaller gas lines (between 1” and 4” diameter) located in the Avenue of Champions, and just to the north and south of Sports Backers Stadium. These lines could be easily abandoned/removed to create building pads/envelopes.

Proposed public gas infrastructure needed to support the proposed densities are expected to be 6”-12” lines with associated appurtenances, looped throughout the site, located within the roadway infrastructure. Individual service lines would then tap into the surrounding public infrastructure. **The public gas infrastructure is anticipated to cost approximately $2.10 million. This does not include service connections or service connection fees associated with developing individual project areas within the site.**

Existing Street Light Infrastructure:

As shown on *Exhibit 6: Existing Street Light Infrastructure*, there are City street lights and City electric lines along all of the roadways within and adjacent to the project area. This City power grid serves City street lights and traffic signals, and is independent from the Dominion Virginia Power grid that serves the buildings in the same area. This analysis is limited to the City’s electric system only and Dominion Virginia Power’s grid is discussed in a separate section of this document.

The City’s power infrastructure consists of primary and secondary electric lines, the vast majority of which are overhead but some are isolated in areas that are underground. This street light infrastructure along road corridors can stay in place if these roadways are maintained during redevelopment, or easements could be granted if the roadways are re-routed or abandoned. If buildings are proposed that conflict with

the current electric lines, then these lines would need to be re-routed or removed, causing additional project expense. Due to the nature of street lights and power lines, if a portion of the corridor is removed, then rewiring of the existing system that remains is typically necessary which also causes additional project expense.

It is also likely that the developer would prefer to place the existing overhead power lines underground as a way to clean-up the aesthetic of the streetscape within the limits of the proposed redevelopment. While this is feasible, it also adds considerable expense to the project.

Proposed public electric infrastructure needed to support the proposed densities is anticipated to cost approximately $4.07 million, but will vary widely depending on the extent of underground versus overhead lines used.

Existing Sewer Infrastructure:

As shown on *Exhibit 7: Existing Sewer Infrastructure*, there are many sewer pipes within and adjacent to the project area. This sewer system is part of the City's Combined Sewer System (CSS), meaning that the sanitary sewer and storm drainage are combined into one sewer system. This can be an advantage to redevelopment since the system typically has more than enough capacity to serve dry-weather sanitary sewer flow.

Similar to the water and gas lines in the region, the larger sewer lines are typically located within the right-of-way of the major roadways such as North Boulevard, Hermitage Road, Robin Hood Road and Sherwood Avenue. This sewer infrastructure can stay in place if these roadway corridors are maintained during redevelopment, or easements could be granted if the roadways are re-routed or abandoned. Easement widths for sewer lines would typically be about 30' wide. If buildings are proposed over top of the existing sewer lines, then the sewer lines would need to be relocated, causing additional project expense. Further complicating the sewer infrastructure, this system flows by gravity which means that some of the lines are deeper in the ground, so rerouting these lines can be more difficult and more expensive.

There are some smaller combined sewer system lines (12" to 27" diameter) located in the interior of the "Boulevard Property" (that portion of the site bounded by North Boulevard, Interstate 95 and Hermitage Road where the Diamond and Sports Backers Stadium are currently located). These lines could be easily abandoned/removed to create building pads/envelopes within this area of the site.

No new combined sewers are allowed within the City's system, which means that separate sanitary sewer and storm sewer will need to be installed within the development footprint, connecting to the existing large combined sewers in North Boulevard, Hermitage Road, Robin Hood Road and Sherwood Avenue. Proposed public sanitary sewer infrastructure needed to support the proposed densities are expected to be 8"-12" lines with associated appurtenances, looped throughout the site, located within the roadway infrastructure. Individual service laterals lines would then tap into the surrounding public infrastructure. **The public sanitary sewer infrastructure is anticipated to cost approximately $3.93 million. This does**

not include service connections or service connection fees associated with developing individual project areas within the site.

Drainage / Stormwater Management:

As mentioned above, the drainage infrastructure in the project area is part of the City's Combined Sewer System, meaning that the sanitary sewer and storm drainage are combined into one sewer system. Therefore, the drainage (sewer) system is also shown on *Exhibit 7: Existing Sewer Infrastructure*. The system consists of an enclosed, underground conveyance system, with curb and grate inlets located throughout the watershed, but typically along roadway right-of-ways. There is no FEMA Floodplain located within the project area, so there are no redevelopment restrictions based on floodplain limits.

There are also no Chesapeake Bay Preservation Areas (CBPAs) (sometimes referred to as Resource Protection Areas (RPAs) or Resource Management Areas (RMAs)) located within the project area. Since the project area is in the City's Combined Sewer System and there are no CBPA areas within the project area, there are no required water quality best management practices (BMPs) required for redevelopment. This is a significant advantage for redevelopment in this area.

The only stormwater management requirement for the project area is that the post redevelopment stormwater runoff must not exceed the existing condition stormwater runoff. Given that the project area is already vastly impervious (pavement and rooftops), it is likely that the percent impervious will either remain the same, or perhaps be slightly reduced during redevelopment. If this is the case, then it is reasonable to conclude that overall stormwater runoff will remain the same or will be slightly reduced. The only existing large areas of permeable surface in the project area are the playing surface at The Diamond and the interior of the track at Sports Backers Stadium. If these areas are converted to impervious surface without offsetting impervious to pervious compensation elsewhere in the project, then some stormwater detention may be required for these specific locations.

No new combined sewers are allowed within the City's system, which means that separate sanitary sewer and storm sewer will need to be installed within the development footprint, connecting to the existing large combined sewers in North Boulevard, Hermitage Road, Robin Hood Road and Sherwood Avenue. Although it is anticipated that limited stormwater detention infrastructure will be required, storm sewers will still be needed to convey water from rooftops and roadways to the downstream system. Proposed public storm sewer infrastructure needed to support the proposed densities are expected to be 15"-48" lines with associated appurtenances, located within the roadway infrastructure. **The public storm sewer infrastructure is anticipated to cost approximately $4.20 million.**

Existing Private Power Infrastructure:

As shown on *Exhibit 6: Existing Street Light Infrastructure*, there are City street lights and City electric lines along all of the roadways within and adjacent to the project area. This City power grid serves City street lights and traffic signals, and is independent from the Dominion Virginia Power grid that serves the

buildings in the area. Many of the poles are shared between the City's infrastructure and Dominion's infrastructure. The following analysis is limited to the Dominion Virginia Power electric system.

The vast majority of Dominion Virginia Power's infrastructure is overhead, but there are some isolated areas that are primarily underground. This electric infrastructure along road corridors can stay in place if these roadways are maintained during redevelopment, or easements could be granted if the roadways are re-routed or abandoned. If buildings are proposed that conflict with the current electric lines, then these lines would need to be re-routed or removed, causing additional project expense. Due to the nature of power lines, if a portion of the corridor is removed, then rewiring of the existing system that remains is typically necessary, causing additional project expense.

It is also likely that the developer would prefer to place the existing overhead power lines underground as a way to clean-up the aesthetic of the streetscape within the limits of the proposed redevelopment. While this is feasible, it also adds considerable expense to the project.

Dominion Virginia Power will perform a cost analysis for the proposed development to determine the extent of fees for the proposed infrastructure. Typically, there is no charge for residential projects. Commercial project's electric loads are analyzed more closely to determine if there is a possibility to offset or eliminate fees.

Existing Private Communications Infrastructure:

Many of the shared poles for Dominion Virginia Power and the City's electric system also carry Verizon and Comcast communications infrastructure along all of the roadways within and adjacent to the project area. This communications infrastructure directly services the buildings in the area.

The vast majority of the communications infrastructure is overhead, but there are some isolated areas that are underground. Communications infrastructure along road corridors can stay in place if these roadways are maintained during redevelopment, or easements could be granted if the roadways are re-routed or abandoned. If buildings are proposed that conflict with the current communications lines, then these lines would need to be re-routed or removed, causing additional project expense. Due to the nature of communications lines, if a portion of the corridor is removed, then rewiring of the existing system that remains is typically necessary which also causes additional project expense.

It is also likely that the developer would prefer to place the existing overhead communications lines underground as a way to clean-up the aesthetic of the streetscape within the limits of the proposed redevelopment. While this is feasible, it also adds considerable expense to the project.

High-speed internet service is available via DSL and Broadband, but fiber optic service is not currently available in the area.

Traffic and Transportation Analysis

Existing Conditions

Major roads within the study area include the following:

- Interstate 95/64 – a 6-lane, limited-access facility with a posted speed limit of 60 mph that carries approximately 125,000 vehicles per day (VPD). Access to/from the study area from Interstate 95/64 is provided at three (3) locations:
    - Southbound off-ramp and northbound on-ramp intersect North Boulevard at a signalized intersection north of the overpass.
    - Northbound off-ramp intersects Hermitage Road north of the overpass at an unsignalized intersection.
    - Southbound on-ramp intersects Robin Hood Road east of the signalized Hermitage Road/Robin Hood Road intersection.
- **West Broad Street (U.S. Route 250)** – a 6-lane, median divided facility with a posted speed limit of 35 mph that carries approximately 24,000 VPD. West Broad Street runs east-west, south of the study area. Direct vehicular access to the study area is not available, however it is anticipated that West Broad Street will be impacted by re-development of the subject site.
- **North Boulevard (Route 161)** – a 4-lane, median divided facility with a posted speed limit of 35 mph that carries approximately 20,000 VPD. North Boulevard runs north-south along the western study area boundary and provides a direct access to Interstate 95/64 from Broad Street (U.S. Route 250). There are two (2) signalized intersections along North Boulevard adjacent to the study area, one at the main entrance to the Diamond and a second at Robin Hood Road.
- **Hermitage Road** – a 4-lane, median divided facility with a posted speed limit of 35 mph that carries approximately 10,000 VPD. Hermitage Road runs north south, parallel to Broad Street, and essentially bisects the study area. There are two (2) signalized intersections along Hermitage Road adjacent to the study area at Sherwood Road and Robin Hood Road.
- **Robin Hood Road** – a 4-lane, median divided facility with a posted speed limit of 35 mph that carries approximately 15,000 VPD. Robin Hood Road runs east-west through the northern portion of the study area and serves as the primary travel route for the traffic associated with the aforementioned Interstate 95/64 northbound off-ramp and southbound on-ramp. Traffic signals are present at the intersections of Robin Hood Road and North Boulevard.

Evaluated Development Scenarios

For the purposes of the transportation infrastructure assessment, four (4) development scenarios were evaluated:

5. Mixed use development without Sports Backers Stadium or baseball field;
6. Mixed use development with Sports Backers Stadium only;
7. Mixed use development with Sports Backers Stadium and baseball field (existing locations); and
8. Mixed use development with Sports Backers Stadium and baseball field (clustered at southern end of the site).

Trip Generation Potential

Trip generation estimates were calculated for the site using ultimate development densities consistent with urban redevelopment of this nature, which were adjusted for each of the respective scenarios based on the site availability, and the Institute of Traffic Engineers (ITE) Trip Generation Manual, 9th Edition.

Based on the available information, the redevelopment of the North Boulevard site is projected to generate from 16,000 daily trips (Scenario 4 – two sports venues clustered at the southern end of the site) to 33,000 daily trips (Scenario 1 – full redevelopment of the site without sports venues).

A summary of the individual scenarios along with the corresponding trip generation potential for each is summarized below in Table 1.

Table 1
Trip Generation Estimates

Scenario 1: No Stadium/No Ball Field

LAND USE	ITE CODE	AMOUNT	UNITS	WEEKDAY ADT	AM PEAK HOUR IN	AM PEAK HOUR OUT	AM PEAK HOUR TOTAL	PM PEAK HOUR IN	PM PEAK HOUR OUT	PM PEAK HOUR TOTAL
General Office	710	200,000	SF (GFA)	2,223	293	40	333	51	251	302
Hotel	310	125	Occupied Rooms	1,115	49	35	84	43	45	88
Shopping Center	820	670,000	SF (GFA)	23,382	308	189	497	1,029	1,114	2,143
Apartment (Multi-Family)	220	1,610	DU	9,880	159	634	793	587	316	903
				33,262	***467***	***823***	***1,290***	***1,616***	***1,430***	***3,046***

Scenario 2: Sports Backers Stadium Only

LAND USE	ITE CODE	AMOUNT	UNITS	WEEKDAY ADT	AM PEAK HOUR IN	AM PEAK HOUR OUT	AM PEAK HOUR TOTAL	PM PEAK HOUR IN	PM PEAK HOUR OUT	PM PEAK HOUR TOTAL
General Office	710	200,000	SF (GFA)	2,223	293	40	333	51	251	302
Hotel	310	125	Occupied Rooms	1,115	49	35	84	43	45	88
Shopping Center	820	442,500	SF (GFA)	17,856	239	147	386	779	844	1,623
Apartment (Multi-Family)	220	1,150	DU	7,093	113	454	567	423	228	650
				24,948	***353***	***601***	***953***	***1,202***	***1,071***	***2,273***

Scenario 3: Sports Backers Stadium + Ball Field (Existing Locations)

LAND USE	ITE CODE	AMOUNT	UNITS	WEEKDAY ADT	AM PEAK HOUR IN	AM PEAK HOUR OUT	AM PEAK HOUR TOTAL	PM PEAK HOUR IN	PM PEAK HOUR OUT	PM PEAK HOUR TOTAL
General Office	710	200,000	SF (GFA)	2,223	293	40	333	51	251	302
Hotel	310	125	Occupied Rooms	1,115	49	35	84	43	45	88
Shopping Center	820	375,750	SF (GFA)	16,055	217	133	350	698	756	1,454
Apartment (Multi-Family)	220	530	DU	3,335	53	211	263	201	108	309
				19,391	***269***	***344***	***613***	***899***	***865***	***1,764***

Scenario 4: Sports Backers Stadium + Ball Field (Southern Cluster)

LAND USE	ITE CODE	AMOUNT	UNITS	WEEKDAY ADT	AM PEAK HOUR IN	AM PEAK HOUR OUT	AM PEAK HOUR TOTAL	PM PEAK HOUR IN	PM PEAK HOUR OUT	PM PEAK HOUR TOTAL
General Office	710	200,000	SF (GFA)	2,223	293	40	333	51	251	302
Hotel	310	125	Occupied Rooms	1,115	49	35	84	43	45	88
Shopping Center	820	145,000	SF (GFA)	8,646	121	74	196	369	400	768
Apartment (Multi-Family)	220	1,180	DU	7,274	116	466	582	433	233	667
				15,921	***238***	***540***	***777***	***802***	***633***	***1,435***

Distribution of Site-Related Traffic

Traffic to/from the site will be noticed primarily along the North Boulevard, Robin Hood Road (adjacent to the site) and Hermitage Road. Based on the context of the project and existing traffic data, site traffic is anticipated to be distributed as follows:

- 60% will utilize North Boulevard;
- 25% will utilize Hermitage Road; and
- 15% will utilize Robin Hood Road

Given this distribution of site-generated traffic and the existing volumes along each of the adjacent facilities, it is recommended that these facilities maintain their 4-lane cross-sections and that capacity be maximized through implementation of an access management plan.

Transportation Infrastructure Improvements

Potential transportation infrastructure improvements and costs were evaluated relative to each of the four (4) design scenarios.

Initially, several improvements were identified that will be necessary in conjunction with all of the options. These improvements are listed below:

- Removal of the existing traffic signal at the entrance to The Diamond and installation of a new signal at the Avenue of Champions/ Boulevard West intersection.
- Upgrade North Boulevard between the railroad bridge and the I-95, within the existing road footprint, to accommodate site access.
- Upgrade Hermitage Road between North Boulevard and Hermitage Road, within the existing road footprint, to accommodate site access.
- Upgrade Robin Hood Road between Cummings Drive and Robin Hood Road, within the existing road footprint, to accommodate site access.

Subsequently, costs for each design scenario were compiled based on potential street networks that incorporated a mix of three-lane and four-lane roadways within the project area based on available space and efforts to maintain a traditional grid pattern street network consisting of block measurements of approximately 350' x 350. A summary of the estimated infrastructure costs for the four scenarios is summarized below in Table 2.

Table 2
Potential Transportation Infrastructure Costs

Scenario	Description	Estimated Infrastructure Costs
1	No Stadium/No Ball Field	$ 8,200,000
2	Sports Backers Stadium Only	$ 6,450,000
3	Stadium + Ball Field (existing locations)	$ 3,840,000
4	Stadium + Ball Field (existing locations)	$ 5,510,000

Lastly, the North Boulevard/I-95 and Hermitage Road/I-95 intersections have been identified as likely candidates for future improvement; both intersections are candidates for the installation of roundabouts for operational and aesthetic reasons. The cost for roundabouts at these locations is estimated at $2 million and $1.5 million, respectively. It should be noted that these costs are not included in the estimates shown in Table 2 and these items can be considered in addition to the North Boulevard redevelopment in future stages when the need and funding are available.

Bicycle and Pedestrian Connectivity Analysis

Several key attractions and neighborhoods are within a short walk or bicycle ride of the Boulevard site.

Origin/destination	Walking (minutes)	Bicycling (minutes)
Scott's Addition	<15	<5
Richmond Technical Center	<15	<5
Redskins Training Facility	<15	<5
Children's Museum / Science Museum	<25	<10
Virginia Union University	<25	<10
Museum District / Fan District	<25	<10
Northside	<25	<10

The City's Bicycle Master Plan includes several findings and recommendations relevant to the future redevelopment of properties along North Boulevard.

- There is a high demand for bicycling on the least comfortable corridors, including Boulevard between Cary Street and Leigh Street.
- 85% of survey respondents want to use bikes for transportation, but need better infrastructure in order to feel safe.
- Survey respondents think the City of Richmond should create a safer and easier environment for bicycling, and should provide bike infrastructure within the existing street network. (Road diets, for example.)
- 82% said bike parking would make them more likely to visit a business.
- The Brookland Parkway road diet was identified as an important project to calm neighborhood traffic and create space for buffered bike lanes.
- The Hermitage Road road diet was identified as an important project to calm neighborhood traffic and create space for buffered bike lanes.
- Boulevard is an official bike route. It is also clearly identified by bicycle wayfinding signage and pavement markings but survey respondents do not feel safe riding bikes on Boulevard.
- Northside was identified as a high-demand neighborhood for bicycling.
- Buffered bike lanes are repeatedly identified as a tactic to encourage more bicycling on busy city streets.

The City and GRTC are in the midst of a comprehensive upgrade to the transit system including Bus Rapid Transit (BRT). Routing, station placement, schedules, and more will be evaluated over the next several

months and separate project paths and budgets are anticipated for such work. Walking and bicycling to/from transit stops is a critical element of a multimodal system and existing connectivity to the multi-modal routes are already in place. Proposed development on the Boulevard site should acknowledge connectivity to all forms of transportation, but no significant costs are associated with the connectivity outside of the scope already discussed in this analysis.

Streetscape Analysis

Streetscapes are a vital component of any urban development and especially important at the Boulevard site where a healthy mix of uses (retail, residential, restaurants, office, and flex space) are anticipated with redevelopment. Along with other major site development costs, the following summary outlines the city of Richmond's anticipated cost of development for any proposed streetscape associated with the Boulevard project. The potential costs associated with all streetscape elements include items necessary from the back of the curb to the face of the buildings on each block.

Elements evaluated include the following:

- Concrete sidewalks and specialty paving
- Street trees, tree wells, and structural soils
- Site furnishings such as benches, trash receptacles, bollards, and bicycle racks
- Pedestrian level street lighting
- Directional signage
- Bus shelters

The method for determining these costs are based on a typical street section of 100 linear feet. By understanding the improvements necessary within this section, a per linear foot cost is easily attained. **The projected streetscape cost is anticipated to be in the neighborhood of $450 per linear foot of street in the proposed development.** Various scenarios for redevelopment may include one of the following, or some combination thereof:

- Scenario A: Construction of a new baseball stadium w/ mixed-use surrounding on the 60-acre site
- Scenario B: Sports Backers stadium serving as an asset w/ mixed-use surrounding on the 60-acre site
- Scenario C: Neither Sports Backers stadium nor a baseball stadium remain on site and the entire 60-acre site is redeveloped w/ mixed-use

Based on a typical street network in this type of development, Scenario A would require around 17,000 linear feet of streetscape, Scenario B would be in the neighborhood of 14,000 linear feet of streetscape, and Scenario C would be around 19,000 linear feet of streetscape. Regardless of the length of projected street improvements, the per linear foot cost is projected to be the same.

In addition to the future street network within the 60-acre site, improvements will be necessary to existing streetscapes at the perimeter in order to maintain a high-quality, unified development. North Boulevard, Hermitage Road, and Robin Hood Road will all need at least half of the streetscape revitalized and improved at one-half the per linear foot cost above, since only half of these streets front the development.

Regardless of the direction that the city takes toward development, the streetscape costs are assumed to range from $6.5 million to $8.5 million.

Parks and Open Space Analysis

At the heart of any thriving neighborhood or mixed-use development, parks and open space should be prevalent, creating vibrant hubs of activity and ample recreation space. People who live within walking or viewing distance of a park are likely to have a greater quality of life, improved health, reduced stress levels, and even higher property values. National best practices for urban planning outline the need for at least 5% to 8% green space per acre developed. Redevelopment of the 60-acre site on the Boulevard would require 5% to 8% open space dedicated to parks, open space, plazas, and play areas. The city of Richmond should plan for this open space concurrent with the development of the street network and other infrastructure from the outset.

There are many factors that help shape the quality of life that City residents desire in their park network. Elements evaluated in the parks and open space cost include the following:

- Concrete sidewalks and specialty paving
- Seat walls, planters, fire pits, and shade structures
- Water features or sculptural elements
- Playgrounds and tot lots
- Site furnishings such as benches, trash receptacles, bollards, and bicycle racks
- Pedestrian level lighting
- Drinking fountains
- Park signage
- Landscape plants and lawn areas

The method for determining these costs are based on a comprehensive urban park program for 8% of the site acreage. By understanding the improvements necessary within this acreage, a per acre cost is easily attained. **The projected park and open space cost is anticipated to be in the neighborhood of $650,000 per acre for the proposed development. At 8% of 60 acres, the total park and open space would be assumed to be 4.8 acres, for a total City investment of around $2.25 million.**

Conclusions and Recommendations

It is evident from this analysis that there are infrastructure investments that will be required to support redevelopment on the Boulevard property. These investments will partially off-set the additional revenue that will be generated through redevelopment, but are much less in magnitude than the expected revenue generated from redevelopment.

The infrastructure investments will need to be closely coordinated with the redevelopment process. It is very likely that the implementation of infrastructure improvements can be phased as redevelopment takes place. This analysis recommends that the information herein be shared with prospective developers, and used to negotiate whether these costs and scope of work will be City or Developer responsibility.