



Final Environmental Impact Statement

Volume I

*for the
Construction and
Operation of a*

PROPOSED STADIUM

Washington, D.C.

October, 1993

Executive Summary

Purpose and Need for Action

The United States Department of the Interior, National Park Service, and the District of Columbia Government have prepared this Final Environmental Impact Statement (EIS) to analyze the potential environmental consequences of the construction and operation of a stadium in Anacostia Park in the District of Columbia. The information presented in this EIS will serve to assist appropriate public officials and decision-makers in their deliberations on proposed legislation that would authorize implementation of the action that is the subject of this EIS. The purpose of the action that is the subject of this EIS is to provide a stadium designed primarily for football with a capacity of 78,600 seats, optimal sightlines, luxury box suites, and modern spectator amenities in Washington, D.C.

The proposed site of the new stadium is located north of Robert F. Kennedy Memorial Stadium (RFK Stadium) within an area currently utilized for stadium event parking. Existing vehicular parking spaces supporting RFK Stadium would be reconfigured and reconstructed within the limits of the approximately 190-acre site area to accommodate up to 18,500 automobiles, 200 buses, and other related vehicles.

The proposed stadium and associated parking lots would be located on federal land under the jurisdiction of the National Park Service. Under current authorization by Congress, this land is leased to the District of Columbia pursuant to the D.C. Stadium Act of 1957, as amended in 1986, to accommodate RFK Stadium and related parking facilities.

The professional football franchise in Washington, D.C., is committed to playing its home games in a stadium with an enlarged capacity, improved sightlines, and upgraded seating and amenities. The current home facility of the team, RFK Stadium, was designed primarily for baseball and its configuration does not have optimal sightlines for football. The seating capacity of RFK Stadium is also considerably less than that found in contemporary football stadiums. For these reasons, the corporations that operate the Washington, D.C. franchise of the National Football League (NFL) have offered to construct a larger stadium designed primarily for football in Washington, D.C., with private funds.

One of the District of Columbia's primary economic development objectives as set forth by the Mayor is to keep the Washington professional football franchise in the District because of the mutually beneficial, long-standing relationship between the team and the District. The NFL franchise generates substantial revenues for the District through direct and indirect expenditures both on game days and throughout the year. In addition, the local team is extremely popular and serves as a unifying force for the diverse national and international cultures of Washington.

Framework for Environmental Review

The National Park Service and the District of Columbia Government are jointly responsible for the environmental analysis and documentation of the proposed stadium. The National Capital Planning Commission (NCPC) is a cooperating agency for the purposes of preparing the EIS. The Draft EIS was reviewed by Federal and District resource agencies as well as citizen organizations and private individuals.

The EIS has been prepared in accordance with the National Environmental Policy Act of 1969 (NEPA), as implemented by the Council on Environmental Quality and the National Park Service. The EIS is also in accordance with the D.C. Environmental Policy Act of 1989. NEPA requires that a full evaluation be made of the environmental setting and all direct, indirect, and cumulative impacts generated by the proposed and alternative actions to assist federal agencies in the decision-making process.

This Final EIS includes the following:

- A statement of the purpose of and need for the action that is the subject of this EIS.
- A description of the Proposed Action and Alternative Actions.
- A description of the environment affected by the Proposed Action and Alternative Actions.
- An analysis of the potential environmental consequences of the Proposed Action and Alternative Actions.
- An analysis of the cumulative impacts on the environment of the Proposed Action and Alternative Actions as well as other known planned or potential projects in the area.
- A description of recommended mitigation measures with implementation responsibility, monitoring responsibility, and schedule for implementation.

Public participation was sought continuously throughout the environmental review process. The scoping effort for this EIS consisted of verbal and written comments, including questions, concerns, and criticisms, received from public resource agencies, local citizen groups, and interested individuals. Follow-up meetings with certain agencies and two public scoping meetings were held in April 1993. During the 60-day public review period for the Draft EIS, written comments were requested and a public review meeting was held in June. In addition, meetings were held with local communities, appropriate Advisory Neighborhood Commissions, and the business community.

Consideration and Selection of Alternatives

The need for an expanded, modern facility for the local professional football team was first identified in 1988. Since that time, numerous sites throughout the Washington metropolitan area have been investigated as potential locations for a new stadium, with several opportunities for public and agency participation. The analysis in the EIS has been limited to reasonable alternative sites within the District of Columbia because such sites best satisfy the economic development objectives of the District and the desire of the football franchise to remain in the District of Columbia.

All potential vacant or underutilized parcels within the District of Columbia encompassing at least 60 acres were initially considered. Most of the potential sites of sufficient size to accommodate a stadium already were occupied by monuments and other significant buildings, or included historic parks and protected areas, and were therefore not suitable. Seven sites, however, were identified for more intensive evaluation.

The seven potential locations for a new stadium in Washington, D.C., were evaluated based on objective and analytical criteria, including site size, accessibility, planning considerations, natural features, and land availability. Following the primary evaluation, three sites were identified as the most viable sites for a new stadium: Bolling Air Force Base/Anacostia Naval Air Station, the RFK Stadium/D.C. Armory site, and the Parking Lot Northeast of RFK Stadium.

The three alternative sites for a new stadium in the District were analyzed in greater detail according to more qualitative secondary criteria. The Bolling site was rejected because (1) land acquisition would be difficult given the well-developed plans prepared by the Department of Defense, which had ownership of the site, and (2) the Bolling site was deemed to have far less accessibility to Metrorail and highway systems as compared to the two sites near RFK Stadium. Ultimately, the Parking Lot Northeast of RFK Stadium site was identified as the preferred site because the RFK Stadium/D.C. Armory site would require the demolition of a number of privately-owned residences, as well as the D.C. Armory, a valuable and necessary public facility. In addition, the Parking Lot Northeast of RFK Stadium site is well-located and easily accessible, compatible with the existing uses and adjacent facilities, and consistent with current "event day" experiences.

During 1992, in response to public concerns about the use of portions of Langston Golf Course and Kingman Island for parking and plans to fill a portion of Kingman Lake, the preferred site was modified and is now identified as the Parking Area North of RFK Stadium. As a result, the Parking Area North of RFK Stadium site (as opposed to the Parking Lot Northeast of RFK Stadium site) does not use any portions of Langston Golf Course or Kingman Island, and no portion of Kingman Lake would be filled.

In 1993, as part of this EIS, current documents on existing land use, environmental, and planning issues were re-examined to determine the current status of the three alternative sites. Again, the Parking Area North of RFK Stadium site was selected as the preferred site for a new stadium. The site is:

- Well-served by Metrorail and the Interstate highway system;
- Consistent with land use plans for the site;
- Currently authorized for the use of a stadium (RFK Stadium) and related parking purpose;
- Adjacent to the existing stadium and existing infrastructure on the site including established parking areas, pedestrian paths, Metrorail facilities, sanitary sewers, and other utilities;
- Consistent with current "event day" noise, safety, and security conditions; and
- Flat, vacant, and of adequate size to accommodate the proposed program.

The boundaries of the Parking Area North of RFK Stadium site are identical to the proposed site area described in the February, 1993 Memorandum of Understanding between the D.C. Government and JKCSI-PFI. The proposed site area does not include portions of Langston Golf Course, Kingman Island, or Kingman Lake.

Once the preferred location was selected, several alternative actions considered or proposed for portions of the site area adjacent to RFK Stadium were evaluated. In addition to the Kingman Fill Alternative, the Parking Lot Northeast of RFK Stadium Alternative, and the RFK Stadium/D.C. Armory Alternative, two other alternatives, including the RFK Stadium Demolition/Replacement Alternative, and the RFK Stadium Expansion/Renovation Alternative, would be located within the area surrounding RFK Stadium. The RFK Stadium Demolition/Replacement Alternative was eliminated as a viable alternative for operational and physical reasons. The RFK Stadium Expansion/Renovation Alternative was evaluated as an alternative action in the EIS.

Description of the Alternative Actions

Proposed Action

The Proposed Action includes the construction and operation of a new football stadium to be designed and built consistent with current NFL trends, and with a seating capacity of approximately 78,600 persons, including 59,300 stadium seats, 15,000 club seats, and 4,300 executive suite (sky box) seats. Existing vehicular parking spaces would be reconfigured and reconstructed within the limits of the approximately 190-acre site area to accommodate up to 18,500 automobiles, 200 charter buses, and other vehicles (security, emergency, police, etc.).

The proposed stadium would be built with private funds by JKC Stadium, Inc. (JKCSI). The estimated cost of the proposed stadium structure is \$160 million in 1993 dollars. The District of Columbia would issue revenue bonds for the construction of all infrastructure and reconfigured parking areas in the site area surrounding the proposed stadium. The payment of these bonds would be paid for by tax revenues generated by the stadium. The estimated cost of the proposed infrastructure improvements is \$46 million. This figure does not include the potential cost for contaminated soil removal. The cost for removal of contaminated soils disturbed during construction would likely be the responsibility of the federal government, which owns the site, and other parties to be determined before construction begins.

The proposed site plan would:

- Extend the urban grid pattern of the surrounding neighborhood into the site area;
- Expand and enhance open space along the edge of the Anacostia River;
- Provide a 10-foot landscaped buffer along the east side of Oklahoma Avenue. (However, a mitigation measure has been identified that would expand the landscaped buffer along Oklahoma Avenue to a width of 50 to 200 feet, thereby preserving 2.5 to 10 acres of open space. Such a mitigation measure would reduce the potential impacts of the Proposed Action on the adjacent neighborhood);
- Relocate the existing playground within parking area 7 to a site located within the Kingman Park neighborhood;
- Replace the RFK Stadium auxiliary field at Eastern High School;
- Relocate and depress the westbound spur of Whitney A. Young Bridge/C Street;
- Modify the ring/surface road encircling RFK Stadium; and
- Realign an existing stormwater sewer line around the proposed stadium.

The proposed site plan would not result in the taking of homes or businesses. The proposed plan would also not disturb the Anacostia River shoreline or fill any portion of Kingman Lake. Langston Golf Course and Kingman Island would not be utilized for stadium-related parking. The Proposed Action is not dependent on the proposed Barney Circle Freeway Modification Project.

The proposed stadium would be an oval-shaped structure with three primary seating levels and a below-grade playing field. The overall height of the structure would be approximately 163 feet (or approximately 175 feet above sea level). The stadium would be encircled by a pedestrian plaza. Columns supporting the pedestrian plaza would be located approximately 28 feet from the Anacostia River shoreline. The foundation wall would be located approximately 48 feet from the Anacostia River shoreline.

The proposed stadium is scheduled to be completed in time for part of the 1995 football season. The proposed stadium is expected to be used for approximately 18 major events per year; the schedule for the proposed stadium would be coordinated with RFK Stadium and the D.C. Armory so that major events would not be held simultaneously at the proposed stadium, RFK Stadium, or the D.C. Armory. RFK Stadium would be maintained and used approximately 18 times per year for community-based events, soccer and other sporting events, and entertainment events. RFK Stadium could potentially be used for major league baseball should Washington obtain a baseball franchise.

The construction of the stadium, site infrastructure and parking is projected to directly generate more than 1,500 construction-related jobs over 23 months. JKCSI has pledged to make a good faith effort when hiring and contracting the construction-related jobs and contracts by (1) awarding to Minority Business Enterprises (MBE) contracts and/or subcontracts whose dollar value is at least 35 percent of the total cost of new stadium construction; and (2) having District residents constitute at least 51 percent of all new hires for full-time and part-time jobs in connection with each of the design, planning, construction, and operation activities of the new stadium. In addition to those jobs directly created by the Proposed Action, approximately 1,815 additional jobs would be indirectly created through economic multipliers.

Construction activities would occur during two shifts between the hours of 7 am to 7 pm. Construction of the proposed stadium and site plan is scheduled to commence in December 1993 and be completed in October 1995.

RFK Stadium Expansion/Renovation Alternative

RFK Stadium currently provides seating for approximately 56,880 spectators but does not currently have luxury suites. Based on a study commissioned by the D.C. Armory Board, an expanded and renovated RFK Stadium would provide 78,600 seats, including 145 luxury suites or 1,752 seats. An outer ring around RFK Stadium would be developed to accommodate two new seating decks, circulation and support spaces, and concession facilities. The proposed renovation would include providing additional restrooms and concession facilities, expanding and upgrading press facilities, and renovating team, administrative and service facilities. Existing vehicular parking spaces would be reconfigured and reconstructed within the limits of the approximately 190-acre site to accommodate up to 18,500 automobiles, 200 charter buses, and other related vehicles (security, emergency, police, etc.).

The proposed expansion and renovation of RFK Stadium would require the use of public funds and be the financial responsibility of the District of Columbia Government. The D.C. Armory Board would continue to own, operate, and maintain the stadium. The estimated cost of the expanded and renovated stadium is \$80 million and the estimated cost of the site infrastructure and parking improvements is \$36 million, for a total cost of approximately \$116 million. The site improvement cost does not include the potential cost of contaminated soil removal. The cost for removal of contaminated soils disturbed during construction would

likely be the responsibility of the federal government, which owns the site, and the District Government, which would expand and renovate RFK Stadium.

The site plan for the RFK Stadium Expansion/Renovation Alternative would:

- Extend the urban pattern of the surrounding neighborhood into the site area;
- Expand and enhance open space along the edge of the Anacostia River;
- Provide a 12-acre landscape buffer of varying width along the east side of Oklahoma Avenue. (Assuming that an additional 2.5 to 10 acres of open space could be preserved as with the mitigation measure identified for the Proposed Action, 14.5 to 17 acres of open space could be retained along Oklahoma Avenue and, possibly, 5 acres of grass parking could be established along Benning Road);
- Retain the existing bike trail, RFK Stadium auxiliary field, and existing playground adjacent to Oklahoma Avenue; and
- Modify the ring/surface road encircling RFK Stadium.

The alternative site plan would not result in the taking of homes or businesses. The plan would also not disturb the Anacostia River shoreline or fill any portion of Kingman Lake. Langston Golf Course and Kingman Island would not be utilized for stadium-related parking. The RFK Stadium Expansion/Renovation Alternative is not dependent on the proposed Barney Circle Freeway Modification Project.

The expanded stadium would have a circular footprint with a new outer ring. The structure would expand in width by 120 feet, and its overall height would be approximately 132 feet (or 178 feet above sea level).

As part of the expansion and renovation of RFK Stadium, new or completely reconstructed facilities would include escalators and elevators, concession and food preparation areas, heating, ventilating and air conditioning systems, restrooms, storage areas, press facilities, video and spectator information systems, administrative facilities, sprinkler and smoke exhaust systems, and coaches' and players' locker rooms and training facilities.

Modern football stadiums also provide a variety of seating options, such as luxury suites and club levels, that generate the income levels necessary to successfully operate an NFL franchise. These options do not exist presently in RFK Stadium and would only be partially achievable in an expanded and renovated RFK Stadium. It should be noted that Washington's professional football franchise may decide to relocate outside of the District of Columbia or the Washington metropolitan area as a result of this alternative.

The expansion and renovation of RFK Stadium would be scheduled to take place over a two-year time period. According to preliminary studies, the football and event schedule would not

necessarily be interrupted by the construction. However, the construction would impact the season by reducing existing seating capacity and inconveniencing the team and spectators during the two-year construction period. The expansion and renovation of RFK Stadium would also compromise its suitability for major league baseball.

The expansion and renovation of RFK Stadium, site infrastructure and parking is projected to directly generate approximately 870 full-time construction-related jobs over the two-year construction period. Presumably, the D.C. Armory would meet the 35 and 51 percent goals, respectively, for MBE contracting and new hires for full-time and part-time jobs associated with the design, planning, construction, and operation activities of the stadium. In addition, approximately 1,052 additional jobs would be indirectly created through economic spin offs.

No Action Alternative

The No Action Alternative assumes that the existing conditions of the stadium and the surrounding site area would continue. This includes a stadium with a seating capacity of 56,880 and parking capacity for 14,610 vehicles. No new stadium construction or renovation would occur, and RFK Stadium would be maintained in its current configuration and capacity. Existing elements of the site area include:

- An open space edge along the Anacostia River;
- Open space along the east side of Oklahoma Avenue consisting of vegetation, a bike trail, a playground, and the RFK Stadium auxiliary field; and
- A surface ring road providing vehicular access and pedestrian access to RFK Stadium adjacent roadways, and parking areas.

Existing open space areas along Oklahoma Avenue and the Anacostia River would remain in their existing conditions without any changes or improvements.

Cumulative Impact Projects

The environmental analysis included in this EIS includes an evaluation of potential projects in the study area, in addition to existing uses and projects, to determine the cumulative impact of the proposed and alternative actions on the study area. The planned or proposed projects include: the recently approved Barney Circle Freeway Modification Project, the proposed National Children's Island project, the renovation of Langston Golf Course, the redevelopment of the Old D.C. Jail Site, and the planned expansion of the Hechinger Mall Area.

Summary of Existing Conditions

The proposed site area consists of 190 acres located within Anacostia Park in Washington, D.C. The boundaries of the proposed site area can be generally defined by Oklahoma Avenue and Benning Road to the north; 21st Street, Constitution Avenue and Benning Road to the north; 21st Street, Constitution Avenue, and 19th Street on the west; the D.C. Armory, Independence Avenue, D.C. General Hospital, and the approximate extension of E Street, S.E., to the south; and by Kingman Lake and the Anacostia River to the east.

The proposed site area is dominated by the existing RFK Stadium and related vehicular surface parking areas. Other uses on the proposed site area include the Metrorail Orange/Blue Line that traverses a portion of the site on an elevated track and continues underground through the area, and a swirl concentrator sewer treatment facility. There are no residential or commercial buildings or structures, and no historic or archaeological resources, located on the proposed site area.

Little vegetation and wildlife habitat exist on the site. A narrow strip of unimproved open space and vegetation is located along the Anacostia River. Additional open space, including a grassy area, a playground, and the RFK Stadium auxiliary field, is located adjacent to Oklahoma Avenue.

The proposed site area has been found to contain contaminated soils, primarily including lead and semi-volatile organics that appear to result from various fill materials placed on the site more than 30 years ago. High levels of contaminants have been detected in localized areas distributed randomly throughout the proposed site area. The groundwater has not been found to be contaminated by the soil contaminants.

The Anacostia River in this area is characterized by high sedimentation, high bacteria counts, and low dissolved oxygen concentrations. Stormwater runoff from the highly urbanized Anacostia watershed upstream from the proposed site area and combined sewer overflows are the principal sources of contamination. Stormwater runoff from RFK Stadium and the existing parking areas currently discharges into the Anacostia River without treatment. The proposed site area is located within the 100-year floodplain of the Anacostia River.

The study area surrounding the proposed site area includes the Benning Road-Bladensburg Road-Maryland Avenue intersection to the northwest; the Benning Road-Minnesota Avenue intersection to the northeast; the Potomac Avenue Metrorail Station and Barney Circle to the southwest; and the Anacostia Freeway/Kenilworth Avenue corridor to the southeast. This area is generally of mixed-character and quality. It consists of a mix of urban uses, including commuter roadway routes, public and institutional facilities, residential and commercial uses, and open space including Kingman Lake and the Anacostia River to the east and Langston Golf Course to the north.

East Capitol Street/C Street, Benning Road, and Pennsylvania Avenue traverse or border the proposed site area and experience heavy AM and PM peak hour traffic. In addition to RFK Stadium, there are public facilities located to the south of the proposed site area, including the D.C. Armory, the D.C. General Hospital complex, the D.C. Correctional Facility, and the D.C. Correctional Treatment Facility. The nearest commercial areas are located along Benning Road.

Residential areas to the west include rowhouses in the Kingman Park neighborhood and multi-family units in the Langston Terrace area. Residents of these neighborhoods are primarily African-American with moderate incomes and above-average levels of home ownership. Public health data indicate that residents of the study area have relatively levels of serious illness.

Summary of Environmental Consequences

Given that an existing 56,880-seat stadium is located within the proposed site area, this EIS addresses the environmental impacts that would result from an incremental increase in capacity and activities relative to the existing capacity and activities of RFK Stadium, and other projects in the area. Thus, the primary impacts of the Proposed Action and Alternatives would be those generated by increased stadium event traffic volumes, the additional number of stadium events, increased stadium event crowds, construction activities, physical changes to the site, and the cumulative effects of this and other projects in the area.

The major findings of the analyses are as follows:

Land Use impacts were determined by the potential for physical changes to the site, effects on adjacent development, and compliance with planning policies and controls. As proposed, the Proposed Action would convert 17 acres of open space in Anacostia Park to stadium-related parking, provide physical improvements to the parkland along the Anacostia River, and include the development of a second stadium within the proposed site area. Expanding the landscape/open space buffer to an average width of approximately 50 to 200 feet along Oklahoma Avenue as a mitigation measure would preserve approximately 2.5 to 10 acres of open space and reduce the potential impacts of the Proposed Action on the adjacent neighborhood that would result from the loss of open space. The use of the proposed site for a stadium and related parking would be consistent with and complement the existing uses of the site, including RFK Stadium and the D.C. Armory. As with RFK Stadium and the D.C. Armory, the proposed stadium would not be consistent with the residential character of areas located to the west. The Proposed Action generally complies with planning objectives. The RFK Stadium Expansion/Renovation Alternative would retain 12 acres of open space along Oklahoma Avenue and result in physical improvements to the parkland along the Anacostia River. (Assuming that the same 2.5 to 10-acre open space mitigation measure identified for the Proposed Action could be applied to this alternative, 14.5 to 17 acres of open space could be retained along Oklahoma Avenue and, possibly, 5 acres of overflow grass parking could be established along Benning Road.) The expansion of an existing stadium facility would be more consistent with residential uses in adjacent areas than would a new stadium. The

alternative complies with most planning objectives. The No Action Alternative would not convert open space to parking nor would it provide physical improvements to the site. The alternative would be consistent with most planning objectives although it would not fulfill the District's economic development goals.

Residential impacts were determined by the potential for changes to the quality of life, housing conditions, and demographic characteristics that could result from stadium construction or operations. The Proposed Action would not displace any residential housing units. However, the proposed stadium would cause short-term disruption to the quality of life for nearby residents due to the increased traffic, noise, dust, glare, and visual intrusion associated with construction activities. These construction-related impacts would be substantial for a limited number of residents in immediately adjacent areas; more than one block from the proposed stadium, short-term impacts would be considered moderate; beyond three or four blocks, the impacts would be slight. The Proposed Action would not have a long-term effect on housing values or result in demographic changes. The RFK Stadium Expansion/Renovation Alternative would not displace residential housing units. The alternative would cause a short-term disruption to the quality of life for a limited number of residents due to the increased traffic, noise, dust, glare, and visual intrusions associated with construction; this disruption would be for a shorter duration and have a substantial effect on a fewer number of residents than would the Proposed Action. The alternative would have no effect on housing values or demographic characteristics. The No Action Alternative would not displace residences. The alternative would not cause a short-term disruption to the quality of life, nor would it affect housing values or demographic characteristics.

Economic and Fiscal impacts result from estimated changes in expenditure levels, retail and income tax revenues, and fiscal conditions. The Proposed Action would have a significant positive impact on the Washington area construction industry, including direct expenditures of approximately \$160 million in private funds for the construction of the stadium and \$46 million in revenue bonds for site infrastructure, and approximately \$128 million in additional indirect expenditures. These construction-related expenditures would directly create approximately 1,500 net new construction jobs during the two-year period. In addition, approximately 1,815 net new jobs would be indirectly created during the construction period due to economic spin-off effects. The District of Columbia is expected to capture 51 percent of all direct expenditures and jobs, which would represent approximately \$55 million in direct payroll spending and 756 net new jobs during construction. The Proposed Action would create approximately 50 full-time, permanent new jobs. The RFK Stadium Expansion/Renovation Alternative would require the use of public funds and be the financial responsibility of the District of Columbia. Approximately \$116 million would be required for this alternative. Based on this amount, approximately 870 net new jobs would be directly generated in the metropolitan region. Approximately 1,052 net new jobs would be indirectly created during construction. The District is expected to capture approximately 357 of these net new construction jobs. No permanent, full-time jobs would be created with this alternative. The No Action Alternative would not generate additional expenditures, create new jobs, or alter current fiscal conditions. The No Action Alternative would represent an adverse economic and fiscal impact resulting from opportunity costs.

Impacts on Cultural and Aesthetic Resources were determined for historic, archaeological, and visual resources. It has been determined that the likelihood that the proposed site area contains any archaeological resources is slight. In terms of off-site resources, both of the Build Alternatives would have no adverse effects on existing or potential historic districts, sites, or structures. The Proposed Action would have an impact on the existing visual quality of views for adjacent residential areas that ranges from slight for most of the area to substantial for a limited number of homes immediately adjacent to the proposed site area. The visual impacts to residential areas could be reduced by expanding the landscaped open space buffer along Oklahoma Avenue to an average width of approximately 50 to 200 feet. Impacts on other residential areas, historic resources, open spaces, and parklands, and important road corridors and entrances to the District within the study area and on distant viewpoints outside of the study area would be slight to moderate. The RFK Stadium Expansion/Renovation Alternative would have a slight impact on the visual quality of views from historic and open space areas; a moderate impact on the East Capitol Street entrance to the District and views from adjacent residential areas, and no impact on distant viewpoints. The No Action Alternative would have no impact on historic, archaeological or visual resources.

Air Quality impacts were determined by computer modeling of traffic emissions. Vehicular traffic generated by events at either of the Build Alternative facilities would result in moderate impacts on air quality that would not cause violations of National Ambient Air Quality Standards. Air emissions related to sold out stadium events are expected to be similar to those generated during peak commuting periods. Short-term impacts of construction activities from either Build Alternative, particularly fugitive dust emissions, could be substantial; however, these impacts could be adequately mitigated by implementing control measures. The No Action Alternative would not affect existing air quality levels.

Noise Level impacts were identified for crowd noise, the public address system used during stadium events, traffic, and construction noise. For both Build Alternatives, stadium crowds and the public address system would generate moderate noise impacts in certain areas during major events; traffic noise impacts for the two Build Alternatives would be considered moderate. The Proposed Action would result in substantial short-term noise impacts on adjacent residential areas to the west due to the driving of piles during a 90-day period at the beginning of construction. The RFK Stadium Expansion/Renovation Alternative would result in less short-term noise impacts during construction due to the shorter duration of its pile driving period. The No Action Alternative would not have construction-related noise impacts.

Water Resources impacts were determined for surface and groundwater hydrology and quality. The Proposed Action would not impact surface water or groundwater hydrology and, through mitigation, the potential for surface water quality impacts would be reduced. As a result, the Proposed Action can be implemented without contributing substantially to violations of surface water quality criteria. In particular, proper erosion control measures and treatment of groundwater would be provided to ensure that contaminants remaining from past waste disposal on-site are prevented from entering the Anacostia River. Although the Proposed Action is located within the 100-year floodplain of the Anacostia River, it would

not increase flooding potential along the river. The proposed stadium would be designed to be floodproof. The RFK Stadium Expansion/Renovation Alternative would have most of the potential surface water quality impacts as the Proposed Action, but they can be similarly mitigated. RFK Stadium does not encroach on the 100-year floodplain (although some floodproofing measures would be required if the playing field is lowered during expansion). Other water resources impacts of this alternative were determined to be insignificant or readily mitigated. The No Action Alternative would not provide mitigating measures such as treatment of parking lot runoff, diversion of stadium washwater to the sanitary sewers or water conservation measures that would be provided with the build alternatives. Potential water quality impacts from soil erosion and dewatering would be avoided.

Public Health conditions are primarily a function of lifestyle habits, health care accessibility, and, to a lesser extent, environmental conditions. These environmental conditions primarily include air quality, particularly as it is affected by traffic emissions and dust, the quality of drinking water, and the presence of contaminated materials on site. Both the Build Alternatives would have an adverse impact on air quality due to increased dust particles during construction and increased traffic emissions during stadium operations; both actions would have no impact on the quality of drinking water; and both actions would remove soils contaminated with lead as they are disturbed in accordance with federal regulations so as to minimize potential public health impacts. Overall, both actions would have a negligible impact on public health. The No Action Alternative would not affect public health (but would also not remove the contaminated soils as they would not be disturbed).

Impacts related to **Soils, Geology and Topography** were identified within the urban context and disturbed nature of the site area. The Proposed Action, which would regrade and reconfigure existing parking areas, and excavate an area of approximately 15 acres for the proposed stadium, would have a slight impact. The RFK Stadium Expansion/Renovation Alternative would also regrade and reconfigure existing parking areas, resulting in a slight impact on soils and topography. The No Action Alternative would not physically impact the site.

Potential impacts associated with **Hazardous Materials** were related to the presence of high concentrations of lead and semi-volatile organic compounds found in test samples of on-site soils. If disturbed, the contaminated soil could have adverse impacts on the community and/or the environment if not handled properly. However, if appropriate control procedures for handling and transportation are closely followed during construction of either of the Build Alternatives, the potential effects of the soil contamination would be adequately mitigated. The No Action Alternative would not involve any construction or disturbance of the soil; therefore, the No Action Alternative would have no effect on hazardous materials.

Impacts to **Vegetation, Wetlands, and Wildlife** were determined through on-site analyses of biological resources. All Alternatives would not disturb the Anacostia River or its shoreline, would not affect jurisdictional wetlands, and would have minimal impact on the wildlife that may inhabit the area. The Proposed Action would result in the loss of some mature trees along Oklahoma Avenue and have a slight impact on vegetation.

Urban Systems include water supply, wastewater management, stormwater management, solid waste, and energy systems. The impacts caused by the Build Alternatives would be minimal for these systems, which are available at the site and have adequate capacity to support the proposed increase in stadium operations. Both of the Build Alternatives would have a positive impact on stormwater management since stormwater would be treated before leaving the site. The No Action Alternative, however, would not treat the stormwater runoff that enters the Anacostia River.

Transportation impacts are a function of: increased traffic volumes and increased public transportation usage, which result directly from the incremental increases in stadium capacities; long-term changes to the existing commuting patterns; and short-term disruptions due to construction and parking. The two Build Alternatives would generate traffic volumes at or below those for peak commuting periods, and would result in increased pressure for on-street parking spaces creating a slight impact on parking in the study area despite the provision of additional parking spaces on-site through smaller parking modules and increased efficiencies. Both of the Build Alternatives would result in increased use of public transportation; however, the Proposed Action would require a longer walking distance to the Stadium-Armory Metrorail Station. The Proposed Action would relocate and depress the westbound spur of the Whitney A. Young Bridge, which would have a moderate impact on traffic circulation during construction. The Proposed Action would also eliminate the "ring road" connection around RFK Stadium for traffic travelling eastbound on C Street, N.E., creating a substantial long-term impact on outbound commuting patterns; however, this impact can be easily mitigated through site plan modifications. The RFK Stadium Expansion/Renovation Alternative would modify the ring road encircling RFK Stadium, creating a moderate impact to commuting patterns during construction. The No Action Alternative would have no impact on transportation and parking.

Cumulative Impacts would result from several major projects proposed or implemented in the study area. Overall, because events associated with the Proposed Action or the RFK Stadium Expansion/Renovation Alternative would occur during non-peak times, and because the proposed National Children's Island project could not be open during major stadium events, the potential for cumulative impacts is limited. The cumulative effects would be primarily additional incremental increases in ambient air quality and water resource quality impacts. Some projects such as the Barney Circle Freeway Modification Project, however, would have positive effects, reducing such cumulative impacts as traffic congestion and the associated ambient air quality effects. Generally, the cumulative impacts under All Alternatives would not be substantial.

Summary of Mitigation Measures

Mitigation measures and implementation responsibilities have been identified to reduce the impacts generated by the Build Alternatives on the community and the environment. While a number of mitigation measures have been identified, only those recommended to offset substantial impacts are summarized here.

To reduce the **land use** impacts associated with the Proposed Action, an open space buffer with an average width of 50 to 200 feet buffer should be established along Oklahoma Avenue. Such a buffer would preserve 2.5 to 10 acres of open space including a landscaped edge and usable recreation space. Such a buffer would also reduce the impact of the Proposed Action on the **visual quality** of adjacent residential areas. Off-site landscaping improvements are recommended to further mitigate the visual impacts that would result from the Proposed Action.

To reduce the adverse effects on the community from **construction** of either Build Alternative, a Construction Plan would be developed and implemented to: establish time restrictions on noise-generating activities (in particular, prohibiting pile driving during sensitive time periods); restrict construction vehicles to non-residential access routes; place construction storage and staging areas away from residential areas; utilize construction technologies and processes to minimize noise and vibration; and require best practice methods to control dust. In addition, structural monitoring would be conducted to protect residential foundations.

To protect the community and the environment from potential effects associated with the existing **soil contamination** on the site, construction of either of the Build Alternatives would adhere to detailed procedures for handling and removing soils that would be disturbed during construction. All soil would be considered potentially contaminated and would be periodically tested. Dust control procedures would be implemented during all soil disturbance. In addition, air quality monitoring would be conducted at the perimeter of the site to ensure that fugitive dust does not reach residential areas. Contaminated and hazardous soil would be handled and transported in accordance with established federal procedures designed to protect workers, residents, and the environment.

To reduce **traffic and parking impacts** associated with the Build Alternatives, a comprehensive transportation management plan would be developed and implemented. The purpose of the plan would be to: promote the use of public transportation, charter buses, shuttle buses, and ridesharing; expand the residential permit parking program area to prohibit parking on residential streets; implement parking management measures to control vehicles on-site; establish a neighborhood traffic control plan to route traffic away from residential streets; and provide a transportation kiosk to distribute information on public transportation operations and schedules. Minor changes to the local roadway network surrounding RFK Stadium are recommended for the Build Alternatives to accommodate commuter and event-related travel patterns. In addition, slight modifications to the site plan for the Proposed Action have been recommended to maintain commuter traffic flow.