

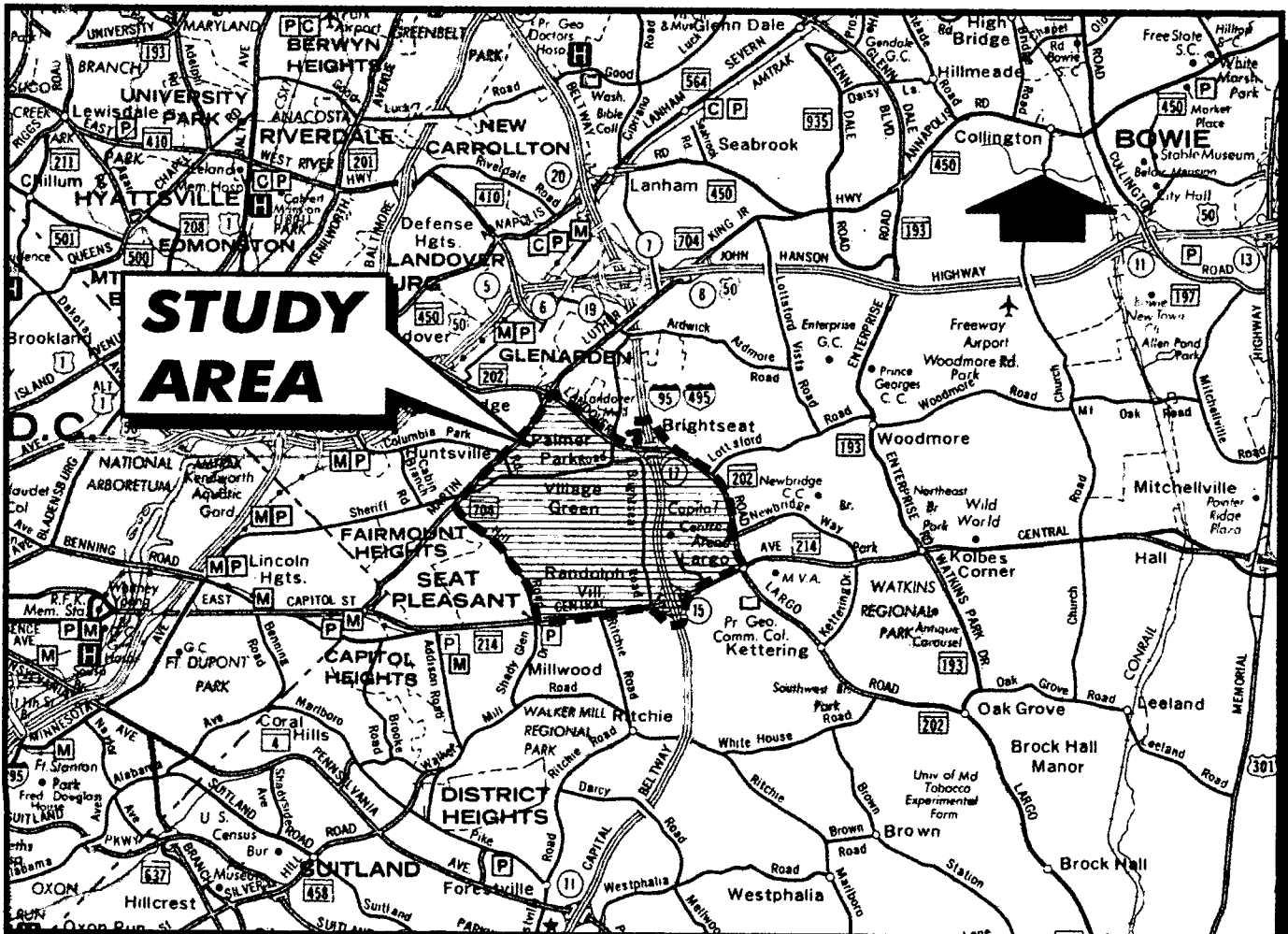
# ENVIRONMENTAL ASSESSMENT



FOR CONTRACT P-189-201-372(N)

## Access Improvements at the Existing MD 202 and MD 214 Interchanges With I-95/I-495 (Capital Beltway) and Construction of Special-Use Ramps Between Arena Drive and the Capital Beltway

Prince George's County, Maryland



prepared by:

U.S. DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION

MARYLAND DEPARTMENT OF TRANSPORTATION  
STATE HIGHWAY ADMINISTRATION

REPORT NUMBER: FHWA-MD-EA-96-02-D

FEDERAL HIGHWAY ADMINISTRATION  
REGION III

ACCESS IMPROVEMENTS AT THE EXISTING  
MD 202 AND MD 214 INTERCHANGES  
WITH I-95/I-495 (CAPITAL BELTWAY)  
AND CONSTRUCTION OF SPECIAL-USE RAMPS  
BETWEEN ARENA DRIVE AND THE CAPITAL BELTWAY

ADMINISTRATIVE ACTION

ENVIRONMENTAL ASSESSMENT

U.S. DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION  
AND  
STATE OF MARYLAND  
DEPARTMENT OF TRANSPORTATION  
STATE HIGHWAY ADMINISTRATION

SUBMITTED PURSUANT TO: 42 U.S.C. 4332(2)(C); 49 U.S.C. 303  
23 U.S.C. 128(a) and CEQ REGULATIONS (40 CFR 1500 et seq)

HAL KASSOFF  
ADMINISTRATOR

June 21, 1996  
Date

Neil J. Pedersen  
NEIL J. PEDERSEN, DIRECTOR  
OFFICE OF PLANNING AND  
PRELIMINARY ENGINEERING

June 24, 1996  
Date

Susan J. Binder  
FEDERAL HIGHWAY  
ADMINISTRATION  
DIVISION ADMINISTRATOR

**SUMMARY**

**SUMMARY**

**1. Administrative Action**

- ( ) Environmental Impact Statement
- (X) Environmental Assessment
- ( ) Finding of No Significant Impact
- ( ) Section 4(f) Evaluation

**2. Additional Information Concerning This Project May Be Obtained By Contacting:**

Mr. Louis H. Ege, Jr.  
 Deputy Director  
 Office of Planning and Preliminary  
 Engineering  
 State Highway Administration  
 707 N. Calvert Street  
 Baltimore, Maryland 21202  
 Hours: 8:00 a.m. to 4:30 p.m.  
 Phone: (410) 545-8500

Ms. Renee Sigel  
 Planning Research and  
 Environmental Engineer  
 Federal Highway Administration  
 The Rotunda - Suite 220  
 711 West 40th Street  
 Baltimore, Maryland 21211  
 Hours: 7:30 a.m. to 4:30 p.m.  
 Phone: (410) 962-4342 ext. 116

**3. Description of Action**

The proposed action consists of Interstate Access Point Approval for ramp modifications at the existing I-95/I-495 (Capital Beltway) interchanges with MD 202 (Landover Road) and MD 214 (Central Avenue), and new, special use, diamond interchange ramps in all four quadrants connecting I-95/I-495 with Arena Drive (See Figures S-1 and S-2). The request for Interstate Access Point Approval at the existing MD 214 and MD 202 interchanges and a new interchange at Arena Drive and I-95/I-495 is required to relieve congestion on the two existing interchanges and to provide improved access to serve existing and planned development for the area. This development includes a 78,600 seat professional football stadium which is currently under construction and scheduled to be completed for the 1997 football season.

Operational problems at the two existing interchanges are being experienced under several conditions. The first is ingress to USAir Arena events, during which mainline I-95/I-495 queuing regularly extends up to one-half mile north of MD 202 and south of MD 214. During the weekday morning peak hour, operational problems occur at the loop ramp

carrying southbound I-95/I-495 traffic traveling onto eastbound MD 202. Traffic queues on eastbound MD 202 around the interchange loop onto the shoulder of southbound I-95/I-495 due to the heavy surge of office trips.

The proposed action (Alternative 3) has been evaluated in comparison with two alternatives not requiring the federal action of Interstate Access Point Approval: Alternative 1, consisting of no improvements to Interstate access, no stadium traffic and master plan-approved local road improvements in place (see Figure S-3); and Alternative 2, consisting of no improvements to Interstate access, an operational professional football stadium and master plan-approved local roads in place. These alternatives are further described below:

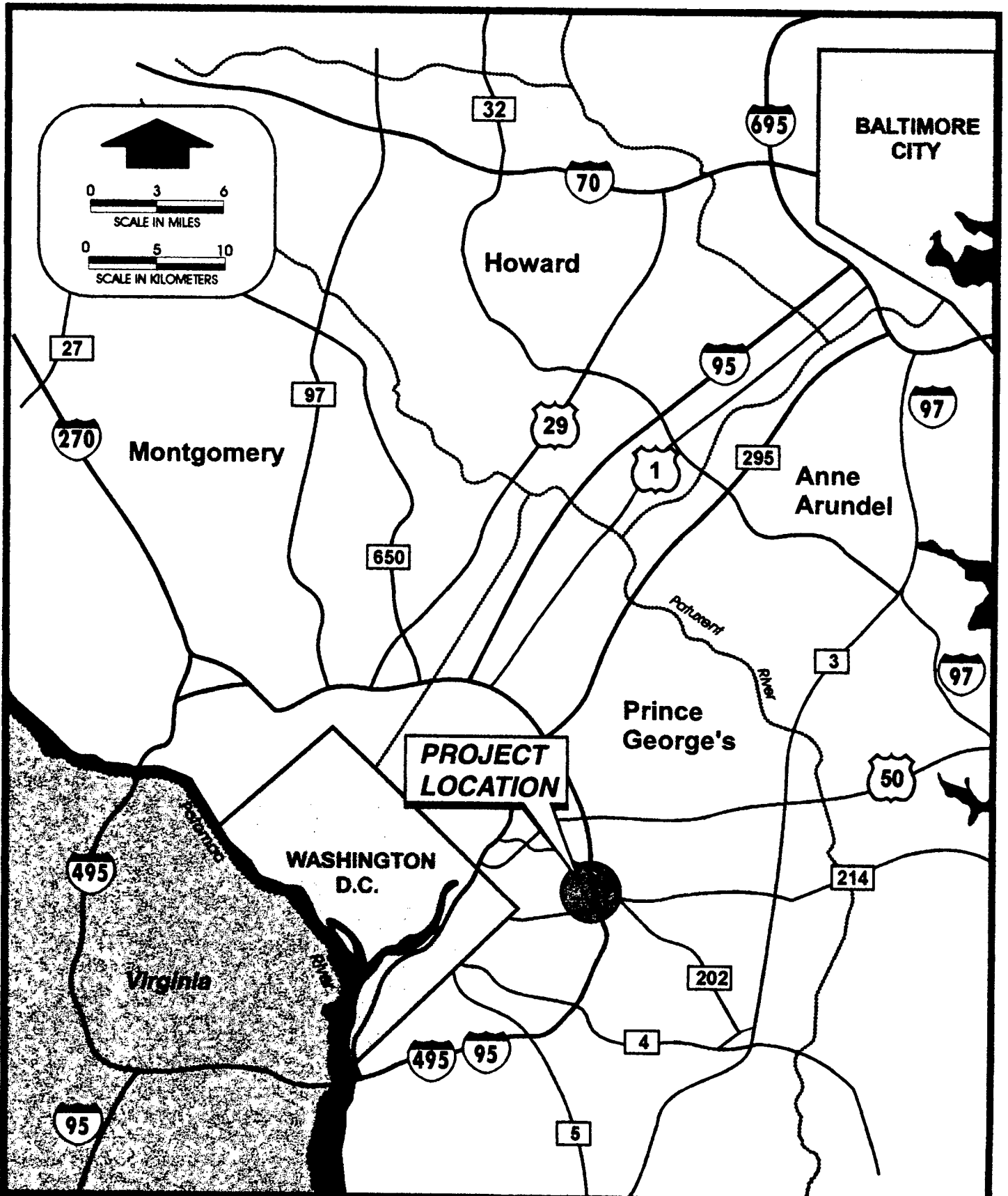
**4. Descriptions of Alternatives Considered**

**a. Alternatives Retained**

**Alternative 1 - Proposed Action Not Approved - No Stadium Traffic - Background Roadway Network in Place**

Alternative 1 would result in no improvements to access along I-95/I-495 at or between the MD 202 and MD 214 interchanges other than improvements such as resurfacing that would occur as part of normal highway maintenance and safety operations. Alternative 1 assumes no stadium traffic; however, local roadway improvements that are on the area master plans and Interstate improvements that have National Environmental Policy Act (“NEPA”) approval are assumed in place and operational at all times as part of the transportation background network. All of the improvements summarized below will be constructed with State and county funds, except for the Ritchie-Marlboro Road interchange which will be partially funded with federal monies.

- The Arena Drive Bridge over I-95/I-495 and approaches between the USAir Arena entrance and Brightseat Road which have been funded for construction and for which Categorical Exclusion approval has been requested from the Federal Highway Administration for the limited use of the Interstate right-of-way for the bridge.



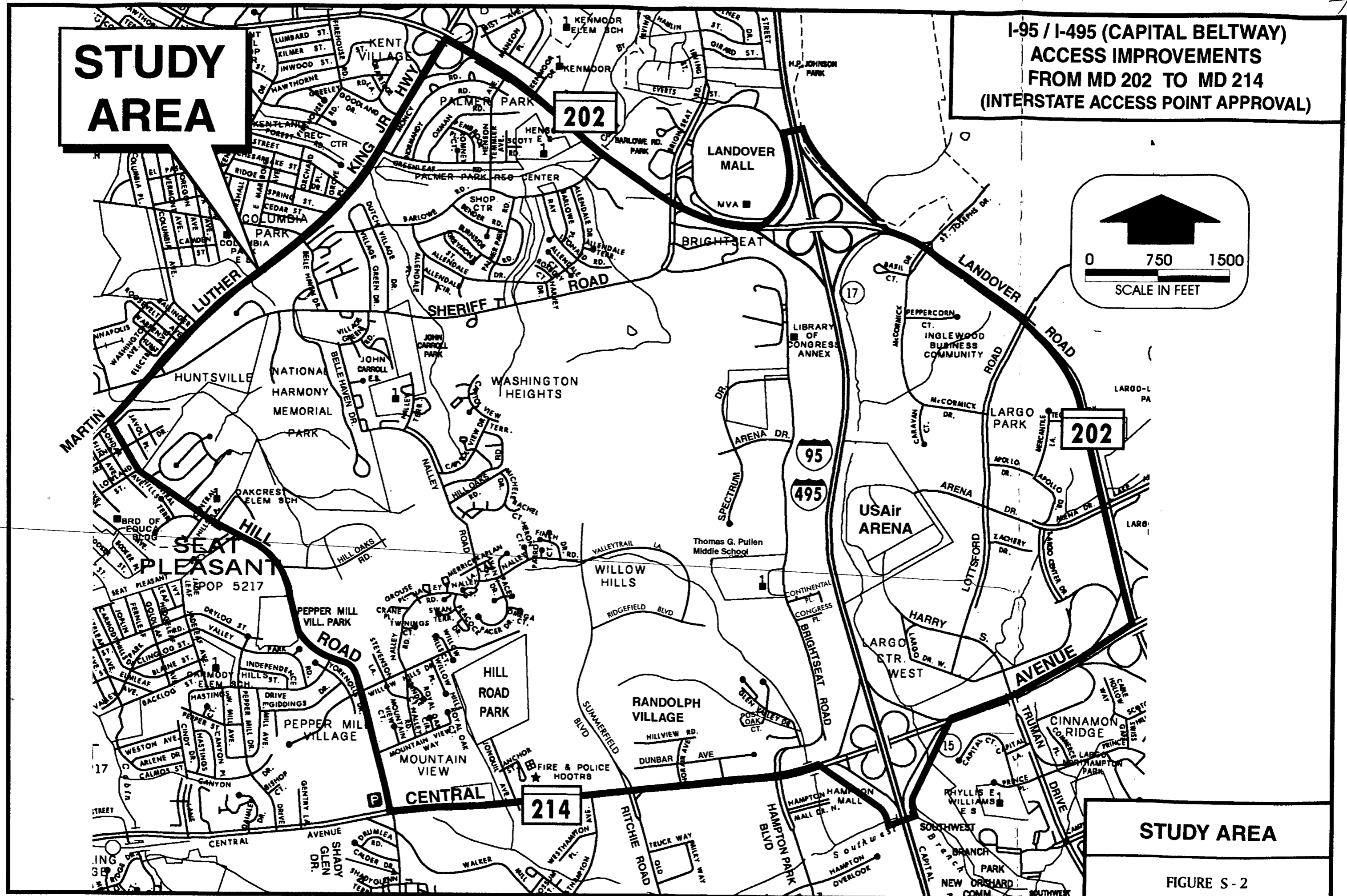
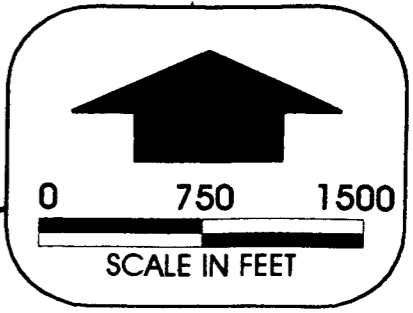
**I-95 / I-495 (CAPITAL BELTWAY)  
 ACCESS IMPROVEMENTS  
 FROM MD 202 TO MD 214  
 (INTERSTATE ACCESS POINT APPROVAL)**

**LOCATION MAP**

**FIGURE S - 1**

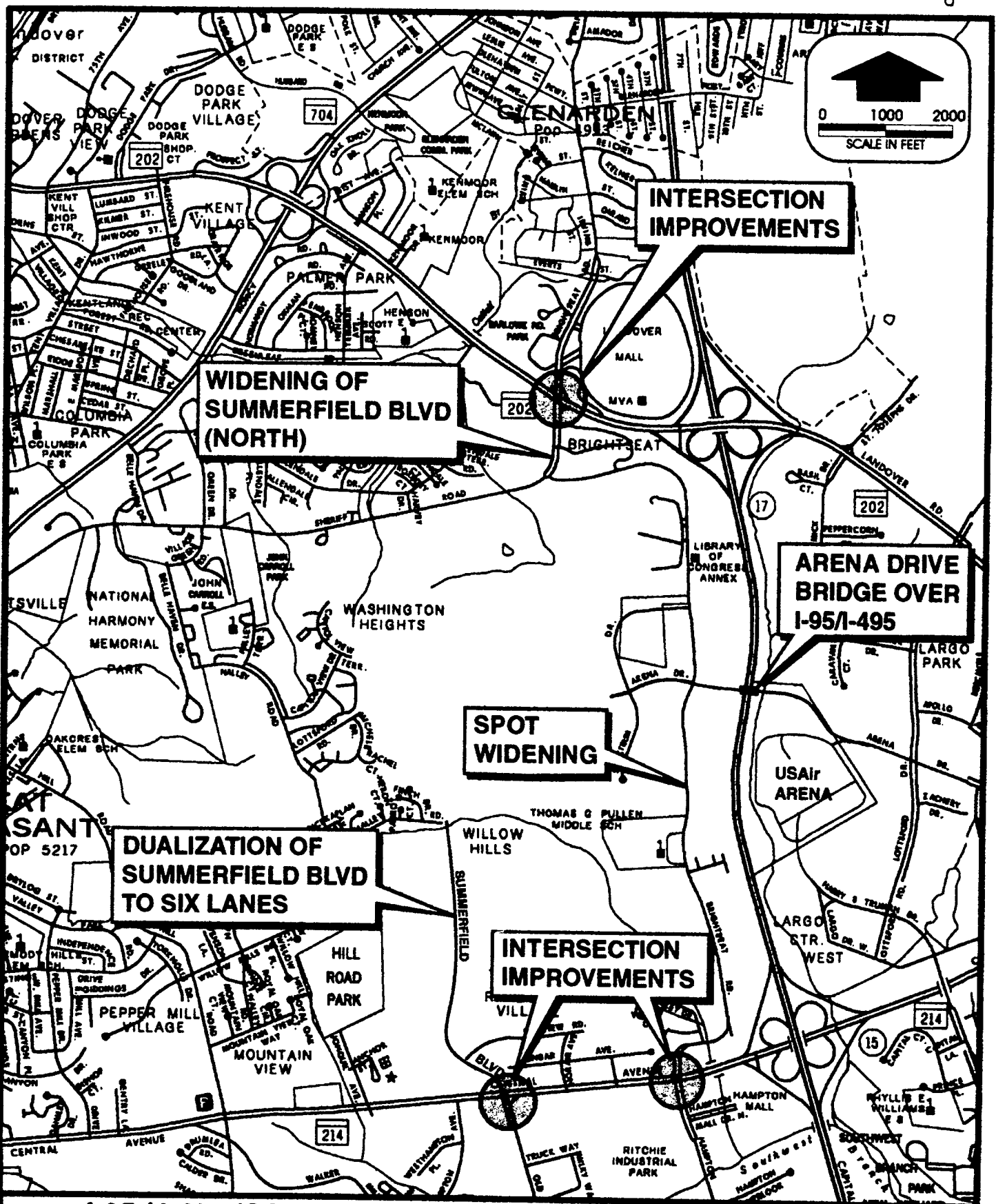
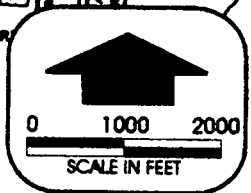
**STUDY AREA**

**I-95 / I-495 (CAPITAL BELTWAY)  
ACCESS IMPROVEMENTS  
FROM MD 202 TO MD 214  
(INTERSTATE ACCESS POINT APPROVAL)**



**STUDY AREA**

FIGURE S - 2



**INTERSECTION IMPROVEMENTS**

**WIDENING OF SUMMERFIELD BLVD (NORTH)**

**ARENA DRIVE BRIDGE OVER I-95/I-495**

**SPOT WIDENING**

**DUALIZATION OF SUMMERFIELD BLVD TO SIX LANES**

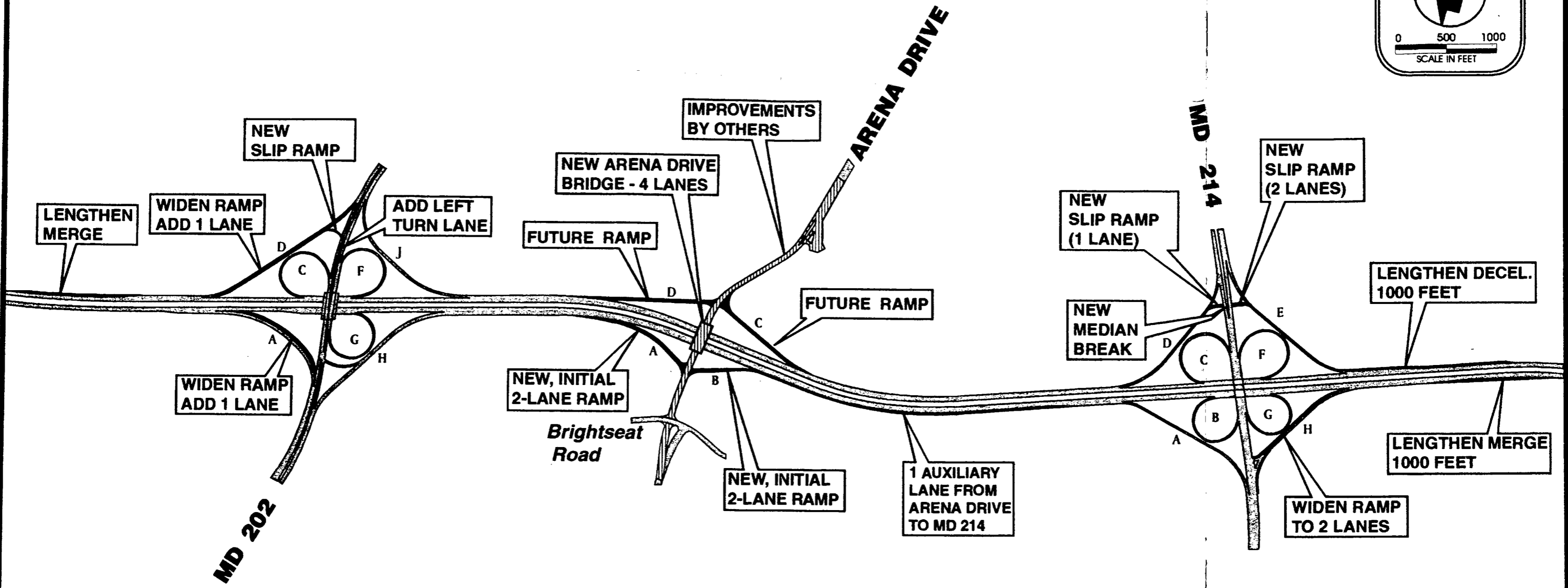
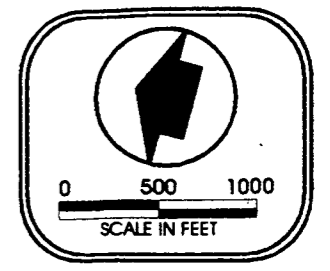
**INTERSECTION IMPROVEMENTS**

**I-95 / I-495 (CAPITAL BELTWAY)  
ACCESS IMPROVEMENTS  
FROM MD 202 TO MD 214  
(INTERSTATE ACCESS POINT APPROVAL)**

**ROADWAY IMPROVEMENTS IN PLACE  
AS PART OF THE BACKGROUND  
LOCAL TRANSPORTATION NETWORK**

**FIGURE S - 3**





**LEGEND**

- A RAMP DESIGNATION
- EXISTING ROADWAY
- IMPROVEMENTS BY OTHERS
- INTERSTATE ACCESS IMPROVEMENTS ASSOCIATED WITH THE PROPOSED ACTION

**I-95 / I-495 (CAPITAL BELTWAY)  
ACCESS IMPROVEMENTS  
FROM MD 202 TO MD 214  
(INTERSTATE ACCESS POINT APPROVAL)**

**ALTERNATIVE 3**

FIGURE S - 4

- The Ritchie-Marlboro Road interchange with I-95/I-495, 1.6 miles south of MD 214, which has been approved through the NEPA process (Location Approval in November, 1991), with Interstate Access Point Approval pending, and anticipated for construction by 2020.
- Intersection modifications at MD 214/Summerfield Boulevard and the widening/construction of Summerfield Boulevard to six lanes from MD 214 to south of Sheriff Road.
- Intersection modifications/widening at Brightseat Road and MD 202, and widening of Brightseat Road (a.k.a. Summerfield Boulevard North) from MD 202 to south of Sheriff Road.
- Intersection modifications at MD 214/Brightseat Road and the spot widening of Brightseat Road north of MD 214.

This alternative has been developed as a technical reference for comparison with the other alternatives. This alternative is not viable to handle traffic from stadium events. Traffic related impacts of Alternative 1 are addressed in this document; environmental considerations for the projects and improvements in the background roadway network have been addressed as part of other documentation and permitting processes.

**Alternative 2 - Proposed Action Not Approved - With Stadium Traffic - Background Roadway Network in Place**

Alternative 2 would consist of the same existing roadway conditions (No Interstate Access Point Approval for new improvements) and background roadway network assumptions made with Alternative 1, and considers traffic generated by a football stadium event. It includes the reasonable roadway, Transportation Demand Management (TDM) and Transportation Systems Management (TSM) improvements that could be implemented to provide a workable level of operations for stadium event ingress and egress without Interstate Access Point Approval. This alternative also provides a technical reference for comparison of traffic related impacts with the other alternatives. It is recognized that a change in zoning

11

approval by Prince George's County would be required to implement this alternative, as stadium event operation is conditioned upon completion of Interstate ramp improvements between I-95/I-495 and Arena Drive.

The major components of the stadium event traffic operations plan associated with Alternative 2 would include the following:

- Maximized capacity of the new four lane Arena Drive bridge over I-95/I-495 (westbound for ingress and eastbound for egress) before and after events through use of extensive signing, traffic cones and police control at intersections within the local roadway network encompassed by the I-95/I-495, MD 202, MD 214 triangle.
- Closure of MD 202 to through traffic before and after events (using police and special signing) while allowing free movement between MD 202 and Brightseat Road, and MD 202 and Landover Mall.

Traffic projections and analyses for the above condition indicate that these measures could provide workable stadium ingress and egress traffic operations. The critical point for the workability of this alternative is the MD 202/Brightseat Road intersection for both ingress and egress. For ingress, the existing southbound I-95/I-495 ramp onto westbound MD 202 would operate at capacity for the entire hour prior to an event and continuously feed the Brightseat Road intersection. With triple left turns provided, westbound to southbound, and this movement flowing 80% of the time (and 20% of the time for exiting Landover Mall traffic), adequate capacity can be provided to prevent queues from extending back onto the I-95/I-495 ramps. For egress, police traffic control would be provided to provide three lanes for the return movement at this intersection.

**Alternative 3 - Interstate Access Point Approval Granted for Improvements at the Existing MD 202 and MD 214 Interchanges with I-95/I-495 and Construction of Special Use Ramps Between Arena Drive and I-95/I-495 - Background Roadway Network in Place**

Alternative 3 would include the existing roadway conditions and background

roadway network assumptions made with Alternatives 1 and 2. The additional improvements associated with Alternative 3, broken down according to the three locations where they apply, are described below. All improvements would be constructed with State and county funds.

**I-95/I-495 at MD 202**

All improvements at this location would be within existing right-of-way.

**Ramp ‘A’ Widening** - The proposed improvements would consist of base widening of the existing ramp connecting southbound I-95/I-495 with westbound MD 202. The existing curb and gutter and adjacent sidewalk at the MD 202 gore area would not be relocated; however, the gore at MD 202 would need to be reconstructed and a signal provided at this location.

**Merge Lane Extension on I-95/I-495 Northbound** - This improvement would consist of 12 feet of base widening for the westbound MD 202 merge onto I-95/I-495 northbound.

**Turn Lane, Slip Ramp and Ramp ‘D’ Widening** - Base widening would be provided in the median of eastbound MD 202 to provide a left turn lane approximately 800 feet in length onto Ramp ‘D’. Eastbound MD 202 would be connected to Ramp ‘D’ with a new 26 foot wide slip ramp. Ramp ‘D’ would be base widened from the proposed slip ramp north.

**I-95/I-495 at Arena Drive**

This improvement would consist of the construction of a full diamond special-use interchange (ramps in all four quadrants), connecting I-95/I-495 with Arena Drive. The initial improvement would consist of special use (before and after stadium events only) ramps on the west side of I-95/I-495 only. It is anticipated that the interchange will be upgraded to a full movement interchange by 2020.

Interchange Ramp 'A', which would be constructed initially and connect southbound I-95/I-495 with Arena Drive, would be a 2-lane, 26 foot wide open section. Ramp 'B', which would connect Arena Drive to southbound I-95/I-495 and also be constructed initially, would taper from a 2-lane, 26 foot wide open section to 1-lane before the I-95/I-495 gore. Ramp 'C', which would be constructed in the future to connect northbound Interstate traffic to Arena Drive, would taper from 1-lane before the I-95/I-495 gore to 2-lanes at Arena Drive. Ramp 'D', which would also be constructed in the future, would connect Arena Drive with northbound I-95/I-495 and taper from 2-lanes to 1-lane. A total of approximately 11.6 acres of right-of-way would be required to construct the four ramps.

**I-95/I-495 at MD 214**

All improvements at this location would be within existing right-of-way.

**Ramp 'H' Widening** - The proposed improvements would consist of base widening of the existing Ramp 'H'. The widening would take place to the north side of the ramp, thereby eliminating the need to relocate existing light standards and minimizing impacts to the existing swale to the south of Ramp 'H'.

**Merge Lane Extension on I-95/I-495 Southbound** - An additional 1300 feet of merge length would be provided by base widening 12 feet adjacent to the existing southbound roadway.

**Diverge Lane Extension on I-95/I-495 Northbound** - This improvement would consist of a 1,000 foot extension of the diverge lane for northbound I-95/I-495 onto eastbound MD 214. Base widening would be provided by removing the existing shoulder and replacing with full depth pavement.

**Slip Ramps** - Improvements at the MD 214 interchange would also include slip ramps that allow traffic on the northbound-to-eastbound ramp (Ramp 'E') to turn left onto westbound MD 214, and allow eastbound MD 214 traffic to turn left onto Ramp 'D', which is currently the westbound-to-northbound ramp.

**b. Alternatives Dropped From Further Consideration**

The development of interchange improvements associated with Alternative 3 resulted from the consideration of approximately 23 alternatives which generally fell within seven categories:

- 1) Evarts Street Interchange
- 2) MD 202 Interchange Modifications
- 3) Arena Drive Interchange - Diamond
- 4) Arena Drive Interchange - Loop Ramps
- 5) Arena Drive Interchange - Median Ramp
- 6) Arena Drive Interchange - Single Point Diamond
- 7) USAir Arena Parking

A summary of the improvements that were developed under each category and the reasons for elimination of those improvements not included with Alternative 3 is as follows:

- 1) Evarts Street Interchange: Two options were considered and dropped because they would have required: reconstruction of noise walls just completed along southbound I-95/I-495, right-of-way from the H.P. Johnson Park, and elimination of nearly 400 parking spaces at Landover Mall, and would have resulted in inferior traffic operations, as compared to Alternative 3.
- 2) MD 202 Interchange Modifications: Three options were considered. The first option, the “roller coaster” ramp, would consist of a direct connection between southbound I-95/I-495 and westbound Sheriff Road. The ramp would split from the existing southbound I-95/I-495/westbound MD 202 ramp, continue under the western end span of the MD 202 bridge, then climb over the existing southbound to eastbound loop ramp and eastbound to southbound directional ramp and tie-in to Sheriff Road. A second option would consist of reconstruction and realignment of the southwest quadrant ramps. This second option would have the same take-off from southbound I-95/I-495 as the Option 1 ramp, but would require reconstruction of the loop ramp and outer ramp in the southwest quadrant to provide a direct connection to westbound Sheriff Road. Although these options would provide the

advantages of having daily use, they were dropped from consideration because they provide substandard ramp grades and geometrics (as compared to American Association of State Highway and Transportation Officials [AASHTO] criteria), inconsistency with the master plan and have higher costs (\$11 million to \$13 million) as compared to Alternative 3 (\$7.3 million for west side ramps providing a similar range of movements).

- 3) Arena Drive Partial Diamond Interchange: Initially, analysis was conducted to determine if a ramp in the northwest quadrant of I-95/I-495 at Arena Drive, providing the southbound to westbound movement, would be adequate to meet the needs of the project. Consideration of this ramp alone was dropped from consideration because the return movement would not be provided, but the ramp was incorporated in the improvement associated with Alternative 3. A second option which would include the southwest quadrant ramp to provide a return movement to I-95/I-495 was then considered. Although it was determined that these two western ramps satisfy the initial needs of the area, as background traffic growth continued as a result of planned development east of I-95/I-495, east side ramps would be needed to allow the interchange to function satisfactorily. Therefore, all four interchange ramps were included in Alternative 3.
  
- 4) Arena Drive Interchange - Loop Ramps: Two options were considered for providing southbound I-95/I-495 loop ramps at Arena Drive. Option 1 would provide a standard loop ramp in the southwest quadrant to carry southbound I-95/I-495 traffic under the Arena Drive bridge to an intersection with the south side of Arena Drive. Option 2 would be similar to Option 1, but would provide a tighter loop ramp to allow more distance between the ramp and Brightseat Road intersections with Arena Drive. These options were dropped from consideration because of stormwater management pond impacts and operational concerns with regard to the closely spaced ramp and Brightseat Road intersections.

- 5) Arena Drive Interchange - Median Ramps: This alternative would provide reversible one lane median ramps at the Arena Drive bridge, to and from northbound and southbound I-95/I-495. These ramps would be used for ingress and egress to the proposed stadium and USAir Arena. No additional right-of-way would be required and there would be no weave between the MD 202 and Arena Drive interchanges or between the MD 214 and Arena Drive interchanges. This alternative was dropped from consideration because of the costs associated with the necessary widening of the median (and therefore, outside widening of I-95/I-495), the potential for mainline queuing in the fast lane and the cost of retaining walls and construction in general in the Interstate median. The total cost for this alternative was estimated to be between \$20 million and \$25 million.
  
- 6) Arena Drive Interchange - Single Point Diamond: This alternative would be similar operationally to the full diamond interchange; however all four legs of the interchange would converge a single point on the Arena Drive bridge. This alternative was dropped from consideration because of cost (\$22 million-\$25 million), difficulties with construction staging and greater wetland and stream impacts as compared to the other alternatives.
  
- 7) USAir Arena Satellite Parking: Analysis was conducted to determine if various combinations of USAir Arena parking/shuttle bus service could be provided to optimize the operations of or alleviate the need for a major interchange improvement at MD 202, MD 214 and/or Arena Drive to satisfy stadium ingress/egress needs. This alternative was dropped from consideration primarily for the following two reasons: First, traffic accessing an event would need to use the same interchanges, where there are currently problems during USAir Arena events, whether it would be going to USAir Arena or the proposed stadium site. Therefore, the interchange volumes and operations would be basically the same with or without satellite parking. Also, the USAir Arena parking capacity would only satisfy approximately 25% of the stadium's needs.



**5. Related Documentation and Approvals**

In addition to this Environmental Assessment, there are several Federal and State-required documents and permit applications that are being completed as part of, or in some relationship to the Proposed Action, including the following:

- a. An “Approval Request for Access to Interstate Route 95/495 at Arena Drive, Prince George’s County, Maryland” has been submitted to the Federal Highway Administration.
- b. Approval of a Categorical Exclusion will be requested from the Federal Highway Administration for the limited use of right-of-way on I-95/I-495 to construct a four lane wide bridge structure to carry Arena Drive over I-95/I-495, an improvement that has been included in the approved Largo- Lottsford and Landover and Vicinity Master Plans.
- c. A “Joint Federal/State Application for the Alteration of Any Floodplain, Waterway or Wetland Area in Maryland,” and accompanying report entitled, “Project Description, Avoidance/Minimization and Mitigation Report for MD 202/I-95 Interchange, MD 214/I-95 Interchange and Arena Drive/I-95 Interchange” have been submitted to the Maryland Department of Natural Resources and the U.S. Army Corps of Engineers. This application and report also address impacts associated with local roadway network improvements, such as Summerfield Boulevard, Brightseat Road, etc.
- d. An “Environmental Assessment Form (EAF)”, in accordance with the Maryland Environmental Policy Act (MEPA), will be completed to document the effects of all local roadway network improvements.

**6. Summary of Environmental Impacts**

A summary comparison of impacts associated with the alternatives under consideration is presented in Table S-1, and briefly described below.

**Socioeconomic**

The social and economic impacts and benefits associated with the proposed action are primarily traffic related. This document addresses the traffic related effects associated with each alternative considered throughout the study area, as applicable, and the natural environmental impacts resulting from the proposed ramps and ramp improvements associated with Alternative 3. Environmental considerations for the projects and improvements included with the background transportation network, in place for all three alternatives, have been addressed as part of other documentation and permitting processes.

Alternative 1 is not viable to handle traffic from stadium events. With Alternative 1, weekday congestion and traffic operational problems would continue to occur at the MD 202 and MD 214 interchanges. Although Alternative 1 would clearly result in better Interstate and local roadway traffic operations on Sundays (with no stadium traffic), as compared to Alternatives 2 and 3 (with stadium traffic), weekday traffic operations would generally be worse at the MD 202 and MD 214 interchanges. No additional accommodation would be provided for the master plan-designated employment centers adjacent to I-95/I-495, between MD 202 and MD 214. And no improvement in operations would be provided for vehicles accessing events at USAir Arena.

Alternative 2 would result in identical traffic operational conditions to Alternative 1 on weekdays. On Sundays, Alternative 2, which considers stadium event traffic, would result in better Interstate levels of service as compared to Alternatives 1 or 2 on the weekdays.

On the local traffic network, several significant traffic movement restrictions would be required with Alternative 2 to provide reasonable ingress and egress operations to the stadium:

- Eastbound MD 202 would be closed to through traffic at the Brightseat Road intersection (left and right turns would be permitted), diverting of approximately 1,050 vehicles.

- Northbound Brightseat Road traffic at the MD 202 intersection would only be allowed to turn right, diverting approximately 370 vehicles.
- The westbound MD 214 to northbound I-95/I-495 movement would be prohibited. This traffic would be detoured to the MD 202 interchange, affecting approximately 520 vehicles.
- Westbound MD 214 would be reduced from three to two lanes between MD 202 and I-95/I-495 to create additional left turn storage for the westbound MD 214 to southbound I-95/I-495 movement.

Generally, Alternative 2 Sunday-event traffic volumes would be higher on Brightseat Road and Summerfield Boulevard than Alternative 3 Sunday volumes and much higher than Alternative 1 weekday or Sunday volumes. The egress time from a stadium event would be approximately 10 minutes longer with Alternative 2 than with Alternative 3. Although the ingress and egress times for Alternative 2 are projected to remain reasonable, the Sunday operations plan has little or no redundancy in the roadway system. Any incident at one of the interchange points or key intersections (e.g., Brightseat Road at MD 202 which up to 40% of event traffic would use) would substantially inhibit ingress and egress, access to residential neighborhoods and emergency vehicle response times.

Interstate operations (mainline, weaves, merges and diverges) on Sundays with Alternative 3 would generally be improved as compared to Alternative 1 during the weekdays, as traffic volumes on weekdays will be as much as 18% higher for the northbound I-95/I-495 PM peak than for the post event Sunday condition.

Alternative 3 would provide substantial relief at the MD 202 and MD 214 interchanges at I-95/I-495 for Sunday traffic as compared to Alternative 2. This reduction in volumes at the MD 202 and MD 214 interchanges with Alternative 3, as compared to Alternative 2, would be carried forward to the local roadways such as Summerfield Boulevard and Brightseat Road. During ingress to stadium events, Alternative 3 would result in a 23% traffic volume reduction on Summerfield Boulevard and a 41% traffic volume reduction on Brightseat Road, as compared to Alternative 2. During egress,

Alternative 3 would result in 15% and 22% reductions on Summerfield Boulevard and Brightseat Road, respectively, as compared to Alternative 2.

The most significant advantage that Alternative 3 provides is redundancy in the roadway network for stadium event traffic. With an increase from two to three in the number of interchange points from I-95/I-495 to serve the study area, the Interstate and local roadways would be substantially more capable of operating satisfactorily through an Interstate mainline, ramp or intersection incident, than they would without the access improvements.

Only Alternative 3 improvements associated with the Arena Drive interchange ramps require right-of-way. The amount of right-of-way would be 11.6 acres from 8 business/commercial properties for the ultimate diamond interchange construction.

Executive Order (EO) 12898, "Federal Actions to Address Environmental Justice in Minority and Low-Income Populations," requires the assessment of disproportionately high and adverse impacts upon minority and low-income populations resulting from proposed federal actions. As the study area contains a relatively high percentage of such populations, the effects of each of the proposed alternatives were examined with respect to public participation, community impacts, access, traffic, air quality and noise.

Extensive public involvement, through workshops, hearings, televised testimony and civic association meetings and briefings were and continue to be part of the transportation planning and master plan amendment process. Traffic analysis and analysis of traffic related impacts (e.g., access, noise, air quality, etc.), which considered the effects of providing and not providing Interstate access improvements on the communities and neighborhoods in the area, determined that there would not be disproportionately high and adverse impacts upon minority populations resulting from any of the alternatives. Alternative 2 would result in slightly higher noise levels and levels of traffic congestion on the local roadways than Alternative 3 due to higher traffic volumes, as the interchange ramps between I-95/I-495 and Arena Drive will provide an additional access point from the Interstate that does not route traffic along or through existing neighborhoods or communities.

No property from any publicly-owned public parklands or recreation areas would be required with any of the alternatives.

The State Historic Preservation Officer (SHPO) has determined that there is one site in the project area, Waring's Grove, that is on or eligible for the National Register of Historic Places and that the proposed alternatives will have *no effect* on Waring's Grove. Regarding archeological resources, the SHPO has concurred that, based on the results of field investigations, there are no sites that meet criteria for eligibility in the National Register of Historic Places, and further archeological investigation is not warranted.

The MD 202 and MD 214 interchange improvements and the Arena Drive interchange ramps are consistent with the 1982 Prince George's County General Plan, the 1993 Landover and Vicinity Master Plan and the 1990 Largo - Lottsford Master Plan. The amendments to the 1990 Largo-Lottsford Master Plan, the 1993 Landover and Vicinity Master Plan and the Master Plan for Transportation to include interchange ramps between the Capital Beltway and Arena Drive have been adopted by the Prince George's County Planning Board, and are awaiting approval from the County Council.

### Noise

The projected noise levels for the design year 2020 indicate that the Federal Highway Administration (FHWA) Noise Abatement Criteria (67 dBA) is approached or exceeded under each of the three alternatives considered at 2 of the 3 noise sensitive areas along I-95/I-495. However, the interchange ramps, widening or other modifications proposed with Alternative 3 result in less than a 3 dBA increase in noise levels for the year 2020 as compared to Alternatives 1 and 2 or the baseline condition (6-lane divided I-95/I-495); therefore, noise mitigation is not considered reasonable as part of any of these alternatives..

Sensitive receptors located along the local study area roadways that would experience changes in traffic, and thus noise levels, depending upon the alternative considered, were evaluated. Noise levels for Sunday event traffic at these receptors would decrease with Alternative 3 as compared to Alternative 2. Because the noise at these receptors is from non-federally funded improvements, no barriers were analyzed. Barriers will be analyzed, where appropriate, as part of the State and County-funded road improvements.

**Air Quality**

The State and National Ambient Air Quality Standards will not be exceeded under any of the alternatives considered.

**Natural Resources**

Alternatives 1 and 2 would not result in any impact to natural resources.

With Alternative 3, the construction of Ramp 'B' in the southwest quadrant of the proposed I-95/I-495 interchange at Arena Drive would require the placement of fill within an existing stormwater management pond and the elimination of the 100-year emergency spillway. A clay cut-off and core trench would be implemented with ramp construction to ensure ramp embankment stability. The riser structure for the pond would be replaced to provide 100-year overflow capacity. This pond, constructed to manage storm drainage from the commercial developments along Brightseat Road, was designed with excess capacity, and is sufficiently sized, even with slightly reduced storage volume as a result of Ramp 'B', to provide quantity and quality control management for the proposed improvements.

Alternative 3 would impact 1,010 Linear Feet of Waters of the U.S. associated with a tributary of Southwest Branch for the ultimate interchange configuration. Mitigation will be provided on-site. Mitigation, time of year construction restrictions, sediment and erosion control measures, and storm water management practices, approved by the Maryland Department of the Environment, will be strictly enforced during construction to minimize impacts to water quality and wetlands. Approximately 0.10 acre of 100-year floodplain, as designated by the Federal Emergency Management Agency (FEMA), would be impacted by ramp improvements in the southwest quadrant of the I-95/I-495 interchange at MD 214. No wetlands would be impacted by any of the Alternative 3 improvements

The study area contains some prime farmland soils; however, due to the urbanized nature of the land use in the area, a Farmland Conversion Impact Rating Form is not required for this project to comply with the Federal Farmland Protection Policy Act

No known federal or state listed threatened or endangered species exist within the project area. Woodland impacts would be 11.3 acres with Alternative 3. Any disturbed habitat would not be densely populated due to its proximity to the existing highway.

Construction impacts will include noise, dust sedimentation, access and minor commercial establishment disruption. Mitigation through careful construction timing, revegetation, erosion and sediment control, placement of construction staging areas, and implementation of effective maintenance of traffic plans will minimize both short-term and long-term impacts of this transportation improvement project.

No land use was identified with the potential for hazardous waste contamination.

24

**TABLE S-1**  
**I-95/I-495 (CAPITAL BELTWAY) ACCESS IMPROVEMENTS FROM MD 202 TO MD 214**  
**(INTERSTATE ACCESS POINT APPROVAL)**  
**SUMMARY OF ALTERNATIVES**

ANALYSIS ITEM	ALT. 1	ALT. 2	ALTERNATIVE 3 (PROPOSED ACTION APPROVED)			
			INTERCHANGE LOCATION			TOTAL
			I-95 at MD 202	I-95 at ARENA DRIVE	I-95 at MD 214	
Total Length of Improvement (Miles)	0	0	0.90	1.56	0.77	3.23
<u>Socioeconomic</u>						
1. Relocations (Total Takes)						
a. Residences	0	0	0	0	0	0
b. Businesses	0	0	0	0	0	0
c. Church/School	0	0	0	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
2. Number of Properties Affected						
a. Residential	0	0	0	0	0	0
b. Business/Commercial	0	0	0	8	0	8
c. Church/School	0	0	0	0	0	0
d. Parkland or Recreation Area	0	0	0	0	0	0
e. Historic/Archeological Sites	0	0	0	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>8</b>	<b>0</b>	<b>8</b>
3. Right-of-Way Required - acres						
a. Residential	0	0	0	0	0	0
b. Business	0	0	0	10	0	10
c. Church/School	0	0	0	1.6	0	1.6
d. Historic/Archeological Sites	0	0	0	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>11.6</b>	<b>0</b>	<b>11.6</b>
4. Consistent with area land use plans	No	No	Yes	Yes	Yes	Yes
<u>Natural Environment<sup>1</sup></u>						
1. Number of stream reloc. - Linear Ft.	0	0	0	2-1,010	0	2-1010
2. Number of stream crossings	0	0	0	3	0	3
3. Affected threatened or endangered species	0	0	0	0	0	0
4. Area of prime farmland affected - acres	0	0	0	0	0	0
5. 100-year Floodplain impacted - acres	0	0	0	0	0.10	0.10
6. Wetlands affected - acres	0	0	0	0	0	0
7. Waters of the U.S. affected - linear feet	0	0	0	1,010	0	1,010
8. Woodlands impacted - acres	0	0	0	11.3	0	11.3
<u>Noise<sup>2</sup></u>						
Number NSA's exceeding abatement criteria or increasing 10 dBA or more over ambient	2 of 3	2 of 3	N/A	2 of 3	N/A	2 of 3
<u>Air Quality</u>						
CO violations of 1-hr or 8-hr standards	0	0	0	0	0	0
<u>Cost (Millions)<sup>3</sup></u>						
<b>TOTAL CONSTRUCTION</b>	<b>0</b>	<b>0</b>	<b>\$0.9</b>	<b>\$13.9</b>	<b>\$1.8</b>	<b>\$16.6</b>

<sup>1</sup> The impacts shown are for the full interchange ramps.  
<sup>2</sup> This summary reflects results for receptors along I-95/I-495. The receptors along Summerfield Boulevard and Brightseat Road are not impacted by the modifications to the MD 202 and MD 214 interchanges or by the construction of the proposed interchange at I-95/I-495.  
<sup>3</sup> Cost for full interchange, not including Preliminary Engineering or Right-of-way



**TABLE OF CONTENTS**

**TABLE OF CONTENTS**

**PAGE NO.**

**SUMMARY** ..... S-1

**TABLE OF CONTENTS** ..... i

**LIST OF FIGURES** ..... v

**LIST OF TABLES** ..... vii

**I. DESCRIPTION OF PROPOSED ACTION** ..... I-1

    A. Project Location ..... I-1

    B. Project Description ..... I-1

**II. PURPOSE AND NEED** ..... II-1

    A. Introduction ..... II-1

    B. Existing Conditions ..... II-1

        1. Roadway Functions ..... II-1

        2. Interstate Mainline and Ramp Operations ..... II-2

        3. Local Roadway Network ..... II-3

    C. Future Conditions ..... II-4

        1. Planned Development ..... II-4

        2. Study Area Transportation Recommendations Contained in the  
            Master Plans ..... II-6

        3. Program Status ..... II-7

        4. Year 2020 Traffic Operations ..... II-7

    D. Accident History ..... II-12

    E. Conclusion ..... II-12

**TABLE OF CONTENTS (Cont'd)**

**PAGE NO.**

**III. EXISTING ENVIRONMENT** ..... III-1

**A. Social Environment** ..... III-1

        1. Demographics ..... III-1

        2. Community Facilities and Services ..... III-3

**B. Economic Environment** ..... III-6

**C. Land Use** ..... III-7

        1. Existing Land Use ..... III-7

        2. Hazardous Materials/Waste Sites ..... III-8

        3. Future Land Use ..... III-8

**D. Cultural Resources** ..... III-9

        1. Historic Structures ..... III-9

        2. Archaeological Sites ..... III-10

**E. Natural Environment** ..... III-10

        1. Topography/Geology/Soils ..... III-10

        2. Aquatic Resources/Wetlands ..... III-11

        3. Terrestrial Resources ..... III-15

        4. Threatened and Endangered Species ..... III-16

**F. Existing Noise Conditions** ..... III-16

**G. Existing Air Quality** ..... III-18

28

**TABLE OF CONTENTS (Cont'd)**

**PAGE NO.**

**IV. DESCRIPTIONS OF ALTERNATIVES CONSIDERED . . . . . IV-1**

A. Alternatives Retained . . . . . IV-1

1. Alternative 1 - Proposed Action Not Approved - No Stadium  
Traffic - Background Roadway Network in Place . . . . . IV-1

2. Alternative 2 - Proposed Action Not Approved - With  
Stadium Traffic - Background Roadway Network in Place . . . IV-2

3. Alternative 3 - Interstate Access Point Approval Granted for  
Improvements at the Existing MD 202 and MD 214 Interchanges  
with I-95/I-495 and Construction of Special Use Ramps Between  
Arena Drive and I-95/I-495 - Background Roadway Network  
In Place . . . . . IV-3

B. Alternatives Dropped from Further Consideration . . . . . IV-6

**V. ENVIRONMENTAL CONSEQUENCES . . . . . V-1**

A. Social . . . . . V-1

1. Interstate Traffic Operations . . . . . V-1

2. Local Traffic Operations . . . . . V-7

3. Disruption of Neighborhoods and Communities . . . . . V-11

4. Right-of-Way Requirements . . . . . V-12

5. Environmental Justice/Title VI Statement . . . . . V-13

6. Effects on Community Facilities and Access . . . . . V-19

B. Economic . . . . . V-21

1. Effects on Local Business . . . . . V-21

2. Effects on Regional Business and Economy . . . . . V-21

3. Effects on Tax Base . . . . . V-22

29

**TABLE OF CONTENTS (Cont'd)**

**PAGE NO.**

C. Land Use ..... V-23

D. Cultural Resources ..... V-23

    1. Historical Structures ..... V-23

    2. Archeological Sites ..... V-24

E. Natural Environment ..... V-24

    1. Effects on Geology, Topography, Soils ..... V-24

    2. Water Resources/Wetlands ..... V-26

    3. Hazardous Materials/Waste Sites ..... V-31

    4. Terrestrial Resources ..... V-31

    5. Threatened and Endangered Species ..... V-32

F. Noise Impacts ..... V-32

    1. Noise Prediction Methodology Using FHWA Model ..... V-32

    2. Noise Prediction Results ..... V-36

    3. Construction Noise ..... V-39

G. Air Quality ..... V-42

    1. Objectives and Type of Analysis ..... V-42

    2. Construction Impacts ..... V-42

    3. Receptor Sites ..... V-43

    4. Results of Microscale Analysis ..... V-43

    5. Conformity With Regional Air Quality Planning ..... V-44

    6. Analyses Input ..... V-47

**VI. COMMENTS AND COORDINATION**

## LIST OF FIGURES

<u>FIGURE</u>	<u>DESCRIPTION</u>	<u>FOLLOWS PAGE</u>
S-1	Location Map	S-2
S-2	Study Area	S-2
S-3	Roadway Improvements in Place as Part of the Local Transportation Network	S-2
S-4	Alternative 3	S-2
I-1	Study Area	I-1
II-1	2020 Traffic Volumes Weekday	II-7
II-2	2020 Traffic Volumes Without Stadium Traffic - Sunday	II-7
II-3	2020 Traffic Volumes With Stadium Traffic - Sunday	II-7
III-1	Census Tracts	III-2
III-2	Community Facilities and Environmental Features	III-4
III-3	Existing Land Use	III-8
III-4	Future Land Use	III-8
III-5	Wetlands and Waters of the U.S.	III-14
III-6	Air/Noise Receptor Locations	III-18
IV-1	Roadway Improvements in Place as Part of the Local Transportation Network	IV-2
IV-2	Alternative 3 - Plan	IV-4
IV-3	Alternative 3 - Plan	IV-4
IV-4	Alternative 3 - Plan	IV-4
IV-5	Alternative 3 - Plan	IV-4
IV-6	Alternatives Dropped from Consideration	IV-6
IV-7	Alternatives Dropped from Consideration	IV-8
IV-8	Alternatives Dropped from Consideration	IV-8
IV-9	Alternatives Dropped from Consideration	IV-8

**LIST OF FIGURES (Cont.)**

<b><u>FIGURE</u></b>	<b><u>DESCRIPTION</u></b>	<b><u>FOLLOWS PAGE</u></b>
IV-10	Alternatives Dropped from Consideration	IV-10
V-1	2020 Traffic Volumes Alternative 3 Weekday	V-1
V-2	2020 Traffic Volumes Alternative 3 Sunday	V-1
V-3	Pre-Game Traffic Movement Prohibitions Alternative 2 Sunday	V-3

## LIST OF TABLES

<u>TABLE</u>	<u>TITLE</u>	<u>PAGE</u>
S-1	Summary of Alternatives	S-17
II-1	Existing Weekday Traffic Volumes and Levels of Service (I-95/I-495 in the Vicinity of MD 202 and MD 214)	II-2
II-2	2020 Interstate Basic Freeway Section Levels of Service	II-8
II-3	2020 Level of Service Summary For Ramp Roadways at MD 202 and MD 214	II-9
II-4	2020 Level of Service Summary For Ramp Weave Sections at the MD 202 and MD 214 Interchanges with I-95/I-495	II-10
II-5	2020 Level of Service Summary For Intersections in the Vicinity of the MD 202 and MD 214 Interchanges with I-95/I-495	II-11
II-6	Accident Study Worksheet (I-95/I-495: MD 214 to I-595)	II-13
II-7	Accident Study Worksheet (MD 214: Ritchie Road to MD 202)	II-14
II-8	Accident Study Worksheet (MD 202: Lottsford Road to Brightseat Road)	II-15
II-9	Ramp Accidents 1990 - 1992	II-16
III-1	Population and Growth in the Study Area	III-2
III-2	NSA's and Ambient Noise Levels	III-17
V-1	Interstate Ramp Roadway Operations in 2020	V-4
V-2	Interstate Weave Operations in 2020	V-5
V-3	Interstate Ramp Junction Operations in 2020	V-6
V-4	Interstate Basic Freeway Section Operations in 2020	V-6
V-5	Vehicles Per Hour Along Summerfield Boulevard	V-9
V-6	Vehicles Per Hour Along Brightseat Road	V-10
V-7	Intersection Level of Service Operations in 2020	V-11
V-8	Preliminary Property Tabulation	V-13
V-9	Minority and Population Below Poverty Level	V-15
V-10	Noise Abatement Criteria	V-33
V-11	2020 Noise Abatement Analysis Summary	V-41
V-12	Proposed I-95/I-495/Arena Drive Interchange, Prince George's County, Maryland- Weekday CO Concentrations from CAL3QHC	V-45



**LIST OF TABLES**

<b><u>TABLE</u></b>	<b><u>TITLE</u></b>	<b><u>PAGE</u></b>
V-13	I-95/I-495/Arena Drive Interchange, Prince George's County, Maryland - Sunday CO Concentrations from CAL3QHC	V-46
V-14	Proposed I-95/I-495/Arena Drive Interchange - Meteorological Variables and Other Constants Used in CAL3QHC	V-50

**I. DESCRIPTION OF PROPOSED ACTION**

**I. DESCRIPTION OF PROPOSED ACTION**

**A. Project Location**

The proposed project is located in the central part of Prince George’s County, Maryland (See Figure I-1). The study area includes the I-95/I-495 (Capital Beltway) vicinity, generally from north of MD 202 to south of MD 214. This portion of the Capital Beltway serves dual roles, serving the Nation’s Capital and the heavily populated suburbs of Washington, D.C., and serving as a major link for I-95, which is the primary north-south corridor on the Eastern Seaboard. The project location is approximately 2.8 miles south of U.S. 50 and 4.7 miles north of MD 4, which, in addition to MD 202 and MD 214, are the major east-west links near the study area.

**B. Project Description**

I-95/I-495 (Capital Beltway) is a primary roadway on the State system, and is classified as Interstate on the federal system. I-95/I-495 currently has two interchanges in the study area, MD 202 and MD 214. MD 202 and MD 214 are both secondary roadways on the State system, with a 6-lane divided typical section no access control.

The Washington Redskins football team has approval to construct a new 78,600-seat stadium at the Wilson Farm site, located west of the Capital Beltway, south of MD 202, and is currently constructing the facility. Based on traffic projections, the majority of the patrons are expected to arrive at the stadium via the Capital Beltway. The two existing interchanges at MD 202 and MD 214 are the only direct access points between the Capital Beltway and the stadium and will not provide adequate capacity to accommodate the traffic volumes expected to be generated by the proposed stadium. In addition, MD 214 and MD 202, in the vicinity of the Capital Beltway, and their interchanges with the Capital Beltway, are experiencing operational problems and high accident rates under the existing conditions.

The purpose of this project is to address the traffic congestion along the Capital Beltway and its interchanges at MD 202 and MD 214, and provide the most efficient access between the Capital Beltway and the stadium.



**II. PURPOSE AND NEED**

**II. PURPOSE AND NEED**

**A. Introduction**

The request for Interstate Access Point Approval for improvements to the existing MD 214 and MD 202 interchanges and for the construction of a new interchange between I-95/I-495 (Capital Beltway) and Arena Drive is required to relieve congestion on the two existing interchanges and to provide improved access to serve existing and planned development for the area. Existing development includes several major business and commercial centers, residential areas and the USAir Arena. The planned development includes the expansion of employment facilities and social centers, immediately adjacent to I-95/I-495, and a new Washington Redskins football stadium. The stadium site, which is currently under construction, is formerly known as the Wilson Farm and is located just west of the Capital Beltway, south of the MD 202 interchange in central Prince George’s County. Jack Kent Cooke, Inc. has completed the appropriate environmental analysis required to obtain the necessary federal and state permits for construction of the stadium.

Currently, there are two interchanges along the Capital Beltway, MD 214 and MD 202, that serve the area. Access to the stadium and adjacent proposed developments would be provided by three county roads: Brightseat Road from the north, Summerfield Boulevard from the south and Arena Drive from the east. The impending land use is expected to impact traffic mobility and result in substantial traffic congestion along the Capital Beltway, and at these interchanges, if additional or improved access is not provided. This additional congestion would result in less desirable traffic operations and less safe conditions along this portion of the Capital Beltway.

**B. Existing Conditions**

**1. Roadway Functions**

*I-95/I-495 (Capital Beltway)*, a primary roadway on the State system; is eight lanes wide, divided, fully access controlled and carries approximately 172,000 vehicles per day. The federal functional classification of this roadway is Interstate.

**MD 202**, a secondary roadway on the State system; is four lanes wide, divided, has no access control and carries approximately 42,000 vehicles per day. The federal functional classification of this roadway is listed as Other Principal Arterial.

**MD 214**, a secondary roadway on the State system, is six lanes wide, divided, has partial access control and carries approximately 40,000 vehicles per day. The federal functional classification of this roadway is listed as Other Principal Arterial.

**2. Interstate Mainline and Ramp Operations**

The portion of the Capital Beltway within the study area serves dual roles, serving the Nation’s Capital and the heavily populated suburbs of Washington, D.C., and serving as a major link for I-95, which is the primary north-south corridor on the eastern seaboard. The current volumes and levels of service are summarized in Table II-1 below:

**TABLE II-1**

**EXISTING WEEKDAY TRAFFIC VOLUMES AND LEVELS OF SERVICE  
I-95/I-495 IN THE VICINITY OF MD 202 AND MD 214**

	NORTHBOUND		SOUTHBOUND	
	AM	PM	AM	PM
<b>PEAK HOUR VOLUME</b>	6720	6240	6050	6585
<b>NUMBER OF LANES</b>	4	4	4	4
<b>PEAK HOUR LEVEL OF SERVICE*</b>	D	D	D	D
<b>AVERAGE DAILY TRAFFIC</b>	172,000			

\*BASIC FREEWAY SECTION LOS

As seen in the above table, I-95/I-495 is currently operating at or near capacity during the weekday peak hours. However, the most significant operational problems typically being experienced in the study area are primarily associated with the MD 202 and MD 214 interchanges with the Capital Beltway. The most severe of these problems are summarized as follows:

**Condition:** Weekday morning peak hour

**Operational Problems:** For the loop ramp carrying I-95/I-495 southbound onto eastbound MD 202, the heavy volumes and sharp peaking characteristics of traffic on this ramp cause traffic to queue around the loop onto the shoulder of southbound I-95/I-495.

The left turn movement from westbound MD 214 onto Hampton Park Drive (just west of I-95/I-495) is particularly heavy, and there is an insufficient distance between the southbound to westbound ramp and the Hampton Park Boulevard intersection to adequately accommodate the lane changes.

**Condition:** USAir Arena event ingress

**Operational Problems:** Mainline I-95/I-495 queuing regularly extends up to 1/4 mile north of MD 202 and 1/2 to 3/4 mile south of MD 214 because of inadequate capacity at primarily the merge and weave sections associated with the interchanges.

### 3. Local Roadway Network

The existing weekday peak period levels of service at key intersections in the vicinity of I-95/I-495 are summarized as follows:

<u>INTERSECTION</u>	<u>AM LOS*</u>	<u>PM LOS*</u>
MD 202/Brightseat Road	A	D
MD 202/Arena Drive	B	A
MD 202/McCormick Drive	F	F
MD 202/Lottsford Road	E	D
Brightseat Road/Sheriff Road	A	A
MD 214/Brightseat Road/Hampton Park Blvd.	B	C
MD 214/Summerfield Blvd./Ritchie Road	C	D
MD 214/Hill Road/Shady Glen Drive	E	E

\* Level of Service (Defined Below)



**Level of Service - Signalized Intersections**

Level-of-service (LOS) for signalized intersections is defined in terms of delay. Delay is a measure of driver discomfort, frustration, fuel consumption, and lost travel time. Qualitatively, level-of-service criteria are stated as follows:

LOS A describes operations with very low delay.

LOS B describes operations where delay just starts to be noticeable.

LOS C describes operations with an average amount of perceived delay.

LOS D describes operations where delays begin to approach the acceptable levels and congestion becomes more noticeable.

LOS E describes operations considered to be the limit of acceptable delay.

LOS F describes operations which are considered to be unacceptable to most drivers (generally greater than 1 minute). This condition often occurs with oversaturation, i.e., when arrival flow rates exceed the capacity of the intersection.

**Level-of-Service - Ramps and Merge Areas**

Level-of-service for ramps and merge areas is defined in terms of driving turbulence.

LOS A represents unrestricted operations. Merging and diverging maneuvers are carried out without disruption to through vehicles. There is no noticeable turbulence in the ramp influence area.

At LOS B, minimal levels of turbulence exist. Merging and diverging maneuvers become noticeable to through drivers as speeds must be adjusted by merging and diverging drivers to smoothly fill available gaps and make lane changes within the ramp influence area. Speeds of vehicles in the influence area begin to decline slightly.

At LOS C, the level of merging or diverging turbulence becomes noticeable and the average

speed within the ramp influence area begins to decline. Driving conditions are still relatively comfortable at this level.

At LOS D, virtually all vehicles slow to accommodate merging or diverging maneuvers as turbulence levels become intrusive. Some ramp queues may form, but freeway operation remains stable.

At LOS E, speeds reduce to 50± miles per hour as the turbulence of merging and diverging maneuvers becomes intrusive to all drivers in the influence area. Both ramp and freeway queues begin forming as flow levels approach capacity limits.

LOS F represents breakdown, or unstable, operation. Queues have visibly formed on the freeway and on-ramps as approaching demand flows exceed the discharge capacity of the downstream freeway.

**C. Future Conditions**

**1. Planned Development**

Several parcels within the study area have the potential to undergo or are currently undergoing further development in accordance with the Master Plans. These include the following, which are discussed in more detail in Section III.C.2:

- The proposed Jericho Baptist Church site is located along the west side of Brightseat Road and is served by Arena Drive and Spectrum Drive. The total building square footage proposed is 213,410 square feet.
- The Spectrum 95 site is located primarily west of Brightseat Road. The site has a total area of 7.9 acres. The site is proposed to be developed for warehouse use with a total gross floor area of 82,386 square feet.
- The Wilson Farm property, one of the largest pieces of undeveloped property inside the Capital Beltway within Prince George’s County, is located along the south side of Sheriff Road, west of the Brightseat Strip Industrial Park area. The property has

a total area of 282.22 acres. JKC Stadium, Inc. is currently developing the property to provide a 78,600 seat stadium and 22,739 parking spaces. Also included will be an 80 acre neighborhood sports complex in the northwest quadrant of the site.

- The Largo Town Center is situated in the northwest quadrant of the intersection of MD 202 and MD 214. The area occupies approximately 66 hectares (162 acres). According to the Largo-Lottsford Master Plan, the Town Center is to be a mixed use development that will consist of different styles of multifamily residential units (approximately 1,500 dwelling units at build-out), retail commercial uses-approximately 300,000 square feet, a hotel and more than 1.3 million square feet of office space. This area is the first of several designated in the Master Plan as a Major Employment Area, east of I-95/I-495 in the vicinity of the MD 202 and MD 214 interchanges.
- A second Major Employment Area designated in the Master Plan would be on the south side of MD 214 on both sides Harry S. Truman Drive. In the Master Plan, it is estimated that more than 1.2 million square feet of office can be developed in this area.
- The Master Plan’s Employment Area 3 would be located just east of I-95/I-495, along the north side of MD 202. “Full” development of this area, which is contingent upon full construction of all area Master Plan-recommended transportation improvements, would consist of approximately 5.5 million square feet of employment area.

**2. Study Area Transportation Recommendations Contained in the Master Plans**

**The 1982 Prince George’s County General Plan** identifies the need for an overpass and interchange at Arena Drive and I-95/I-495.

**The 1993 Landover and Vicinity Master Plan** identifies the need for a grade separation at Arena Drive and I-95/I-495. This overpass is designed to serve traffic generated by the planned commercial centers on both sides of the Capital Beltway.

**The 1990 Largo - Lottsford Master Plan** - A new overpass is also identified at the Capital Beltway and Arena Drive. This overpass is part of an ultimate transportation concept based on the build-out land uses as recommended in the county master plans.

**Amendment to Master Plans** - The Prince George's County Planning Board recently (May, 1996) adopted an amendment to their 1990 Largo- Lottsford Master Plan, the 1993 Landover and Vicinity Master Plan and the Master Plan of Transportation to include an interchange along the Capital Beltway at Arena Drive to accommodate the stadium and other development. A master plan public hearing on this amendment was conducted in May, 1996. Final approval is pending from the County Council.

Note: The above 1990 and 1993 Master Plans recommend reconstruction of the Capital Beltway to 10 lanes, with major reconstruction of the MD 202 and MD 214 interchanges. The master plans also recommend significant improvements to MD 202 and MD 214 in the study area, including additional access controls and upgrades to signalized intersections.

**3. Program Status**

Funding for the construction of the initial stage of the I-95/I-495 ramps at Arena Drive and the improvements at the MD 202 and MD 214 interchanges is included in the Maryland Department of Transportation's FY 1996 to 2001 Consolidated Transportation Program for design, right-of-way acquisition and construction.

**4. Year 2020 Traffic Operations**

Projected weekday morning and evening peak traffic volumes for the Year 2020 are indicated on Figure II-1. Projected Sunday volumes are indicated on Figures II-2 and II-3 without and with stadium traffic, respectively. Levels of service associated with these traffic volumes at all applicable I-95/I-495 mainline segments and interchange analysis points, and intersections in the vicinity of the Interstate are summarized in Tables II-2 through II-5 below. Although stadium events may occur at times other than Sunday afternoons, this condition was the only one analyzed with stadium traffic, since it was found to represent the highest volumes of background traffic of any time during the week that stadium events could occur.

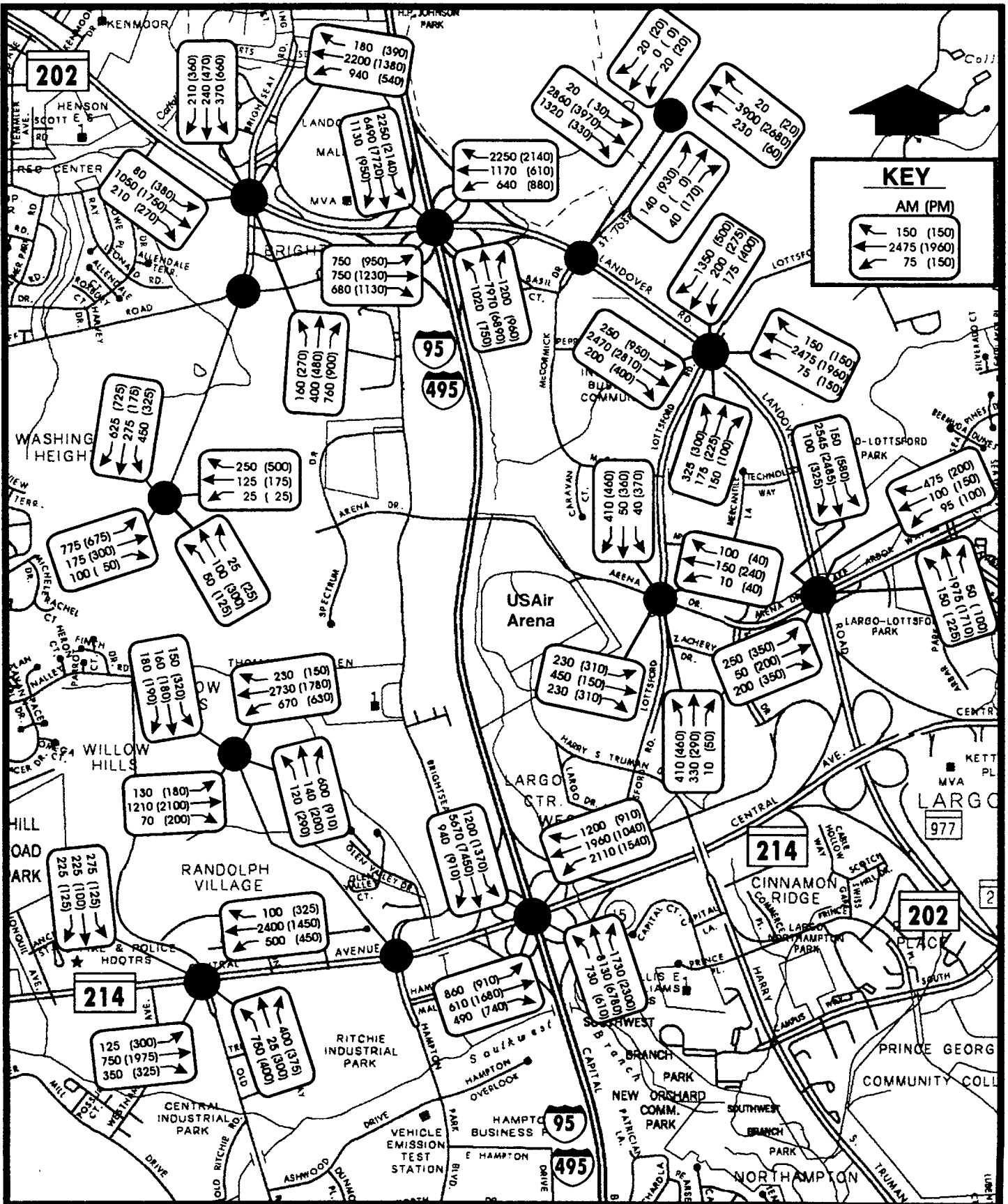
**TABLE II-2  
2020 INTERSTATE BASIC FREEWAY SECTION LEVELS OF SERVICE**

	Weekday Conditions				Sunday Conditions Without Stadium Traffic				Sunday Conditions With Stadium Traffic			
	AM Peak		PM Peak		Pre-Game Time Period*		Post-Game Time Period*		Pre-Game		Post-Game	
I-95/I-495 Basic Freeway Section	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
Between MD 202 and MD 214	E	E	D	F	C	C	D	D	C	C	D	D

\* Reflects the one-hour time period equivalent to pre-game and post-game operation.

As demonstrated in the level of service summaries, a significant number of capacity deficiencies will be present throughout the transportation network for the Year 2020 at various interchange analysis points and intersections in the study area. Although the Interstate ramps at the MD 202 and MD 214 interchanges generally have excess capacity for the weekday peak hours, the weave and merge/diverge sections between ramps will fail at nearly every location. The failing weave sections would lead to a greater probability of rear-end and sideswipe accidents and a greater likelihood of queuing onto the ramps and potentially onto the mainline.

The Sunday traffic operations plan with stadium traffic has been determined to result in reasonable ingress and egress times, assuming extensive use of traffic control by police and variable message signing to place restrictions on various movements throughout the roadway network. Analysis indicates that, although several arterial intersections and ramp weave sections would operate beyond their capacity, the duration of time in which capacity is exceeded would not be enough to cause gridlock between adjacent intersections or on mainline I-95/I-495. However, the Sunday operations plan has little or no redundancy in the roadway system. Any incident at one of the interchange points or key intersections would substantially inhibit ingress and egress, access to residential neighborhoods and emergency vehicle response.



**KEY**

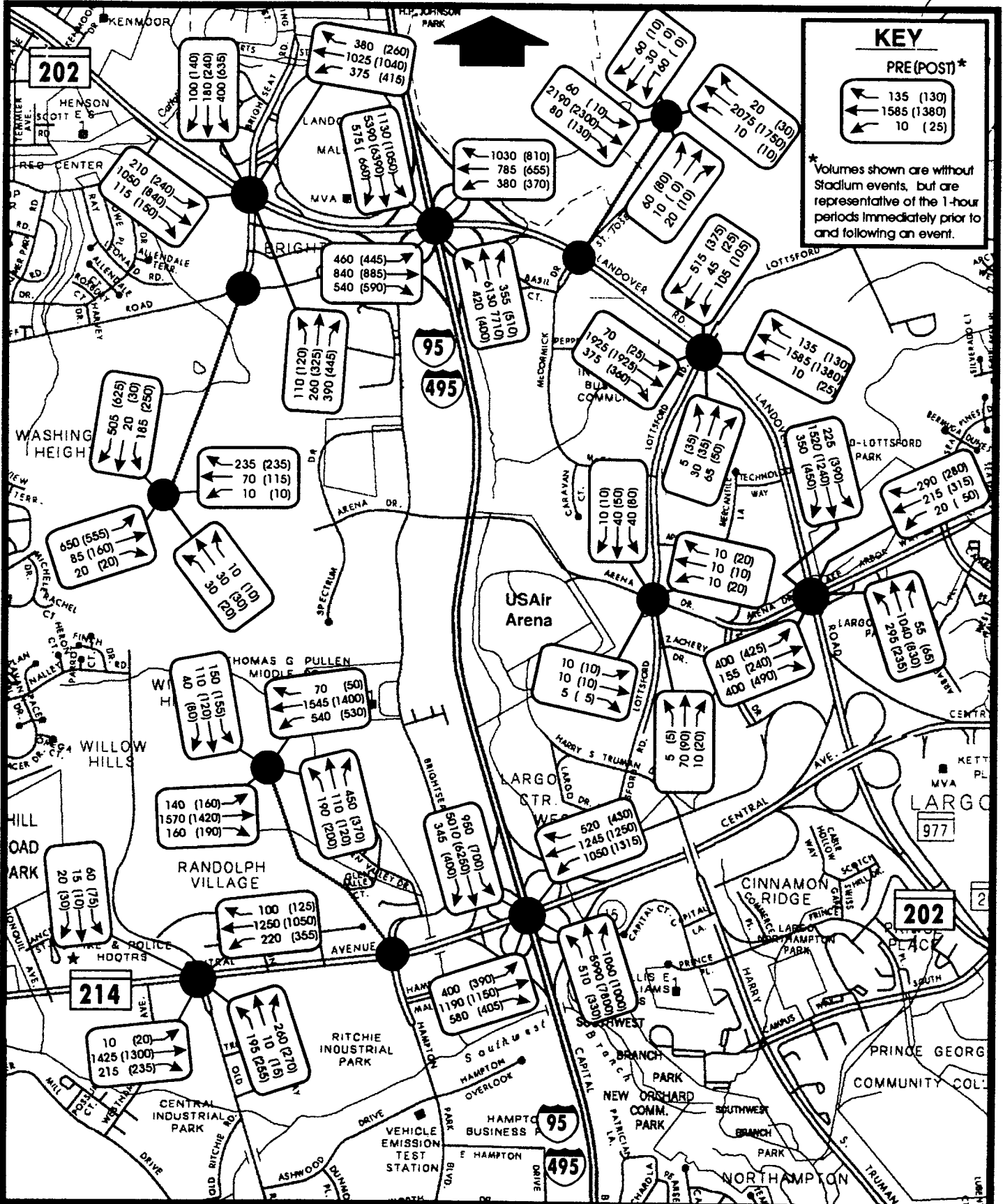
AM (PM)

← 150 (150)  
 ← 2475 (1960)  
 ← 75 (150)

**I-95 / I-495 (CAPITAL BELTWAY)  
 ACCESS IMPROVEMENTS  
 FROM MD 202 TO MD 214  
 (INTERSTATE ACCESS POINT APPROVAL)**

**2020 TRAFFIC VOLUMES  
 WEEKDAY**

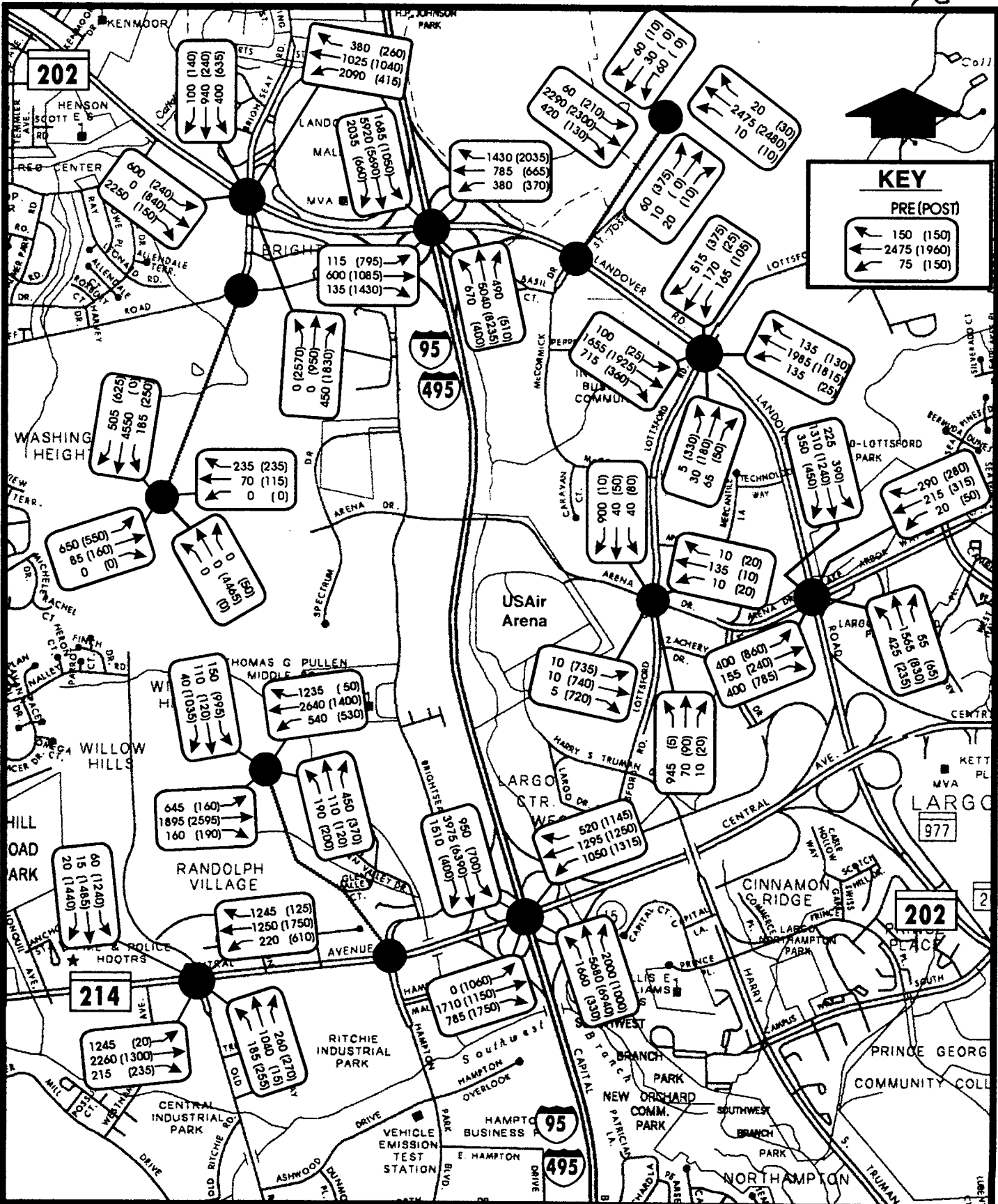
**FIGURE II - 1**



**I-95 / I-495 (CAPITAL BELTWAY)  
ACCESS IMPROVEMENTS  
FROM MD 202 TO MD 214  
(INTERSTATE ACCESS POINT APPROVAL)**

**2020 TRAFFIC VOLUMES  
WITHOUT STADIUM TRAFFIC  
SUNDAY**

**FIGURE II - 2**



**KEY**

PRE (POST)

← 150 (150)

← 2475 (1960)

← 75 (150)

**I-95 / I-495 (CAPITAL BELTWAY)  
ACCESS IMPROVEMENTS  
FROM MD 202 TO MD 214  
(INTERSTATE ACCESS POINT APPROVAL)**

**2020 TRAFFIC VOLUMES  
WITH STADIUM TRAFFIC  
SUNDAY**

**FIGURE II - 3**



**TABLE II-3**  
**2020 LEVEL OF SERVICE SUMMARY**  
**FOR RAMP ROADWAYS AT MD 202 AND MD 214**

Ramp Roadway	Weekday		Sunday			
	AM Peak	PM Peak	Without Stadium Traffic		With Stadium Traffic	
			Pre-Game*	Post-Game*	Pre-Game	Post-Game
<b>MD 202</b>						
A	C	C	B	B	E	B
C	C	B	A	A	B	A
D	F	F	C	B	D	E
F	B	C	A	A	A	C
G	F	F	C	C	E	C
H	B	C	C	C	A	E
J	C	C	A	A	A	A
<b>MD 214</b>						
A	C	C	A	A	D	A
B	E	D	C	C	A	C
C	A	B	B	A	E	A
D	C	C	B	A	B	C
E	E	F	C	C	E	C
F	C	C	A	A	A	C
G	D	D	C	B	C	B
H	C	C	B	B	E	E

\* These LOS are for the time period equivalent to pre-game and post-game operation.

**NOTE: SEE FIGURE S-4 FOR RAMP DESIGNATIONS**

**TABLE II-4**  
**2020 LEVEL OF SERVICE SUMMARY**  
**FOR RAMP WEAVE SECTIONS AT THE MD 202 AND MD 214 INTERCHANGES WITH I-95/I-495**

Interchange Weave Location (See Figure S-4 for Ramp Designations)	Weekday		Sunday			
	AM Peak	PM Peak	W/O Stadium Traffic		W/ Stadium Traffic	
			Ingress*	Egress*	Ingress	Egress
<b>MD 202</b>						
Ramp C and Ramp F	F(27)/D	F(28)/D	E/D	E/D	E/D	F(32)/E
Ramp G and Ramp F	F(26)/F(31)	F(26)/E	F(33)/E	F(33)/E	F(31)/E	F(31)/E
Ramp A and Brightseat Road	E/F(33)	E/E	D/D	D/D	F(29)/F(22)	D/D
Ramp J and McCormick Drive	F(26)/F(33)	F(32)/E	D/C	D/D	E/D	D/D
<b>MD 214</b>						
Ramp A and Brightseat Road	E/C	D/C	C/B	C/B	F(29)/D	C/B
Ramp B and Ramp G	F(27)/E	F(27)/E	F(33)/D	F(30)/D	N/A	F(31)/D
Ramp C and Ramp F	F(31)/E	F(33)/E	E/D	E/D	N/A	F(32)/C
Ramp C and Ramp B	F(29)/E	F(32)/E	C/B	B/B	N/A	E/D
Ramp F and Ramp G	F(30)/E(36)	F(29)/E	B/B	C/B	N/A	F(32)/E
Ramp D and MD 202 Ramp	D/D	D/C	C/B	B/B	C/B	C/B
Ramp E and MD 202 Ramp	E/E	F(33)/E	B/B	C/C	D/D	C/C
Ramp D and MD 202 Ramp J	C/B	B/B	A/A	A/A	A/A	B/B

Does not include stadium traffic, therefore, these LOS are for the time period equivalent to pre-game and post-game operation.

**Weaving LOS (Speed - MPH)/Non-Weaving LOS (Speed - MPH)**

**N/A=Weave is Not Applicable because traffic control by police and event signing would place restrictions on interchange movements**

50

**TABLE II-5**

**2020 LEVEL OF SERVICE SUMMARY  
FOR INTERSECTIONS IN THE VICINITY OF THE MD 202 AND MD 214  
INTERCHANGES WITH I-95/I-495**

Intersection	Weekday		Sunday w/o Stadium Traffic*		Weekday		Sunday w/ Stadium Traffic	
	AM	PM	Ingress	Egress	AM	PM	Ingress	Egress
1. MD 202/Brightseat	E	F <sub>1.20</sub>	B	C	E	F <sub>1.14</sub>	D	F <sub>1.13</sub>
2. MD 202/McCormick	F <sub>1.13</sub>	F <sub>1.64</sub>	C	C	F <sub>1.13</sub>	F <sub>1.64</sub>	D	D
3. MD 202/Lottsford	F <sub>1.23</sub>	F <sub>1.62</sub>	B	C	F <sub>1.23</sub>	F <sub>1.62</sub>	D	F <sub>1.05</sub>
4. MD 202/Arena	F <sub>1.21</sub>	F <sub>1.08</sub>	C	C	F <sub>1.21</sub>	F <sub>1.08</sub>	C	E
5. Sheriff/Brightseat	E	D	A	A	E	D	F <sub>1.10</sub>	F <sub>1.10</sub>
6. Arena/Brightseat	D	F <sub>1.10</sub>	A	A	D	F <sub>1.0</sub>	B	C
7. Arena/Lottsford	A	B	A	A	A	A	B	A
8. MD 214/Brightseat	D	D	B	B	D	D	F <sub>1.00</sub>	F <sub>1.13</sub>
9. MD 214/Summerfield	E	E	A	A	E	D	E	F <sub>1.10</sub>

\* Does not include stadium traffic; therefore, these LOS are for the time period equivalent to pre-game and post-game operation.

Note: Number associated with Level of Service "F" represents v/c ratio.

**D. Accident History**

Tables II-6 through II-8 provide a three year accident history (1992-1994) for the Capital Beltway, MD 202 and MD 214 in the vicinity of the proposed project (interchange construction and improvements).

The Capital Beltway, from MD 214 to US 50, experiences an overall accident rate of 56.72 accidents per one hundred million vehicle miles of travel (acc/100mvm), which is slightly higher than the statewide average of 54.70 for similarly designed facilities under state maintenance. Sideswipe accidents average 15.24 acc/100mvm which is significantly higher than the statewide average of 10.28 (Table II-6).

MD 214, from Ritchie Road to MD 202, is experiencing significantly higher total accident rates than the statewide average for similarly designed facilities under state maintenance. This segment of MD 214 has an overall accident rate of 316 acc/100mvm that is significantly higher than the statewide average rate of 270 acc/100mvm for similarly designed highways under state maintenance (Table II-7).

MD 202, from Lottsford Road to Brightseat Road, is experiencing accident rates slightly higher than the statewide average. Table II-8 provides detailed information about the accident history along this segment of MD 202. The high accident rates on I-95/I-495, MD 214 and MD 202 are primarily attributable to high levels of congestion.

In addition, the three year accident history (1990-1992) for the MD 214 and MD 202 interchange ramps are provided in Table II-9. Accident data for 1993 and later is not available for the interchange ramps because it is no longer collected in this manner.

**E. Conclusion**

As indicated by the level of service results for year 2020 traffic operations associated with I-95/I-495 and its interchanges with MD 202 and MD 214, master plan recommendations and the accident history at the existing interchanges, there is a need for interchange improvements at MD 202 and MD 214. In addition, the increases in traffic volumes projected as a result of approved development, and the inability of the existing roadway network to reliably handle the traffic volumes without disruption to communities along the local roads, indicate the need for an additional access point off I-95/I-495, away from existing residential communities.

# TABLE II-6 ACCIDENT STUDY WORKSHEET

## I-95/I-495: MD 214 TO I-595

STUDY WORKSHEET

DATE: 10/20/95  
NAME: D. Mettlen

LOCATION: IS0095 from MD0214 to IS0595  
 COUNTY: PRINCE GEORGES LOGMILE: 14.82 to 18.58 LENGTH: 3.76  
 TYPE CONTROL(S): 1U-100Z COMMENTS: \_\_\_\_\_

YEAR	1992	1993	1994	TOTAL	STUDYRATE	STATEWIDE
FATAL	1			1	0.14	OK   0.50
NO. KILLED	1			1		
INJURY	77	70	70	217	30.62	OK   28.90
NO. INJURED	154	113	113	380		
PROP DAMAGE	55	53	76	184	25.96	OK   25.20
TOTAL ACC.	133	123	146	402	56.72	OK   54.70
ANGLE		1	1	2	0.28	OK   0.30
REAR END	38	47	50	135	19.05	OK   19.80
FIXED OBJ.	25	25	32	82	11.57	OK   12.90
OPPOSITE DIR	1	1		2	0.28	OK   0.40
SIDESWIPE	35	29	44	108	15.24	*   10.80
LEFT TURN						0.20
PEDESTRIAN			1	1	0.14	OK   0.30
PARKED VEH.	5		6	11	1.55	OK   1.40
OTHER	29	20	12	61	8.61	OK   8.60
ANIMAL						
RAILROAD						
FIRE	2			2		
OVERTURN	1	1	2	4		
NON-COLL.	1	7	6	14		
UNKNOWN	25	12	4	41		
NIGHTTIME	51	45	23	119	29%	32%
WET SURFACE	29	19	23	71	17%	28%
INTERSECTION	1			1		
ALCOHOL REL.	10	11	13	34	8%	8%
RATE						
STATEWIDE X						
A D T	167000	172000	177000			
Z TRUCK TRAF						
V M T	229818720	236052800	242914800			
TOTAL VEH.	266	238	266	770		
TOTAL TRUCKS	33	38	36	107		
Z TRUCK	12	15	13	13		

\* - Significantly Higher than Statewide X      \*\* - Significantly Lower than Statewide x

# TABLE II-7 ACCIDENT STUDY WORKSHEET MD 214: RITCHIE ROAD TO MD 202

STUDY WORKSHEET

DATE: 10/20/95  
NAME: D. Mattu'lan

LOCATION: MD0214 from RITCHIE RD(CD0087 ) to MD0202  
COUNTY: PRINCE GEORGES LOGMILE: 2.76 to 4.56 LENGTH: 1.80  
TYPE CONTROL(S): SU-100X COMMENTS: \_\_\_\_\_

YEAR	1992	1993	1994	TOTAL	STUDYRATE	STATEWIDE
FATAL	1			1	1.13	OK   1.50
NO. KILLED	1			1		
INJURY	63	53	41	157	176.85*	148.10
NO. INJURED	112	104	86	302		
PROP DAMAGE	44	33	46	123	138.55OK	120.30
TOTAL ACC.	108	86	87	281	316.53*	269.90
ANGLE	4	5	4	13	14.64 **	43.50
REAR END	44	39	45	128	144.19*	88.80
FIXED OBJ.	3	5	5	13	14.64 OK	21.90
OPPOSITE DIR	1	2	4	7	7.89 *	3.70
SIDESWIPE	8	10	17	35	39.43 *	25.50
LEFT TURN	14	10	6	30	33.79 **	48.80
PEDESTRIAN	2	3		5	5.65 OK	8.30
PARKED VEH.	2		1	3	3.38 OK	4
OTHER	30	12	3	45	50.69 *	31.20
ANIMAL						
RAILROAD						
FIRE						
OVERTURN			1	1		
NON-COLL.		1	1	2		
UNKNOWN	30	11	1	42		
NIGHTTIME	32	26	11	69	24%	32%
WET SURFACE	29	25	16	70	24%	28%
INTERSECTION	54	44	31	129	45%	
ALCOHOL REL.	8	5	5	18	6%	8%
RATE						
STATEWIDE X						
A D T	44000	45000	46000			
% TRUCK TRAF						
V M T	28987200	29565000	30222000			
TOTAL VEH.	232	183	184	599		
TOTAL TRUCKS	11	10	12	33		
% TRUCK	4	5	6	5		

\* - Significantly Higher than Statewide X      \*\* - Significantly Lower than Statewide X

# TABLE II-8 ACCIDENT STUDY WORKSHEET MD 202: LOTTSFORD ROAD TO BRIGHTSEAT ROAD

STUDY WORKSHEET

DATE: 10/22/95

NAME: D. Mcullen

LOCATION: MD0202 from LOTTSFORD RD(C00064 ) to BRIGHTSEAT RD(C00076 )  
 COUNTY: PRINCE GEORGES LOGMILE: 8.78 to 10.05 LENGTH: 1.27  
 TYPE CONTROL(S): 5U-100Z COMMENTS: \_\_\_\_\_

YEAR	1992	1993	1994	TOTAL	STUDYRATE	STATEWIDE!
FATAL			1	1	1.80 OK	1.50
NO. KILLED			1	1		
INJURY	26	19	37	82	147.28OK	148.10
NO. INJURED	57	30	75	162		
PROP DAMAGE	26	27	30	83	149.08*	120.30
TOTAL ACC.	52	46	68	166	298.16OK	269.90
ANGLE	4	1	7	12	21.55 **	43.50
REAR END	16	20	28	64	114.95*	88.80
FIXED OBJ.	4	3	7	14	25.15 OK	21.90
OPPOSITE DIR			1	1	1.80 OK	3.70
SIDESWIPE	7	6	8	21	37.72 *	25.50
LEFT TURN	8	10	13	31	55.68 OK	48.80
PEDESTRIAN		1		1	1.80 **	8.30
PARKED VEH.	1	1	1	3	5.39 OK	4
OTHER	12	4		16	28.74 OK	31.20
ANIMAL		1		1		
RAILROAD						
FIRE						
OVERTURN						
NON-COLL.						
UNKNOWN	12	3		15		
NIGHTTIME	19	17	16	52	31%	32%
WET SURFACE	15	10	18	43	25%	28%
INTERSECTION	30	29	43	102	61%	
ALCOHOL RE.	2	3	4	9	5%	8%
RATE						
STATEWIDE X						
A D T	39000	40000	41000			
% TRUCK TRAF						
V M T	178127980	178542000	179005550			
TOTAL VEH.	109	94	151	354		
TOTAL TRUCKS	2	1	7	10		
% TRUCK	1	1	4	2		

\* - Significantly Higher than Statewide X

\*\* - Significantly Lower than Statewide X

56

TABLE II-9

**RAMP ACCIDENTS 1990-1992****I-95/I-495 AT MD 202**

<b>RAMP #</b>	<b>1990</b>	<b>1991</b>	<b>1992</b>	<b>TOTAL</b>
A	0	1	1	2
C	0	0	1	1
D	0	0	0	0
F	3	0	1	4
G	1	0	0	1
H	2	0	0	2
J	0	0	0	0
<b>TOTAL</b>	<b>6</b>	<b>1</b>	<b>3</b>	<b>10</b>

**I-95/I-495 AT MD 214**

<b>RAMP #</b>	<b>1990</b>	<b>1991</b>	<b>1992</b>	<b>TOTAL</b>
A	1	3	2	6
B	0	0	1	1
C	1	3	3	7
D	2	0	2	4
E	0	1	1	2
F	1	0	1	2
G	0	2	1	3
H	0	0	3	3
<b>TOTAL</b>	<b>5</b>	<b>9</b>	<b>14</b>	<b>28</b>

Note: See Figure S-4 for Ramp Designations



**III. EXISTING ENVIRONMENT**

**III. EXISTING ENVIRONMENT**

**A. Social Environment**

**1. Demographics**

According to information from the U.S. Bureau of the Census, the population of Prince George’s County grew by 9.7 percent, from 665,071 to 729,268 people, during the period 1980-1990. By the year 2020, the County’s population is expected to reach 971,400 people, based on projections prepared by the Maryland Office of Planning. This represents an increase of 33.2 percent over the 1990 County population.

The study area lies within the boundaries of Census Tracts 8034.01, 8034.02, 8035.07, 8035.10 and 8035.11, as shown in Figure III-1. These census tracts are used to describe the demographic characteristics of the study area. For the purpose of evaluating population changes during the period 1980-1990, Census Tracts 8035.10 and 8035.11 must be combined to form the area formerly comprising Census Tract 8035.04, which was divided following the 1980 census. During the ten year period between 1980 and 1990, the total population in the area defined by the study area census tracts increased by 58.1 percent, from 15,792 to 24,972 people. Census Tracts 8034.01 and 8034.02 experienced net declines in population while the other census tracts experienced a growth in population. The area defined by combining Census Tracts 8035.10 and 8035.11 had the largest increase in population during the period 1980-1990, more than quadrupling, from 2,450 to 11,164 people. Table III-1 shows population data for the study area for 1980 and 1990.

Growth in the study area is regulated by the policies contained in two separate Prince George’s County subregional master plans, Landover and Vicinity and Largo-Lottsford. According to the master plans, by the year 2010, the population of Landover and Vicinity, which contains the portion of the study area west of I-95/I-495 (Capital Beltway), is expected to reach 59,571 people, an increase of 10.2 percent over the 1990 population of 54,078 people; while the year 2010 population for the segment of Largo-Lottsford containing the portion of the study area east of I-95/I-495 is expected to reach 7,196 people, an increase of 133.9 percent over the 1989 population of 3,076 people.

TABLE III-1

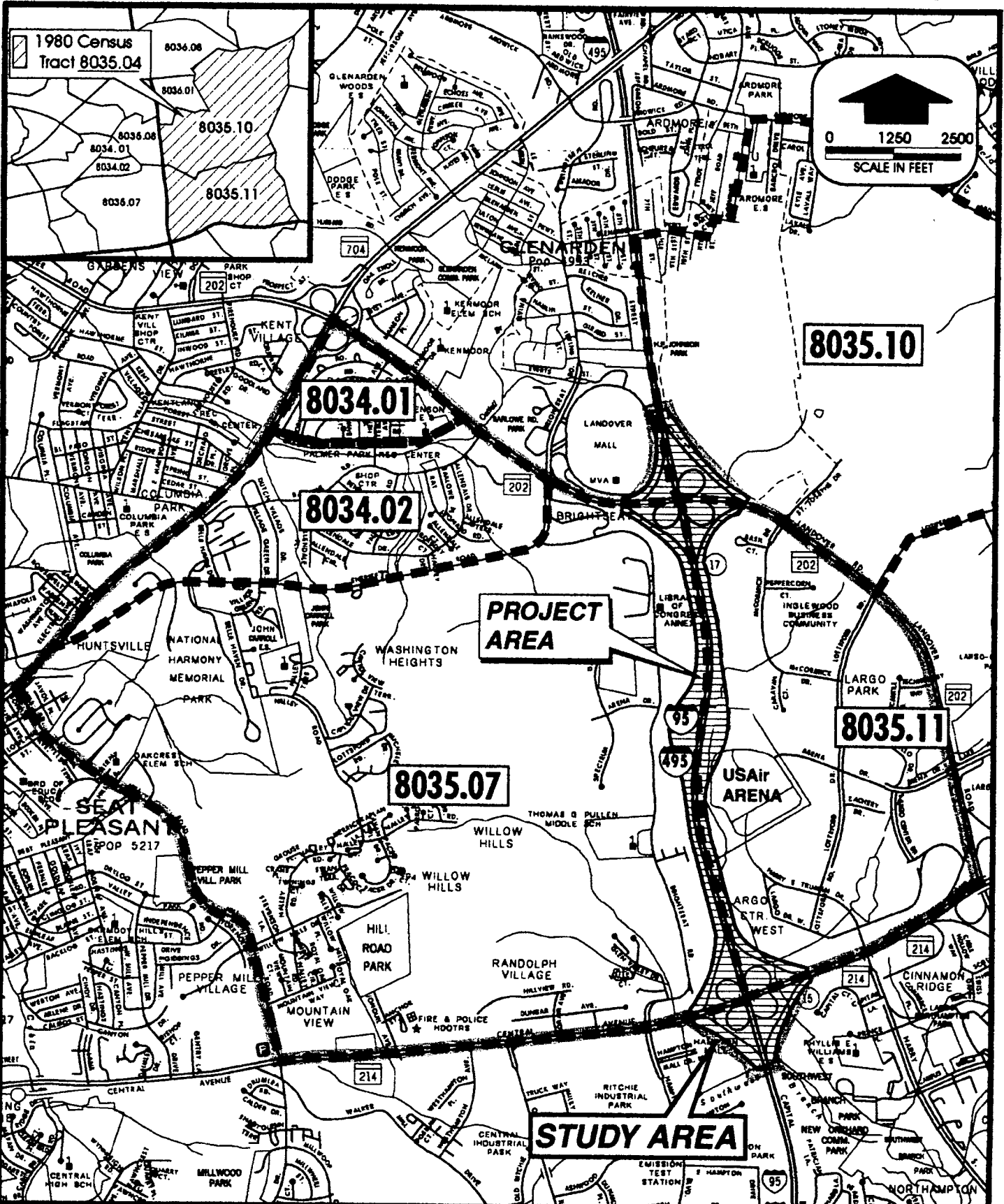
## POPULATION AND GROWTH IN THE STUDY AREA

AREA	1980	1990	% CHANGE
Prince George's County	665,071	729,268	+9.7
<u>Census Tracts</u>			
8034.01	2,211	1,799	-18.6
8034.02	5,775	5,220	-9.6
8035.07	5,356	6,789	+26.8
8035.10	---	6,270	---
8035.11	---	4,894	---
8035.04	2,450	(11,164)*	+355.7
<b>Total Census Tracts</b>	<b>15,792</b>	<b>24,972</b>	<b>+58.1</b>

Source: U.S. Bureau of the Census

\* Sum of the population of Census Tracts 8035.10 and 8035.11

An analysis of 1990 census data indicates that 61.4 percent of the total population in the study area census tracts were persons 20 to 64 years old, and 4.9 percent were persons 65 years and older. The largest percentage of the age group 65 years and older (40.9 percent) appears in Census Tract 8035.11. Census Tract 8035.11 also has the highest ratio of persons 65 years and older to total number of persons residing in the census tract (10.2 percent). In Prince George's County, in 1990, 6.9 percent of the total population were persons 65 years and older. County-wide data from the Maryland Office of Planning indicate that there were 258,011 households in 1990 in Prince George's County. By the year 2020, the number of households in Prince George's County is projected to increase by 40.3 percent to 361,900. The total number of housing units in Prince George's County in 1990 was 270,090 units including 12,079 vacant units. In 1990, within the study area census tracts, there were 8,482 housing units, including 503 vacant units. According to the master plans for this area, by the



**I-95 / I-495 (CAPITAL BELTWAY)  
ACCESS IMPROVEMENTS  
FROM MD 202 TO MD 214  
(INTERSTATE ACCESS POINT APPROVAL)**

**CENSUS TRACTS**

**FIGURE III - 1**

year 2010, the number of dwelling units in the Landover and Vicinity planning area, west of I-95/I-495, is expected to reach 21,658 units, an increase of 20.8 percent over the 1990 total of 17,923 units; while the number of dwelling units in the year 2010 in the segment of the Largo-Lottsford planning area, east of I-95/I-495, is expected to reach 2,705 units, an increase of 170.8 percent over the 1989 total of 999 units.

According to the U.S. Bureau of the Census, in 1990, 50.7 percent of the total population of Prince George’s County were African-American, 43.1 percent were White, 3.9 percent were Asian or Pacific Islander, 0.3 percent were American Indian, Eskimo or Aleut, and 2.0 percent were of other races. For the study area, in 1990, 82.3 percent of the total population in the study area census tracts were African-American, 14.7 percent were White, 2.3 percent were Asian or Pacific Islander, 0.2 percent were American Indian, Eskimo or Aleut, and 0.5 percent were of other races.

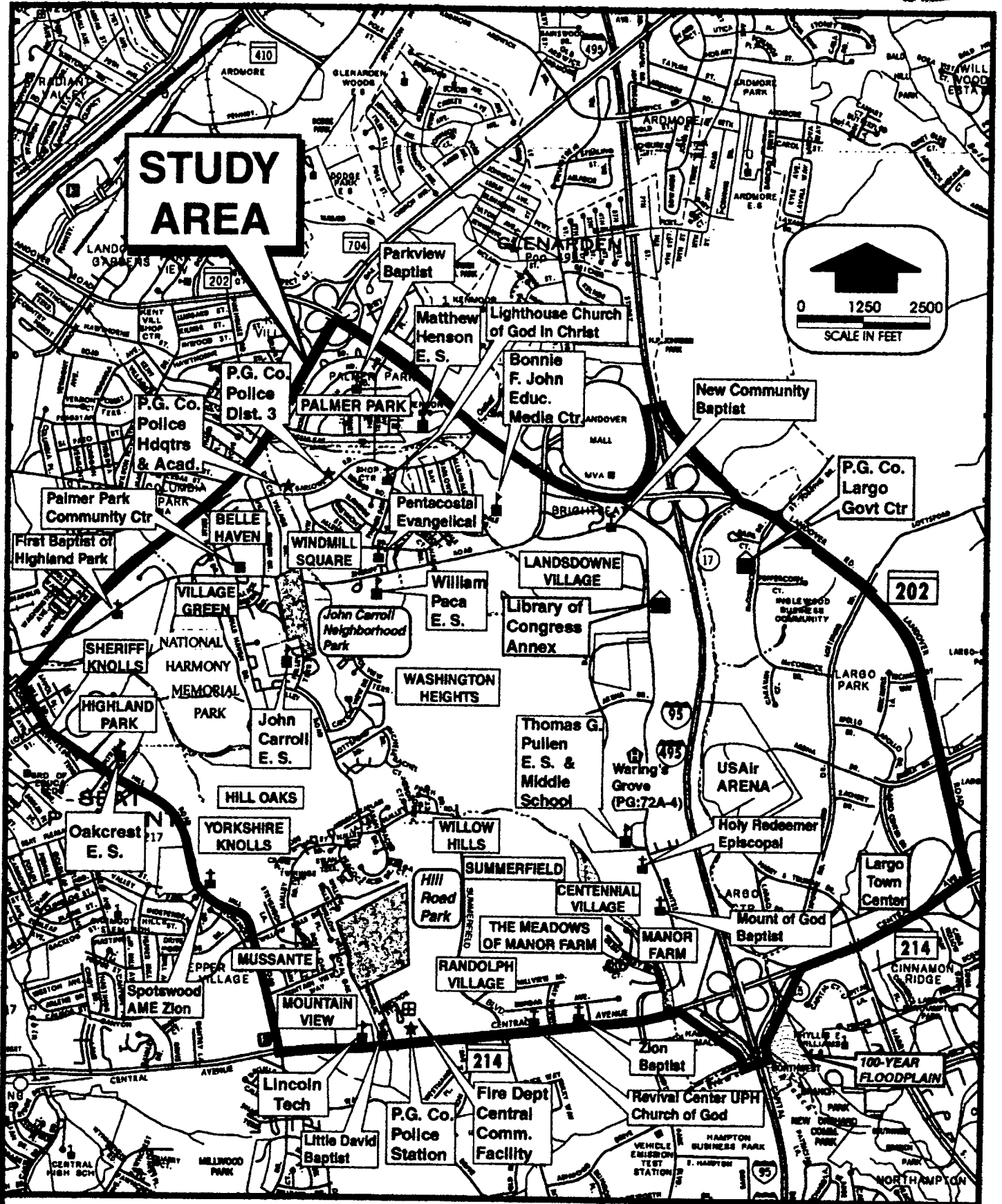
**2. Community Facilities and Services (Figure III-2)**

There are a number of existing residential communities located in the study area. The northern portion of the study area contains Lansdowne Village, Palmer Park, Windmill Square, Belle Haven and Village Green. The southern portion of the study area contains Manor Farm, The Meadows of Manor Farm and Randolph Village. Largo Town Center is located in the eastern portion of the study area. Located in the central portion of the study area are Washington Heights, Summerfield and Centennial Village. The western portion of the study area contains Sheriff Knolls, Highland Park, Hill Oaks, Yorkshire Knolls, Willow Hills, Mussante and Mountain View.

The following services and facilities are located within the study area:

- |         |   |  |
|---------|---|--|
| Schools | - | William Paca Elementary School                       |
|         | - | John Carroll Elementary School                       |
|         | - | Oakcrest Elementary School                           |
|         | - | Thomas G. Pullen Elementary School and Middle School |

- Lincoln Technical Institute
- Matthew Henson Elementary School
- Bonnie F. Johns Education Media Center
  
- Churches
  - Holy Redeemer Episcopal Church
  - Stephen Gill Spotswood AME Zion Church
  - First Baptist Church of Highland Park
  - New Community Baptist Church
  - Parkview Baptist Church
  - Zion Baptist Church
  - Lighthouse Church of God in Christ
  - Pentacostal Evangelical Church
  - Revival Center UPH Church of God
  - Little David Baptist Church
  - Mount of God Baptist Church
  
- Fire and Ambulance Services
  - Central Communications Facility
  
- Police Services
  - Prince George's County Station
  - Prince George's Police Headquarters and Academy
  - Prince George's County District 3



**I-95 / I-495 (CAPITAL BELTWAY)  
 ACCESS IMPROVEMENTS  
 FROM MD 202 TO MD 214  
 (INTERSTATE ACCESS POINT APPROVAL)**

**COMMUNITY FACILITIES  
 AND  
 ENVIRONMENTAL FEATURES**

**FIGURE III - 2**

- Cemetery - National Harmony Memorial Park
  
- Governmental Features
  - Prince George's County Largo Government Center
  - Library of Congress Annex
  - Palmer Park Community Center (Maryland-National Capital Park and Planning Commission)
  
- Public Transportation
  - Park and Ride (MD 214 and Hill Road)
  - Bus Service by Washington Metropolitan Area Transit Authority and Prince George's County
  
- Points of Interest - USAir Arena (formerly the Capital Centre)
  
- Public Water and Sewer Service
  
- Parks and Recreation Areas
  - Hill Road Park
  - John Carroll Neighborhood Park
  - Nalley Road Neighborhood Playground
  - Barlowe Road Neighborhood Park
  - Palmer Park Community Center Park



**B. Economic Environment**

**1. County-wide Employment Characteristics**

In 1990, there were 378,200 jobs in Prince George's County. By the year 2020, employment in Prince George's County is expected to reach 502,600, an increase of almost 33 percent over 1990 figures. Of the total number of jobs in the County in 1990, 26 percent were service oriented, 25 percent were government jobs and 20 percent were in retail trade. Service, government and retail trade type jobs were the three largest categories of jobs in Prince George's County in 1990. It is projected that 36 percent of the jobs in the County in 2020 will be service type jobs, 20 percent will be in retail trade and 18 percent governmental jobs. County-wide, the median household income in 1990 was \$43,127, increasing in 1995 to \$48,000, an increase of 11.3 percent over the five year period.

**2. Study Area Employment Characteristics**

The Maryland-National Capital Park and Planning Commission (M-NCPPC) is a bi-County (Montgomery and Prince George's) agency whose responsibilities include all local plans, recommendations on zoning amendments, administration of subdivision regulations and general administration of parks. To carry out these responsibilities, M-NCPPC has divided the counties into planning areas.

The study area lies within two planning areas - Landover and Vicinity on the western side of I-95/I-495 and Largo-Lottsford on the eastern side. The employment goal for both planning areas as stated in their master plans is to create more diversity in job opportunities for local residents and to enhance the economic base of the County and the planning area. According to the M-NCPPC forecasts, the Landover and Vicinity Planning Area, which contains the western portion of the study area, is projected to experience growth in employment from 32,380 jobs in 1985 to 46,000 jobs in 2010, a 42 percent increase. The Largo-Lottsford Planning Area has been subdivided into communities. The Northampton Community, the segment of the Largo-Lottsford Planning Area that contains the eastern portion of the study area, is projected to experience growth in employment from 2,600 jobs in 1985 to 7,660 jobs in 2010, a 195 percent increase. The Brightseat Strip, a research and development area, is included in the portion of the study area west of the Beltway. The Brightseat Strip Industrial Park Area was recently expanded and is considered a major

employment area. The portion of the study area east of the Beltway is considered a major employment area and includes the USAir Arena, Largo Town Center and three employment parks. The Largo Town Center could potentially provide more than 1.3 million square feet of office space. Outside the Town Center, within this portion of the study area, an additional 4.3 million square feet of office, research and development and warehouse space could potentially be provided.

**C. Land Use**

**1. Existing Land Use**

The existing land use in the study area consists of the following categories, as shown on Figure III-3: residential (high, medium and low density), commercial/industrial, public/quasi-public, park and undeveloped. The public/quasi-public category includes institutional uses, such as schools, as well as land used for recreation (private sector).

As seen on Figure III-3, a substantial portion of the study area is being used for commercial/industrial purposes, particularly in the vicinity of I-95/I-495. The Brightseat Strip research and development area is located along the west side of I-95/I-495 corridor in the study area. The portion of the study area formed by I-95/I-495, Central Avenue (MD 214) and Landover Road (MD 202) is known as the Urban Center for the Largo-Lottsford Planning Area, and it includes the Largo Town Center, the USAir Arena and three employment parks. Most of the existing residential land use in the study area occurs west of I-95/I-495 in communities such as Washington Heights, centrally located in the study area, Hill Oaks, in the western portion, and Randolph Village, in the southern portion of the study area. Also located in the central portion of the study area is the Summerfield residential community which provides 1,088 dwelling units on 231.64 acres for military service members and their families stationed at Andrews Air Force Base, Bolling Air Force Base, National Naval Medical Center, Washington Navy Yard and the Pentagon. The Wilson Farm property, one of the largest pieces of undeveloped property inside the Capital Beltway within Prince George's County, is located along the south side of Sheriff Road, west of the Brightseat Strip Industrial Park area, in the central part of the study area. The property has a total area of 282.22 acres. JKC Stadium, Inc. is currently developing the property to provide a 78,600 seat stadium and 22,739 parking spaces. A loop road (Stadium Drive) would be located around the stadium which would be slightly south and east of the center

of the site. Brightseat Road, Arena Drive, Summerfield Drive and Lottsford Road, four public roads, would enter the site and converge at Stadium Drive. Located in the western portion of the study area is a large piece of land devoted to public use, the National Harmony Memorial Park.

**2. Hazardous Materials/Waste Sites**

A field survey and land use examination of the project area did not identify any land use likely to have potential for hazardous waste contamination. In addition, the U.S. Environmental Protection Agency (EPA) listing of Superfund sites (CERCLIS) did not identify any sites within the project area.



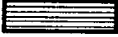




**3. Future Land Use**

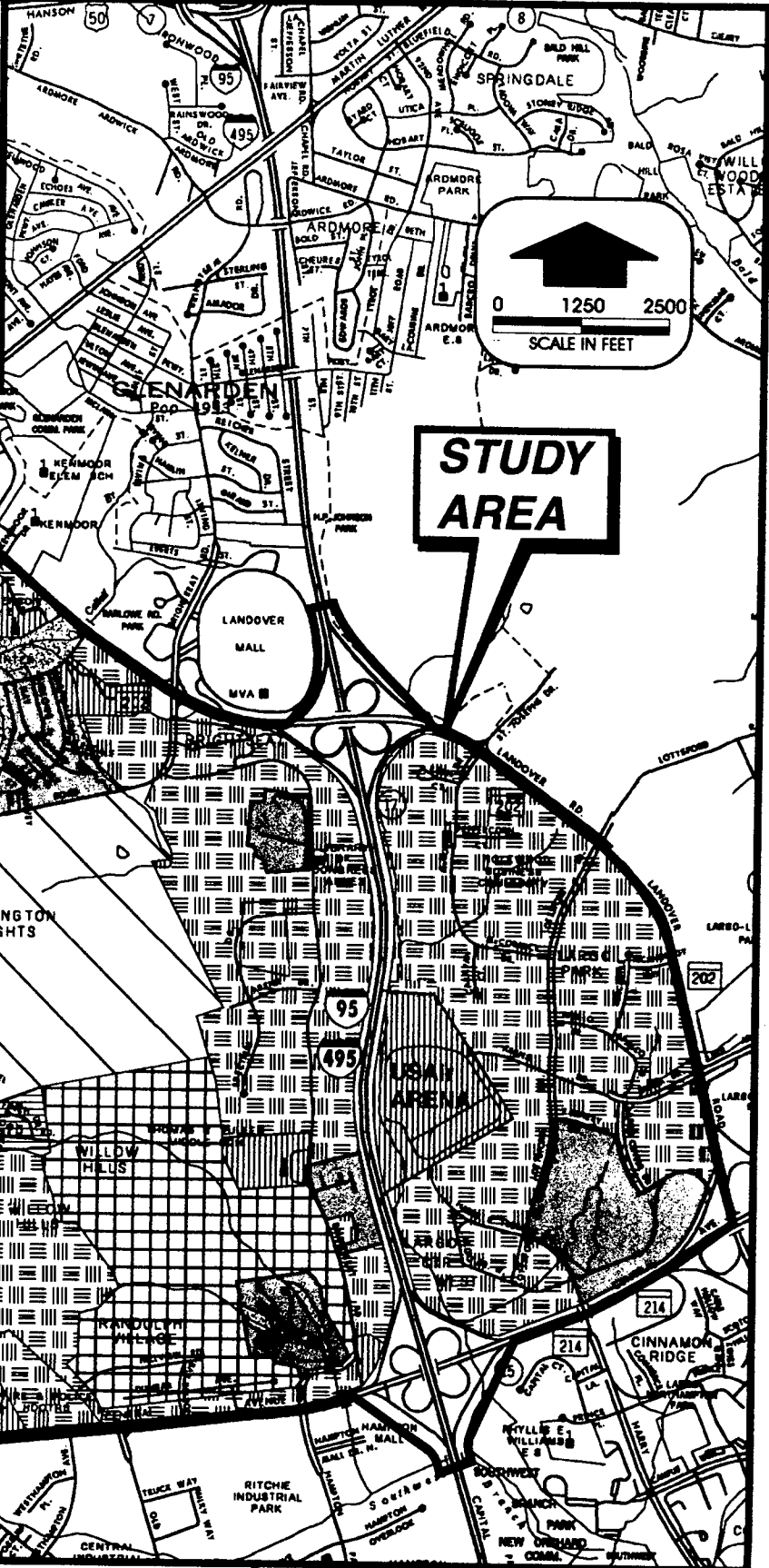
The comprehensive rezoning process, also known as the Sectional Map Amendment (SMA) process in Prince George’s County, allows for the rezoning of a section of the overall County Zoning Map in order to bring zoning into conformance with adopted County plans and policies. The SMA is intended to implement the land use recommendations of the approved Master Plan for the foreseeable future, generally considered to be six to ten years. The Master Plan and Sectional Map Amendment for the Largo-Lottsford Planning Area were adopted in July, 1990. The Master Plan for Landover and Vicinity was adopted in February, 1993, and the Sectional Map Amendment was adopted in July, 1993. The adoption of the SMA’s resulted in the revision of the official Zoning Maps for the planning areas, bringing zoning into greater conformity with County land use goals and policies as they apply to the Largo-Lottsford and Landover and Vicinity planning areas.

The future land use in the study area, as implemented by the SMA’s, is shown on Figure III-4.

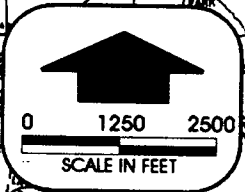
Several parcels within the study area have the potential to undergo further development in accordance with the Master Plans and SMA’s. These include the following (Figure III-4):

**LEGEND**

-  Residential High Density
-  Residential Medium Density
-  Residential Low Density
-  COMMERCIAL/INDUSTRIAL
-  PUBLIC/QUASI PUBLIC
-  PARK
-  UNDEVELOPED



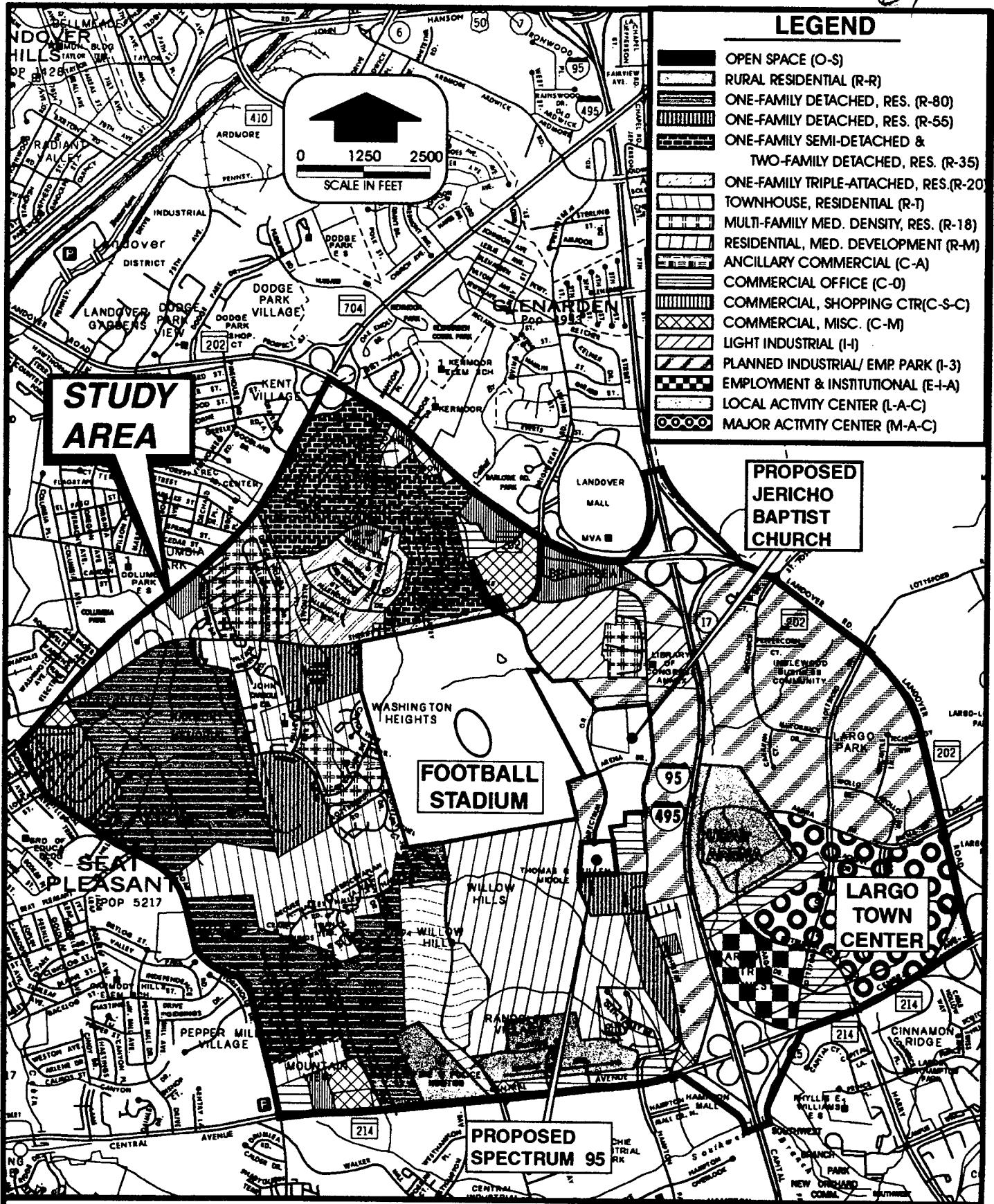
**STUDY AREA**





















**I-95 / I-495 (CAPITAL BELTWAY)  
ACCESS IMPROVEMENTS  
FROM MD 202 TO MD 214  
(INTERSTATE ACCESS POINT APPROVAL)**

**EXISTING LAND USE**

FIGURE III - 3



### LEGEND

-  OPEN SPACE (O-S)
-  RURAL RESIDENTIAL (R-R)
-  ONE-FAMILY DETACHED, RES. (R-80)
-  ONE-FAMILY DETACHED, RES. (R-55)
-  ONE-FAMILY SEMI-DETACHED & TWO-FAMILY DETACHED, RES. (R-35)
-  ONE-FAMILY TRIPLE-ATTACHED, RES. (R-20)
-  TOWNHOUSE, RESIDENTIAL (R-T)
-  MULTI-FAMILY MED. DENSITY, RES. (R-18)
-  RESIDENTIAL, MED. DEVELOPMENT (R-M)
-  ANCILLARY COMMERCIAL (C-A)
-  COMMERCIAL OFFICE (C-O)
-  COMMERCIAL, SHOPPING CTR (C-S-C)
-  COMMERCIAL, MISC. (C-M)
-  LIGHT INDUSTRIAL (I-I)
-  PLANNED INDUSTRIAL/EMP PARK (I-3)
-  EMPLOYMENT & INSTITUTIONAL (E-I-A)
-  LOCAL ACTIVITY CENTER (L-A-C)
-  MAJOR ACTIVITY CENTER (M-A-C)

**STUDY AREA**

**PROPOSED JERICO BAPTIST CHURCH**

**FOOTBALL STADIUM**

**LARGO TOWN CENTER**

**PROPOSED SPECTRUM 95**

**I-95 / I-495 (CAPITAL BELTWAY)  
 ACCESS IMPROVEMENTS  
 FROM MD 202 TO MD 214  
 (INTERSTATE ACCESS POINT APPROVAL)**

**FUTURE LAND USE**

FIGURE III - 4

- The Jericho Baptist Church site is located along the west side of Brightseat Road and is served by Arena Drive and Spectrum Drive. The site has a total area of 73.67 acres. Development of the site is proposed which would provide a church, private school, college and daycare facility. The total building square footage proposed is 213,410 square feet.
- The Spectrum 95 site is located at the cul-de-sac on Spectrum Drive, west of Brightseat Road. The site has a total area of 7.9 acres. The site is proposed to be developed for warehouse use with a total gross floor area of 82,386 square feet.
- The Largo Town Center is situated in the northwest quadrant of the intersection of MD 202 and MD 214. The area occupies approximately 162 acres. According to the Largo-Lottsford Master Plan, the Town Center is a mixed use development that will consist of different styles of multifamily residential units (approximately 1,500 dwelling units at build-out), retail commercial uses (approximately 300,000 square feet), a hotel and more than 1.3 million square feet of office space.

In summary, there are substantial opportunities within the study area for ongoing or planned growth in office, residential and commercial development in accordance with the Master Plans and SMA's of Largo-Lottsford and Landover and Vicinity.

#### **D. Cultural Resources**

##### **1. Historic Structures**

An historic sites reconnaissance of the project area resulted in the identification of one site within the project's area of potential effects which is eligible for the National Register of Historic Places. This site, Waring's Grove (PG: 72A-4), is shown on Figure III-2 and is described below.

Waring's Grove is an example of accumulative architecture consisting of several building periods and as such, helps document the architectural development of Prince George's County during the late eighteenth through the mid-nineteenth centuries. Zachariah

Berry erected the earliest portion of the dwelling around 1798. Subsequent additions and modifications were made by Berry's son around 1820, and Berry's grandson around 1859, who also applied Gothic-revival style vergeboard ornament to the house's eaves and dormers. Since 1920, when the property was sold to John O. Beane, the grandfather of the present owner, additional modifications to the property were made. The total area of the property within the historic boundary is 6.17 acres.

**2. Archeological Sites**

A Phase IB archeological survey of the project area was conducted. The survey resulted in the identification of one historic archeological site (18PR508) and two prehistoric archeological sites (18PR507 and 18PR509) within the project's area of potential effects. None of the sites are considered eligible for the National Register of Historic Places.

**E. Natural Environment**

**1. Topography/Geology/Soils**

The study area is located in the Western Coastal Plain Physiographic Province and is characterized by gently rolling topography with elevations ranging from approximately 100 to 200 feet above mean sea level. The lowest elevation in the study area is along the unnamed tributary to Southwest Branch. Steep slopes are especially evident immediately along the Beltway.

According to the Soil Survey of Prince George's County, Maryland (USDA, 1967), the study area encompasses the following soil types. The Collington fine sandy loam soil types appear to dominate the study area. Primary hydric soils, such as mixed alluvial land, are most commonly found along drainage channels or streams within the study area. Secondary hydric soils, such as Adelphia fine sandy loam, are scattered throughout the remaining soil types. Primary hydric soils are defined as soils that are saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions in the upper part of the profile. Secondary hydric soils are soils that potentially contain small inclusions that meet the National Criteria for Hydric Soils (National Technical Committee for Hydric Soils, 1991). Typical inclusions comprise depressions, low areas and drainageways.

Prime Farmland Soils are located within the project area. However, the soils are in locations that are zoned and planned for commercial and light industrial development.

**2. Aquatic Resources/Wetlands**

**a. Water Resources**

**Surface Water**

The study area lies within the Southwest Branch watershed of the Patuxent River. Two unnamed tributaries of the Southwest Branch lie within the project area.

The Maryland Department of the Environment has classified all surface waters of the State into four categories according to their desired uses. These categories are:

- Use I - Water contact recreation, aquatic life, and water supply
- Use II - Shellfish harvesting
- Use III - Natural trout waters
- Use IV - Recreational trout waters

All waters of the State are Use I with additional protection provided by higher classifications. Both of the unnamed tributaries to Southwest Branch are classified as Use I-P streams, which are provided additional protection for potential or actual use as a public water supply. To protect important aquatic species under this classification, in-stream work is prohibited during the period March 1 through June 15, inclusive, during any year. In-stream construction would require permits from the Maryland Department of the Environment, Water Management Administration and the U.S. Army Corps of Engineers.



**Groundwater**

The study area is located in the Western Coastal Plain Physiographic Province. The Patuxent, Patapsco and Raritan, and portions of the Magothy aquifers lie within the study area. The Patuxent formation consists of irregularly stratified layers of sand, gravel, clay and mixtures thereof. Yields of wells range from a few hundred to as much as 1,200 gallons per minute. The study area is provided with public water and sewer service.

The Patapsco and Raritan formation consists of irregularly stratified layers of variegated gravel, sand, silt and clay in varying proportions. Yields of wells range from less than 100 to 2,160 gallons per minute. The Magothy formation consists chiefly of beds of sand and gravel with interbedded layers of clay and silty clay. Yields of wells range from a few to several hundred gallons per minute.

**b. Floodplains**

The Prince George's County, Maryland Flood Insurance Rate Maps identify two 100-year floodplains in the project area. Both 100-year floodplains are associated with the Southwest Branch-unnamed tributary No. 8 and an area located within the I-95/I-495/MD 214 interchange (see Figure III-2).

**c. Wetlands**

**Methodology**

Wetland delineations were made in accordance with the U.S. Army Corps of Engineer's (COE) Wetlands Delineation Manual (Department of the Army, 1987). Soils, vegetative communities, and hydrologic indicators were analyzed to delineate and classify wetlands. Hydric soils maps and National Wetlands Inventory maps were used to support and confirm the conclusions reached in the field.

Wetlands were classified according to the Cowardin System, as described in Classification of Wetlands and Deepwater Habitats of the United States (1979). This system classifies wetlands based on hydrological, geomorphological, chemical and biological factors.

Hydric soils are soils that are saturated or inundated during the growing season for sufficient time to develop anaerobic conditions that favor the growth of hydrophytic vegetation. Many soil cores were taken to determine whether or not wetland soils are present. Soil characteristics such as composition, texture, color, chroma, value, odor, and moisture regime were analyzed. Soil color, chroma, and value were verified using Munsell Soil Color Charts. The National Hydric Soils List, USDA Soil Conservation Service, was used as a reference in the soils studies.

Each site was analyzed according to plant community composition. Plant species observed in the field were identified and the indicator status for each species was determined following the National List of Plant Species That Occur in Wetlands: Northeast (Region 1) (May, 1988). The indicator status designates the probability of occurrence (expressed as a percentage) of a given plant species in wetlands of the northeast region of the United States. The following is an explanation of the indicator status designations:

OBL	=	Obligate Wetland (greater than 99% probability of occurrence)
FACW	=	Facultative Wetland (greater than 66% - less than 99% probability of occurrence)
FAC	=	Facultative (33% - 66% probability of occurrence)
FACU	=	Facultative Upland (1% - less than 33% probability of occurrence)
UPL	=	Obligate Upland (less than 1% probability of occurrence)

According to the COE manual, 50% or more of the vegetative community that exists or is expected to exist on a site must be hydrophytic - i.e., OBL, FACW, and/or FAC - in order to satisfy the vegetative community criterion for wetlands. Open water and riverine systems do not require 50% or more hydrophytic vegetation.

Hydrologic indicators of wetlands include soil erosion, sediment deposits, visual inundation, black leaves, drift lines, buttressing and hummocking. Evidence of these indicators is present even during dry periods and, therefore, are useful identifiers of a wetland. Hydrologic indicators observed on the site were used to determine wetland status and classification.

**Wetland Descriptions**

Field studies identified and delineated eight wetlands in the study area; however, only one wetland, W-3, is in the immediate vicinity of the project (see Figure III-5). A description of the wetland site, including location, classifications, value, dominant vegetation and indicator status follow. In addition, relative wetland quality based on functional assessment is included.

Wetland W3, of low value, is a series of vegetated depressions east of I-95/I-495 along the transmission right-of-way immediately adjacent to the unnamed tributary to Southwest Branch. Vegetation within these areas consist of grasses (*Poa sp.*), broad-leaved cattail, and barnyard grass (*Echinochloa crusgalli*). These wetlands are classified as seasonally saturated, narrow-leaved, persistent, palustrine emergent wetland (PEM5A). Hydric soil indicators include low chromas with mottling and oxidized root channels. Soil texture is characteristic of a sandy loam. Evidence of hydrology includes water stained leaves and wetland drainage patterns. The source of hydrology appears to be surface runoff. The following functions are provided by wetland W-3 to a minor degree: passive recreation, uniqueness and natural heritage value, habitat for wildlife or fisheries, flood desynchronization, food chain support (nutrient export), dissipation of erosive forces, active recreation, groundwater discharge/groundwater recharge, nutrient retention/removal (long-term) and sediment trapping/stabilization (long-term). Wetland W-3 also functions moderately to provide sediment trapping/stabilization on a short-term basis. Wetland W-3 measures approximately 0.20 acre.

**Waters of the United States**

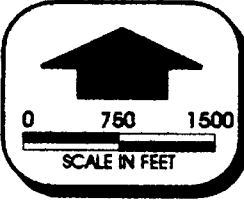
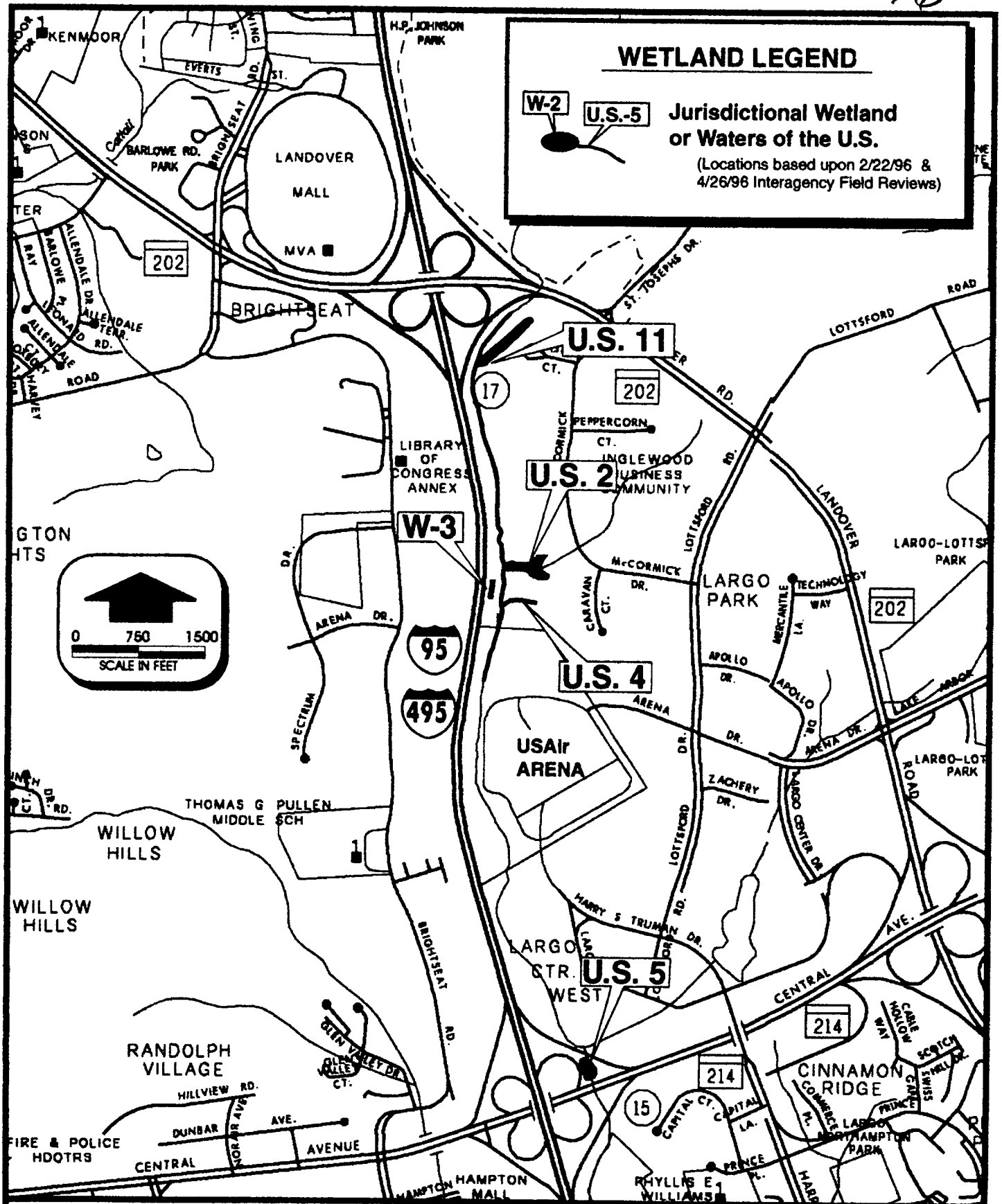
Four sites were classified as Waters of the United States in the immediate vicinity of the project (see Figure III-5). Recent interpretations by the COE regarding hydric soils and

### WETLAND LEGEND



**Jurisdictional Wetland or Waters of the U.S.**

(Locations based upon 2/22/96 & 4/26/98 Interagency Field Reviews)



**I-95 / I-495 (CAPITAL BELTWAY)  
ACCESS IMPROVEMENTS  
FROM MD 202 TO MD 214  
(INTERSTATE ACCESS POINT APPROVAL)**

**WETLANDS  
AND  
WATERS OF THE U.S.**

**FIGURE III - 5**

hydrophytic vegetative community requirements of jurisdictional wetlands require that these sites, identified under previous criteria as wetlands, be listed as "Waters of the United States."

The site labeled US 2 (R3UB3) is located along the east side of I-95/I-495 and Arena Drive. This site is an unnamed tributary to Southwest Branch and is approximately 1200 feet long with an average width of 20 feet. This is an upper perennial stream with an unconsolidated gravel or sand bottom.

The site labeled US 4 (R4UB1/3) is an intermittent riverine system located north of the USAir Arena parking lot. This channel is riprap covered and vegetated in its upper reaches, ponded in its mid-section and within its lower reaches confined to its channel as it joins the unnamed tributary to Southwest Branch. This site has unconsolidated bottoms of either cobble/gravel or mud.

Site US 5 (R3UB3) is located along the north and southeast quadrangle of the I-95/I-495/MD 214 interchange. Perennial flow is carried under the roadway via a series of culverts. This site can be classified as an upper perennial stream with an unconsolidated bottom dominated by mud.

Site US 11 (R3UB1) is the upper reach of an unnamed tributary to Southwest Branch and is located along the eastbound ramp from I-95/I-495 to MD 202. This portion of the tributary has extensive gabion walls along both sides of the channel. Hydric soil indicators within the scrub shrub areas include low chromas, water marks, and sulphidic odors.

### **3. Terrestrial Resources**

The project area is dominated with opportunistic species common to urban environments. Insects found in the area include: bees, grasshoppers and butterflies. Birds inhabiting the area include: mourning dove, mockingbird and field sparrow. Mammals found in the area include: eastern cottontail, woodchuck and eastern gray squirrel.

78

## Forest Areas

The dominant vegetation cover evident along the project area is deciduous forest. Forest stands are either remnant forest patches or hedgerows along I-95/I-495. This portion of I-95/I-495 is dominated by the Tulip Poplar Forest Association. Typical plant species common to this association include: tulip poplar, red maple, white oak, northern red oak, American beech, black gum, flowering dogwood, mockernut hickory, pignut hickory, black cherry, sassafras, spicebush and southern arrowwood. In this part of Maryland, pawpaw and sweetgum are also typical of the tulip poplar association, especially along streambanks. Other tree species, including white mulberry, tree-of-heaven and black locust, are also found, especially as the dominant species comprising hedgerows.

### **4. Threatened and Endangered Species**

Coordination with the U.S. Fish and Wildlife Service and the Maryland Department of Natural Resources indicates that no federally listed threatened or endangered species are known to exist in the project area (see Section VI. Comments and Coordination).

### **F. Existing Noise Conditions**

#### **1. Ambient Noise Level Measurements**

A detailed technical analysis has been performed to determine the impact of the project on noise levels. The results are summarized in Section V.F. A copy of the technical analysis report is available at the Maryland State Highway Administration, 707 North Calvert Street, Baltimore, Maryland 21202. Fifteen receptor sites were located within six noise sensitive areas (NSA's) and were characterized by noise levels at specific locations within each NSA, as shown in Table III-2 and indicated on Figure III-6 and Figures IV-2 through IV-5. The NSA's are residential environments, although one church is also present. Receptors were selected to allow analysis along the Interstate and the applicable local streets in the study area.

## 2. Results of Noise Monitoring

A description of the NSA's and the results of the ambient monitoring program are included in Table III-2.

**TABLE III-2**

### **NSA'S AND AMBIENT NOISE LEVELS**

<b>NSA</b>	<b>RECEPTOR</b>	<b>LOCATION</b>	<b>DESCRIPTION</b>	<b>AMBIENT NOISE LEVEL (dBA)</b>
1	R-1a	On Congress Place, 600 ft east of Brightseat Road	Townhome	76
	R-1b	On Congress Place, 650 ft east of Brightseat Road	Townhome	75
2	R-2a	On Continental Place, 725 ft east of Brightseat Road	Townhome	72
	R-2b	On Continental Place, 700 ft east of Brightseat Road	Townhome	73
	R-2c	On Continental Place, 650 ft east of Brightseat Road	Townhome	68
3	R-3	On Brightseat Road, 3100 ft north of Central Avenue	Church/Residence	62
	R-4	On Brightseat Road, 3100 ft north of Central Avenue	School	56
	R-5	On Brightseat Road, 1750 ft north of Central Avenue	House	69
	R-6	On Brightseat Road, 1100 ft north of Central Avenue	House	69
	R-7	On Brightseat Road, 3500 ft north of Central Avenue	Townhome	58
	R-8	On Brightseat Road, 2600 ft north of Central Avenue	Townhome	59
4	R-12	On Stretford Court, 150 ft east of Summerfield Boulevard	Apartments	51
	R-14	On Atlee Drive, 250 ft east of Summerfield Boulevard	Townhome	50
5	R-13	On East Nalley Road, 100 ft north of Central Avenue.	House	49
6	R-15	On Dunbar Avenue, 200 ft east of Summerfield Boulevard	House	60

**G. Existing Air Quality**

The project area is located in the National Capital Intrastate Air Quality Control Region and is a serious non-attainment area for ozone (O<sub>3</sub>), and is an attainment area for carbon monoxide (CO). Since the project is located in a non-attainment area for ozone, conformity to the State Implementation Plans (SIP's) is determined through a regional air quality analysis performed on the Transportation Improvement Program (TIP) and transportation plan.

The Transportation Improvement Program (TIP) is prepared each year by the National Capital Region Transportation Planning Board (TPB), which is the designated metropolitan planning organization for the Washington region. As a product of the urban transportation planning process, the TIP outlines the staged development of the area's Long-Range Transportation Plan (LRP).

The TIP serves several purposes. It is an expression of intent to implement specific facilities and projects in the LRP through the selection of priority projects during the initial six-year period of the plan. It provides a medium for local elected officials, agency staffs, and interested members of the public to review and comment on the priorities assigned to the selected projects. It also satisfies one of the requirements of the Federal Highway Administration and the Federal Transit Administration for the continuing transportation planning process in the region.


The Clean Air Act Amendments of 1990 require that the transportation actions and projects in the TIP support the attainment of the federal health standard for ozone. The TIP must be developed to meet the air quality conformity requirements as specified in the November 1993 Environmental Protection Agency regulations.

The improvements included in this document are in the proposed FY 1997-2002 TIP. The mobile source emissions associated with these improvements have been analyzed to meet the air quality conformity requirements.

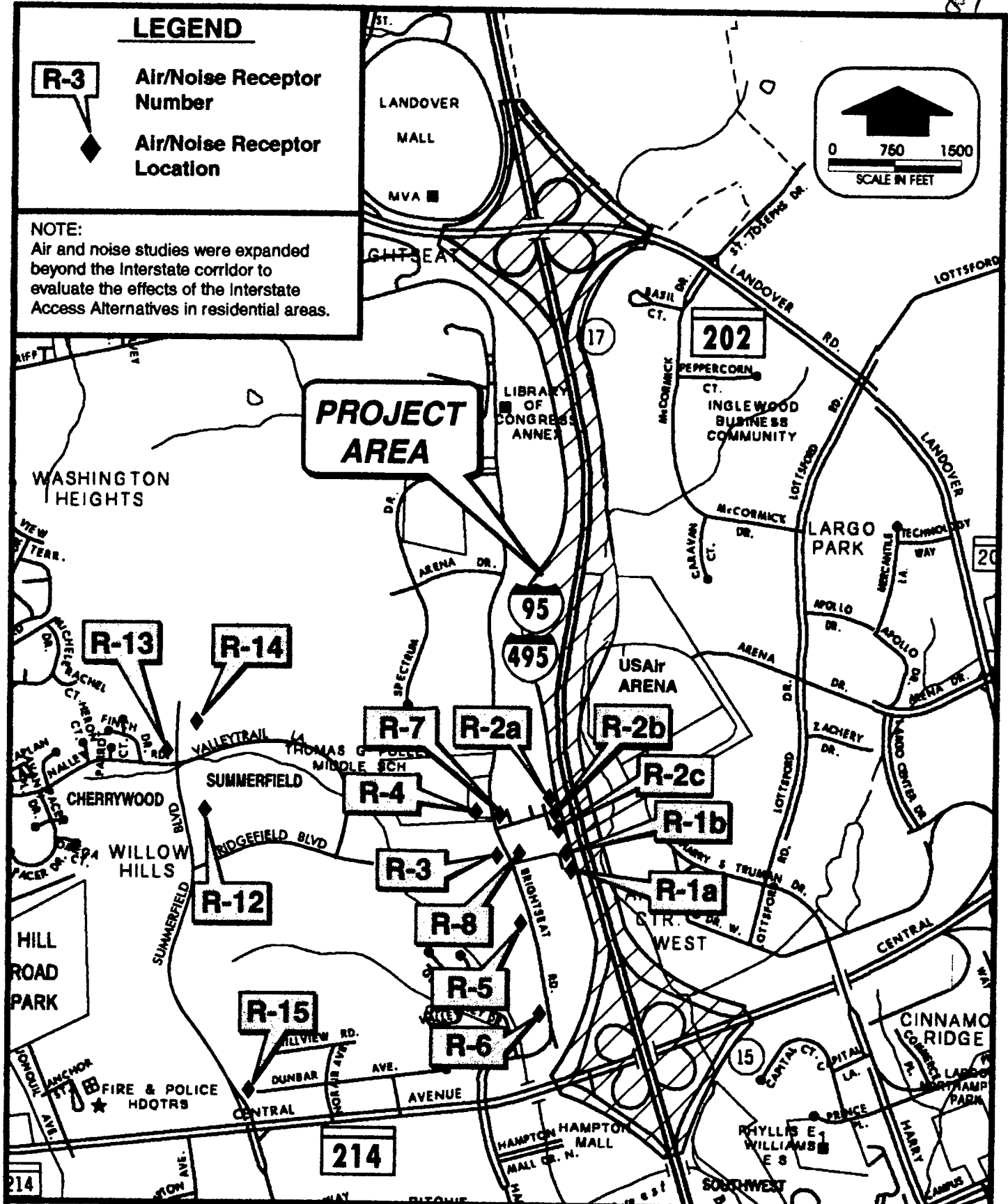
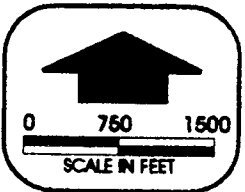
The TIP and amendments to the LRP are developed under procedures to involve citizens, affected public agencies, representatives of transportation agencies, private



**LEGEND**

- R-3** Air/Noise Receptor Number
-  Air/Noise Receptor Location

NOTE:  
Air and noise studies were expanded beyond the interstate corridor to evaluate the effects of the Interstate Access Alternatives in residential areas.



**I-95 / I-495 (CAPITAL BELTWAY)  
ACCESS IMPROVEMENTS  
FROM MD 202 TO MD 214  
(INTERSTATE ACCESS POINT APPROVAL)**

**AIR / NOISE RECEPTOR  
LOCATIONS**

FIGURE III - 6

providers of transportation and other members of the public. Draft versions of the LRP amendments and TIP project submissions are made available to the general public at informational forums. Citizens and interested groups are also invited to participate in the TIP process during the regularly scheduled public comment periods at TPB meetings.

A microscale air quality analysis has been performed to determine the effects on local carbon monoxide levels, as a result of providing and not providing Interstate access improvements. The location of air quality sensitive receptors used in the analysis is shown on Figure III-6. The results are summarized in Section V.G. A copy of the technical analysis report is available at the State Highway Administration, 707 North Calvert Street, Baltimore, Maryland 21202.

**IV. ALTERNATIVES CONSIDERED**

**IV. DESCRIPTIONS OF ALTERNATIVES CONSIDERED**

**A. Alternatives Retained**

**1. Alternative 1 - Proposed Action Not Approved - No Stadium Traffic Background Roadway Network in Place**

Alternative 1 would result in no improvements to access along I-95/I-495 at or between the MD 202 and MD 214 interchanges other than improvements such as resurfacing that would occur as part of normal highway maintenance and safety operations. Alternative 1 assumes no stadium traffic; however, local roadway improvements that are on the area master plans and Interstate improvements that have National Environmental Policy Act (“NEPA”) approval are assumed in place and operational at all times as part of the transportation background network. These improvements which are summarized below, would be constructed with State and county funds, except for the Ritchie-Marlboro Road interchange which will be partially funded with federal monies.

- The Arena Drive Bridge over I-95/I-495 and approaches between the USAir Arena and Brightseat Road which have been funded for construction and for which a Categorical Exclusion has been requested from the Federal Highway Administration for the limited use of the Interstate right-of-way for the bridge.
- The Ritchie-Marlboro Road interchange with I-95/I-495, 1.6 miles south of MD 214, which has been approved through the NEPA process (Location Approval in November, 1991), with Interstate Access Point Approval pending and anticipated construction by 2020.
- Intersection modifications at MD 214/Summerfield Boulevard and the widening/construction of Summerfield Boulevard to six lanes from MD 214 to south of Sheriff Road.
- Intersection modifications/widening at Brightseat Road and MD 202, and widening of Brightseat Road (a.k.a. Summerfield Boulevard North) from MD 202 to south of Sheriff Road.

- Intersection modifications at MD 214/Brightseat Road and the spot widening of Brightseat Road north of MD 214.

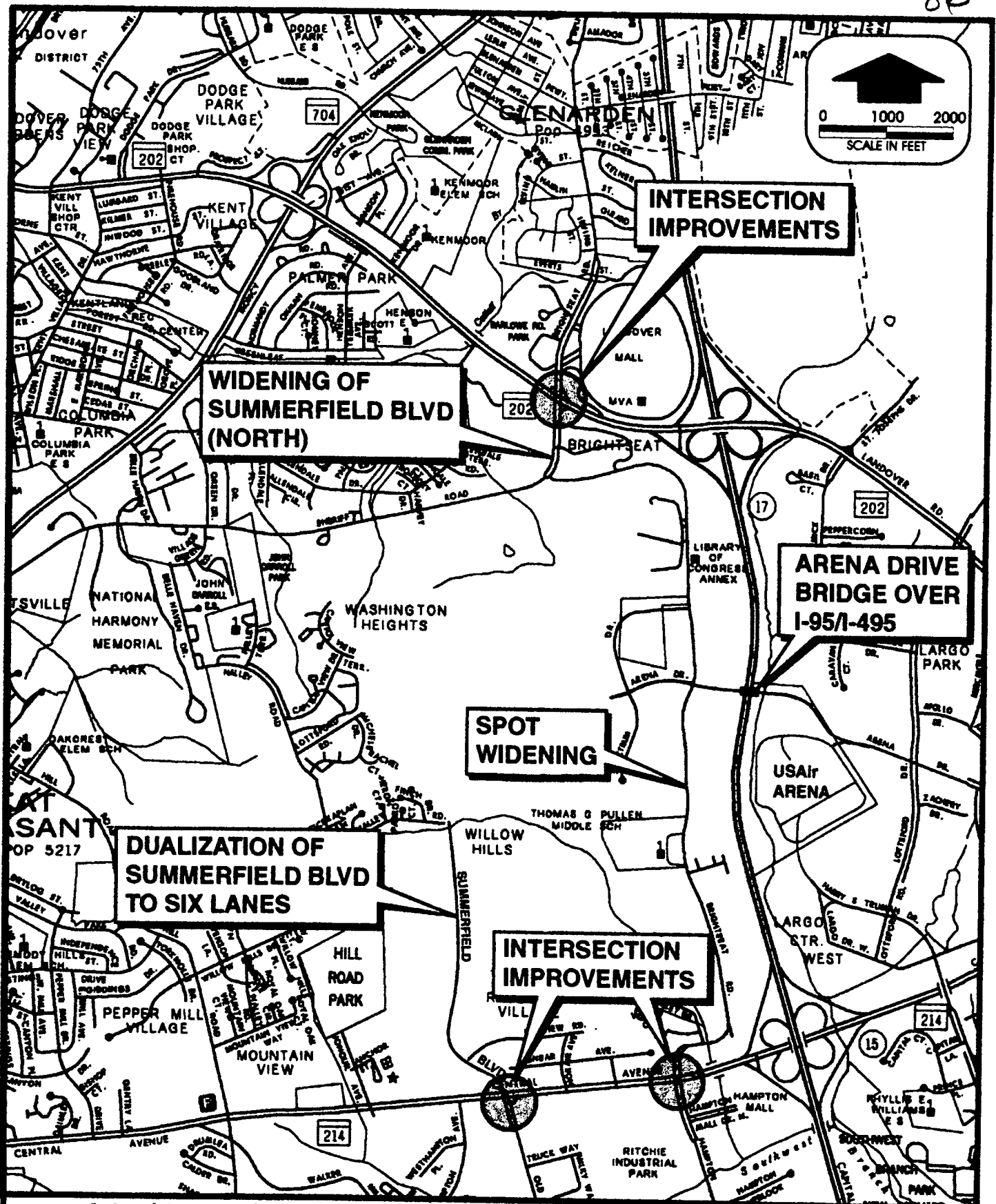
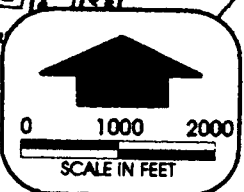
This alternative has been developed as a technical reference for comparison with the other alternatives. This alternative is not viable to handle traffic from stadium events. Only traffic related impacts of this alternative are addressed in this document, as environmental considerations for the projects and improvements included with the background roadway network have been addressed as part of other documentation and permitting processes.

**2. Alternative 2 - Proposed Action Not Approved - With Stadium Traffic - Background Roadway Network in Place**

Alternative 2 would consist of the same existing roadway conditions (No Interstate Access Point Approval for new improvements) and background roadway network assumptions made with Alternative 1 and considers traffic generated by a football stadium event. It includes the reasonable roadway, Transportation Demand Management (TDM) and Transportation Systems Management (TSM) improvements that could be implemented to provide a workable level of operations for stadium event ingress and egress without Interstate Access Point Approval. This alternative is also developed as a technical reference for comparison of traffic related impacts with the other alternatives. It is recognized that a change in zoning approval by Prince George’s County would be required to implement this alternative, as stadium event operation is conditioned upon completion of Interstate ramp improvements between I-95/I-495 and Arena Drive.

The major components of the stadium event traffic operations plan associated with Alternative 2 would include the following:

- Maximized capacity of the new four lane Arena Drive bridge over I-95/I-495 (westbound for ingress and eastbound for egress) before and after events through use of extensive signing, traffic cones and police control at intersections within the local roadway network encompassed by the I-95/I-495, MD 202, MD 214 triangle.
- Closure of MD 202 to through traffic before and after events (using police and special signing) while allowing free movement between MD 202 and Brightseat Road, and MD 202 and Landover Mall.



**INTERSECTION IMPROVEMENTS**

**WIDENING OF SUMMERFIELD BLVD (NORTH)**

**ARENA DRIVE BRIDGE OVER I-95/I-495**

**SPOT WIDENING**

**DUALIZATION OF SUMMERFIELD BLVD TO SIX LANES**

**INTERSECTION IMPROVEMENTS**

**I-95 / I-495 (CAPITAL BELTWAY)  
ACCESS IMPROVEMENTS  
FROM MD 202 TO MD 214  
(INTERSTATE ACCESS POINT APPROVAL)**

**ROADWAY IMPROVEMENTS IN PLACE  
AS PART OF THE BACKGROUND  
LOCAL TRANSPORTATION NETWORK**

**FIGURE IV-1**

Traffic projections and analyses for the above condition indicate that these measures could provide workable stadium ingress and egress traffic operations. The critical point for the workability of this alternative is the MD 202/Brightseat Road intersection for both ingress and egress. For ingress, the existing southbound I-95/I-495 ramp onto westbound MD 202 would operate at capacity for the entire hour prior to an event and continuously feed the Brightseat Road intersection. With triple left turns provided, westbound to southbound, and this movement flowing 80% of the time (red 20% of the time for exiting Landover Mall traffic), adequate capacity can be provided to prevent queues from extending back onto the I-95/I-495 ramps. For egress, point control would be provided to provide three lanes for the return movement at this intersection.

**3. Alternative 3 - Interstate Access Point Approval Granted for Improvements at the Existing MD 202 and MD 214 Interchanges with I-95/I-495 and Construction of Special Use Ramps Between Arena Drive and I-95/I-495 - Background Roadway Network in Place (See Figures IV-2 through IV-5)**

Alternative 3 would include the existing roadway conditions and background roadway network assumptions made with Alternatives 1 and 2. The improvements associated with Alternative 3, broken down according to the three locations where they apply, are described below. All improvements would be constructed with state and county funds.

**I-95/I-495 at MD 202**

**Ramp 'A' Widening** - The proposed improvements would consist of base widening of the existing ramp connecting southbound I-95/I-495 with westbound MD 202. The widening would take place to the east side of the ramp, thereby eliminating the need to relocate existing light standards and minimizing impacts to the existing swale to the west of Ramp 'A'. The existing curb and gutter and adjacent sidewalk at the MD 202 gore area would not be relocated; however, the gore at MD 202 would need to be reconstructed and a signal provided at this location.

**Merge Lane Extension on I-95/I-495 Northbound** - This improvement would consist of 12 feet of base widening for the westbound MD 202 merge onto I-95/I-495 northbound. The existing shoulder would be removed and replaced with full depth pavement for a distance of approximately 1300 feet.

**Turn Lane, Slip Ramp and Ramp 'D' Widening** - Base widening would be provided in the median of eastbound MD 202 to provide a left turn lane approximately 800 feet in length onto Ramp 'D'. Eastbound MD 202 would be connected to Ramp 'D' with a new 26 foot wide slip ramp. Ramp 'D' would be base widened from the proposed slip ramp north. The Ramp 'D' widening would occur on the west side of the ramp for the entire 1,600 foot distance between the MD 202 and I-95/I-495 gores.

**I-95/I-495 at Arena Drive**

This improvement would consist of the construction of a full diamond interchange (ramps in all four quadrants), connecting I-95/I-495 with Arena Drive. The initial improvement would consist of special use (before and after stadium events) ramps on the west side of I-95/I-495 only. It is anticipated that the interchange will be upgraded to a full movement interchange by 2020.

Interchange Ramp 'A', which would be constructed initially and connect southbound I-95/I-495 with Arena Drive, would be a 2-lane, 26 foot wide open section. Ramp 'B', which would connect Arena Drive to southbound I-95/I-495 and also be constructed initially, would taper from a 2-lane, 26 foot open section to 1-lane before the I-95/I-495 gore. Ramp 'C', which would be constructed in the future to connect northbound interstate traffic to Arena Drive, would taper from 1-lane before the I-95/I-495 gore to 2-lanes at Arena Drive. Ramp 'D', which would also be constructed in the future, would connect Arena Drive with northbound I-95/I-495 and taper from 2-lanes to 1-lane. A total of approximately 11.6 acres of right-of-way would be required to construct the four ramps.





TO U.S. 50

**LIMIT OF STUDY**

3.7m (12') BASE WIDENING

PROPOSED RETAINING WALL

**I-95 / I-495 (CAPITAL BELTWAY)**

**RAMP 'D'**

3.7m (12') BASE WIDENING

SLIP RAMP

BASE WIDENING FOR LEFT TURN LANE

U.S. 117

725+00 730+00 735+00 740+00 745+00 750+00 755+00 760+00 765+00

BASELINE I-95 / I-495

PC Sta 300+69.29  
PCC Sta 304+23.9  
PT Sta 312+87.11

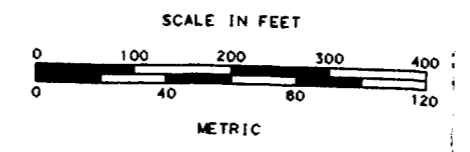
**RAMP 'A'**

3.7m (12') BASE WIDENING RAMP 'A'

**MD 202**

**LEGEND**

- PROPOSED ROADWAY IMPROVEMENT
- PROPOSED RIGHT OF WAY LINE
- EXISTING RIGHT OF WAY OR PROPERTY LINE
- GRADING LIMITS
- PROPOSED EDGE OF SHOULDER
- WETLAND BOUNDARY OR WATERS OF THE U.S.
- AIR & NOISE RECEPTOR LOCATION



LANDOVER MALL

MATCH LINE SEE FIGURE NO. 1V-3

STATE OF MARYLAND  
 DEPARTMENT OF TRANSPORTATION  
 STATE HIGHWAY ADMINISTRATION

**I-95 / I-495 (CAPITAL BELTWAY)  
 ACCESS IMPROVEMENTS FROM MD 202 TO MD 214  
 (INTERSTATE ACCESS POINT APPROVAL)  
 ALTERNATIVE 3 - PLAN**

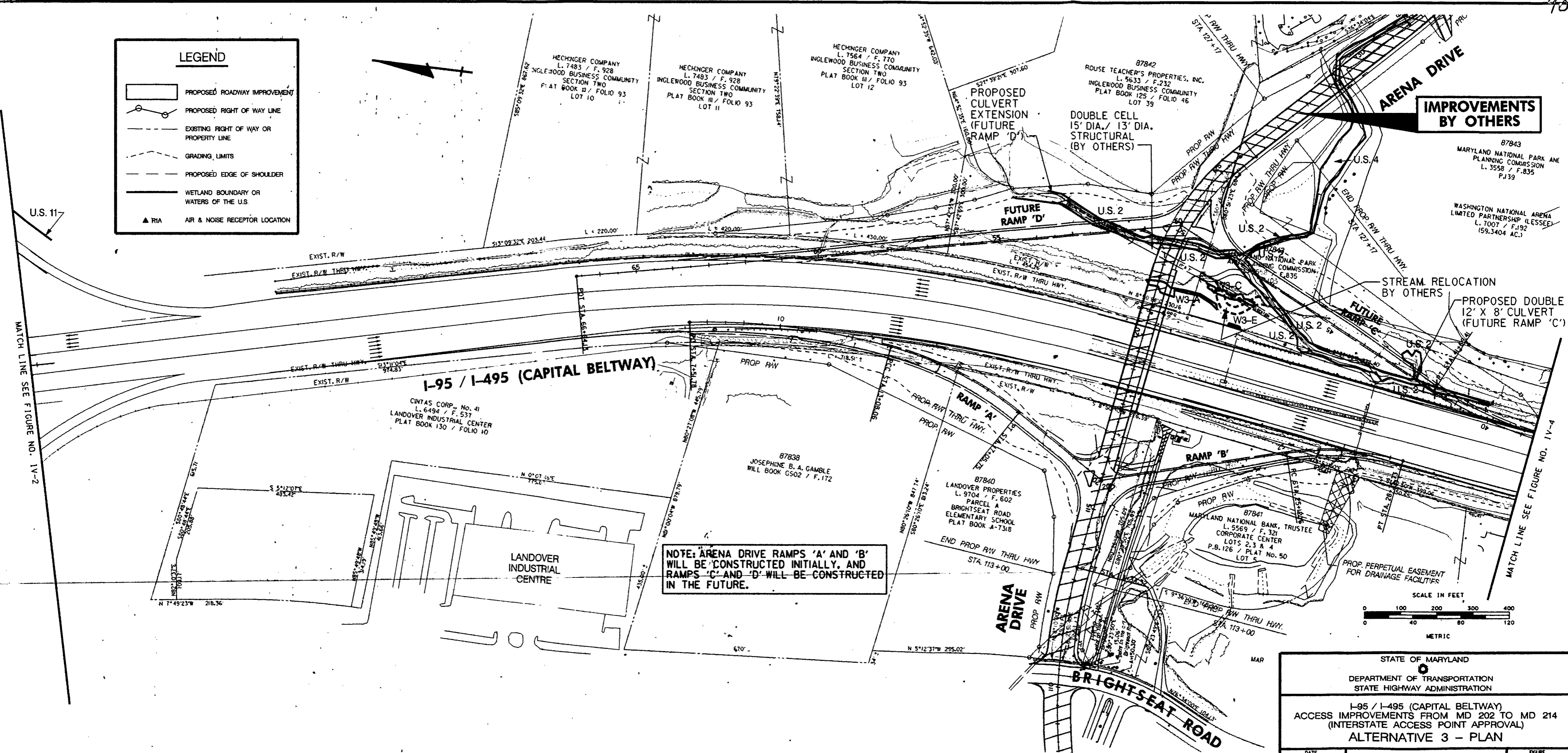
DATE JUNE, 1996	SCALE 1" = 200'	FIGURE IV-2
--------------------	--------------------	----------------

**LEGEND**

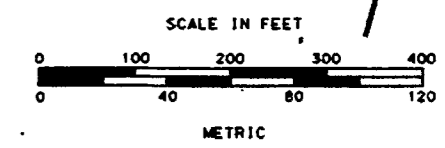
- PROPOSED ROADWAY IMPROVEMENT
- PROPOSED RIGHT OF WAY LINE
- EXISTING RIGHT OF WAY OR PROPERTY LINE
- GRADING LIMITS
- PROPOSED EDGE OF SHOULDER
- WETLAND BOUNDARY OR WATERS OF THE U.S.
- AIR & NOISE RECEPTOR LOCATION



**IMPROVEMENTS BY OTHERS**



**NOTE: ARENA DRIVE RAMPS 'A' AND 'B' WILL BE CONSTRUCTED INITIALLY, AND RAMPS 'C' AND 'D' WILL BE CONSTRUCTED IN THE FUTURE.**



STATE OF MARYLAND  
DEPARTMENT OF TRANSPORTATION  
STATE HIGHWAY ADMINISTRATION

**I-95 / I-495 (CAPITAL BELTWAY)  
ACCESS IMPROVEMENTS FROM MD 202 TO MD 214  
(INTERSTATE ACCESS POINT APPROVAL)  
ALTERNATIVE 3 - PLAN**

DATE JUNE, 1996	SCALE 1" = 200'	FIGURE IV-3
--------------------	--------------------	----------------



USAIR ARENA

TO ARENA DR

TO MD 214

I-95 / I-495 (CAPITAL BELTWAY)

MATCH LINE SEE FIGURE NO. IV-3

MATCH LINE SEE FIGURE NO. IV-5

EXIST. R/W  
EXIST. R/W THRU HWY.

EXIST. R/W  
EXIST. R/W THRU HWY.

EXIST. R/W THRU HWY.  
EXIST. R/W

EXIST. R/W THRU HWY.  
EXIST. R/W

CENTRE POINT CORPORATE PARK

CORPORATE PRESS

VACANT OFFICE BUILDING

MANOR BUSINESS CENTER

CONTINENTAL PLACE

CONGRESS PLACE

BRIGHTSEAT ROAD

R2B

R2A

R1B

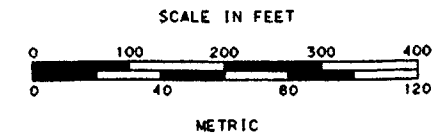
R1A

R2C

R3

**LEGEND**

- PROPOSED ROADWAY IMPROVEMENT
- PROPOSED RIGHT OF WAY LINE
- EXISTING RIGHT OF WAY OR PROPERTY LINE
- GRADING LIMITS
- PROPOSED EDGE OF SHOULDER
- WETLAND BOUNDARY OR WATERS OF THE U.S.
- AIR & NOISE RECEPTOR LOCATION



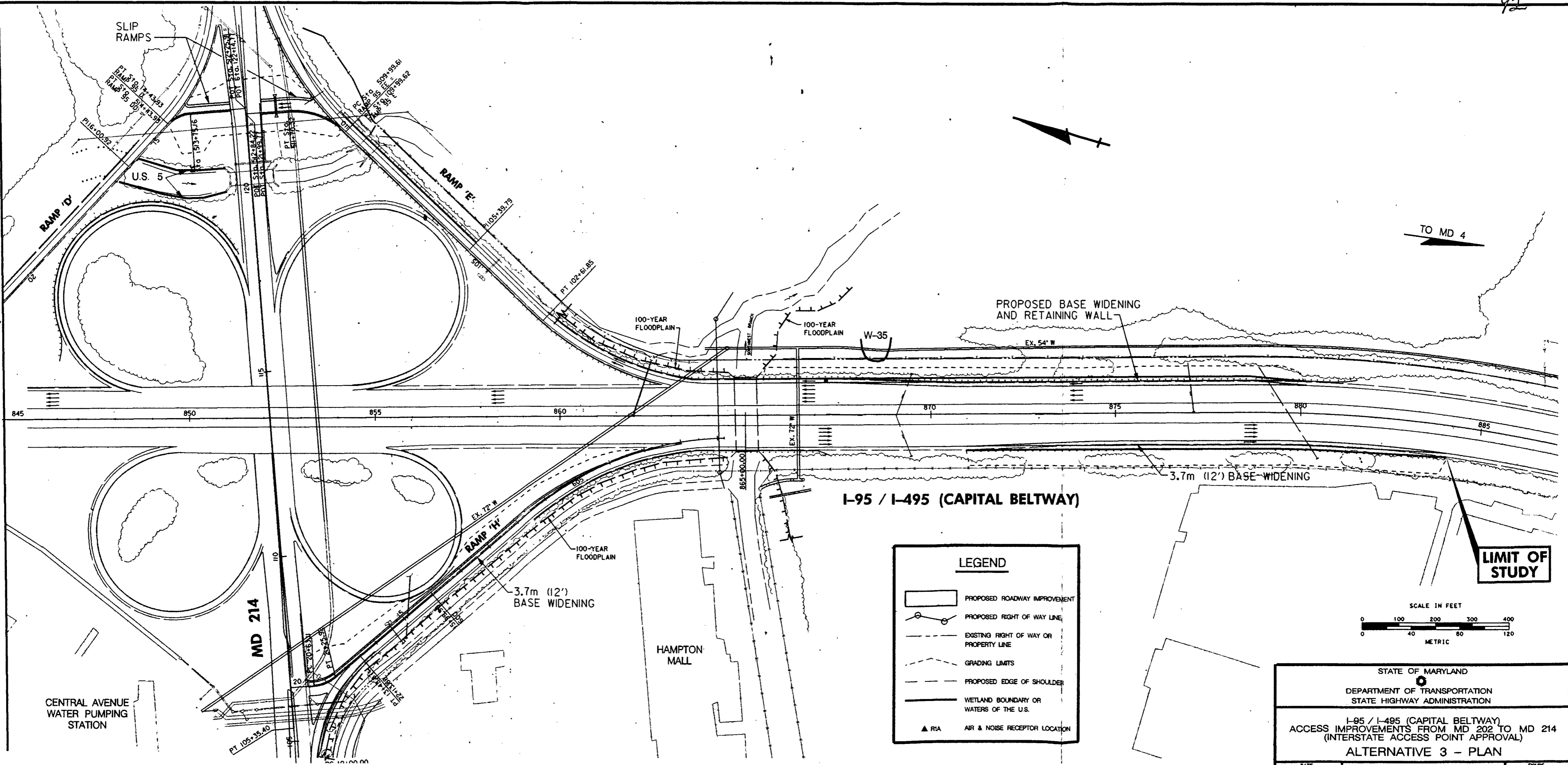
STATE OF MARYLAND  
 DEPARTMENT OF TRANSPORTATION  
 STATE HIGHWAY ADMINISTRATION

I-95 / I-495 (CAPITAL BELTWAY)  
 ACCESS IMPROVEMENTS FROM MD 202 TO MD 214  
 (INTERSTATE ACCESS POINT APPROVAL)

**ALTERNATIVE 3 - PLAN**

DATE JUNE, 1996	SCALE 1" = 200'	FIGURE IV-4
--------------------	--------------------	----------------

MATCH LINE SEE FIGURE NO. IV-4



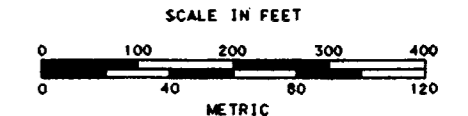
PROPOSED BASE WIDENING AND RETAINING WALL

I-95 / I-495 (CAPITAL BELTWAY)

LIMIT OF STUDY

**LEGEND**

- PROPOSED ROADWAY IMPROVEMENT
- PROPOSED RIGHT OF WAY LINE
- EXISTING RIGHT OF WAY OR PROPERTY LINE
- GRADING LIMITS
- PROPOSED EDGE OF SHOULDER
- WETLAND BOUNDARY OR WATERS OF THE U.S.
- RIA AIR & NOISE RECEPTOR LOCATION



STATE OF MARYLAND  
 DEPARTMENT OF TRANSPORTATION  
 STATE HIGHWAY ADMINISTRATION

I-95 / I-495 (CAPITAL BELTWAY)  
 ACCESS IMPROVEMENTS FROM MD 202 TO MD 214  
 (INTERSTATE ACCESS POINT APPROVAL)

**ALTERNATIVE 3 - PLAN**

DATE JUNE, 1996	SCALE 1" = 200'	FIGURE IV-5
--------------------	--------------------	----------------

**I-95/I-495 at MD 214**

**Ramp 'H' Widening** - The proposed improvements would consist of base widening of the existing Ramp 'H'. The widening would take place to the north side of the ramp, thereby eliminating the need to relocate existing light standards and minimizing impacts to the existing swale to the south of Ramp 'H'. The improvements would require the relocation of curb, light poles, guardrail and possibly the overhead sign at the gore at MD 214.

**Merge Lane Extension on I-95/I-495 Southbound** - An additional 1300 feet of merge length would be provided by base widening 12 feet adjacent to the existing southbound roadway. The widening would require cut and fill adjacent to the southbound roadway and be designed using modified jersey barriers as retaining walls to keep disturbance within existing right-of-way.

**Diverge Lane Extension on I-95/I-495 Northbound** - This improvement would consist of a 1,000 foot extension of the diverge lane for northbound I-95/I-495 onto eastbound MD 214. Base widening would be provided by removing the existing shoulder and replacing with full depth pavement. A retaining wall would be provided to keep disturbance within existing right-of-way.

**Slip Ramps** - Improvements at the MD 214 interchange would also include slip ramps that allow traffic on the northbound-to-eastbound ramp (Ramp 'E') to turn left onto westbound MD 214, and allow eastbound MD 214 traffic to turn left onto Ramp 'D', which is currently the westbound-to-northbound ramp. These slip ramps allow more versatility and capacity for managing stadium event traffic operations. The slip ramp from the I-95/I-495 off ramp to MD 214 would be 2-lanes with shoulders, and the slip ramp from MD 214 to the I-95/I-495 on ramp would be 1-lane with shoulders. The median barrier on MD 214 would be removed at the slip ramps' intersection.

**B. Alternatives Dropped from Further Consideration**

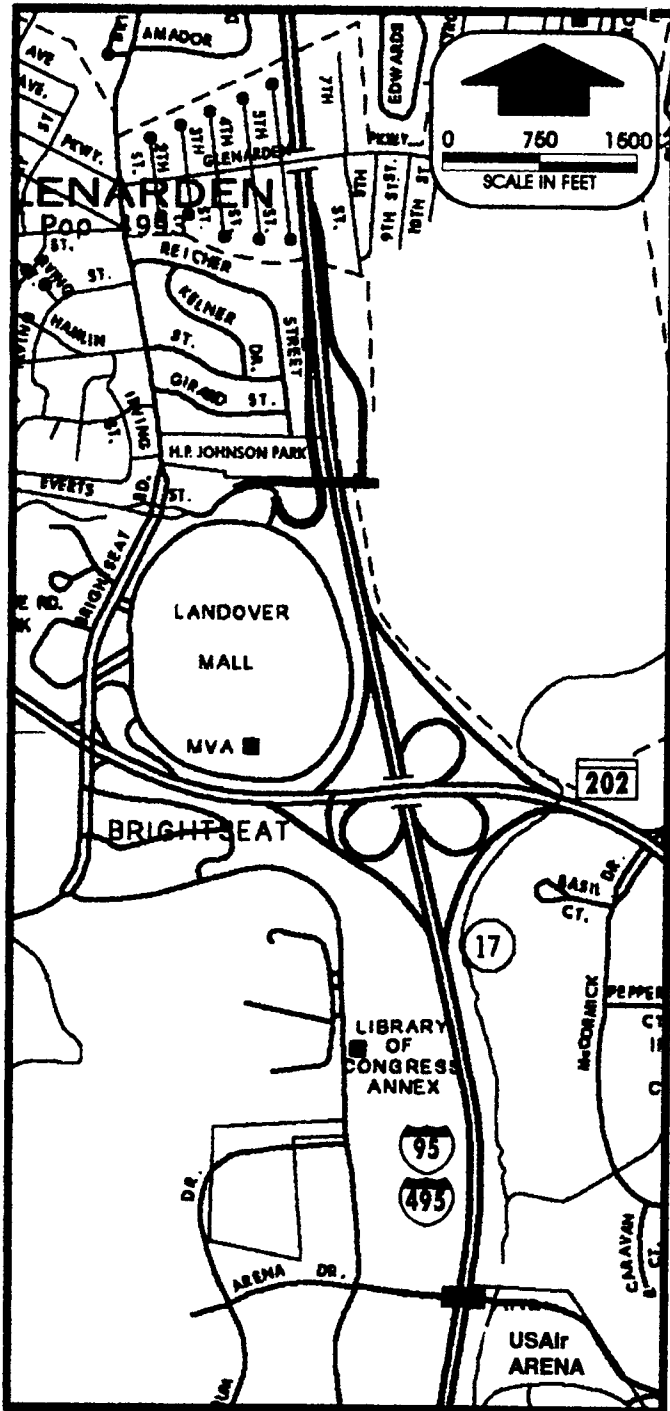
The development of interchange improvements associated with Alternative 3 resulted from the consideration of approximately 23 alternatives which generally fell within seven categories:

- 1) Evarts Street Interchange
- 2) MD 202 Interchange Modifications
- 3) Arena Drive Interchange - Diamond
- 4) Arena Drive Interchange - Loop Ramps
- 5) Arena Drive Interchange - Median Ramp
- 6) Arena Drive Interchange - Single Point Diamond
- 7) USAir Arena Parking

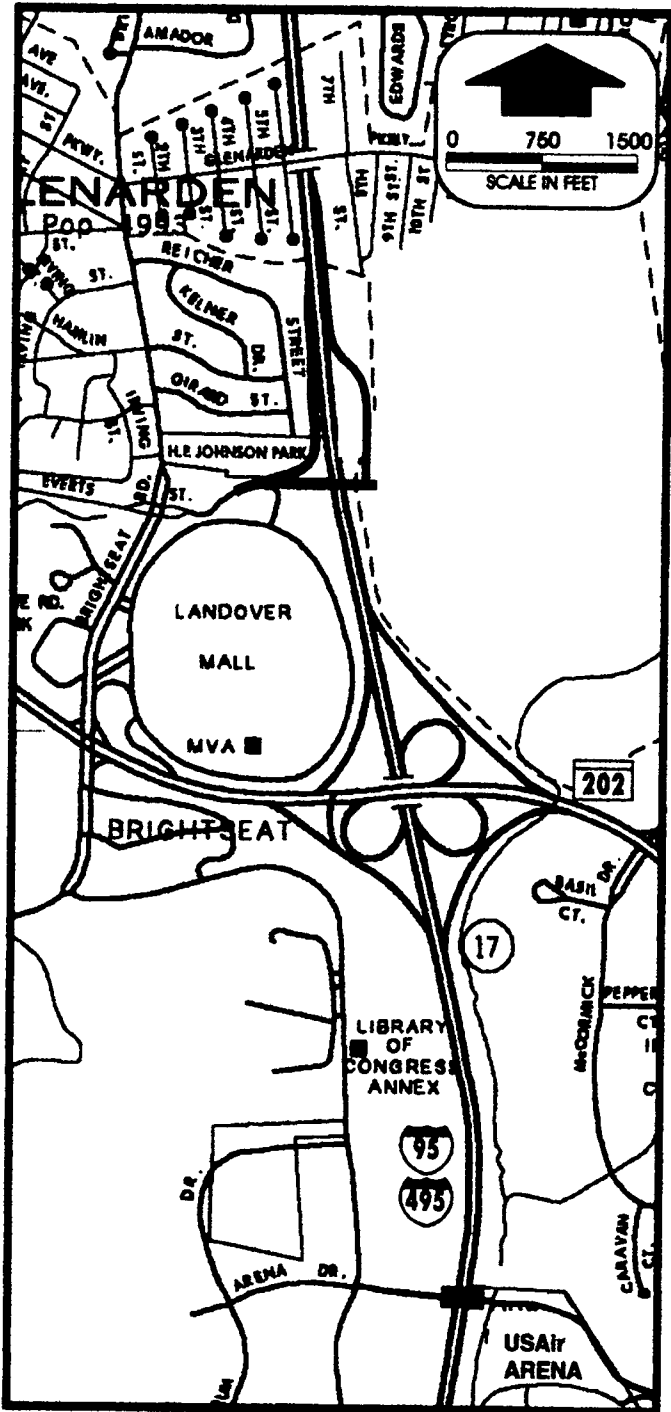
A summary of the improvements that were developed under each category and the reasons for elimination of those improvements not included with Alternative 3 is as follows:

**1) Evarts Street Interchange (See Figure IV-6)**

The improvement of Evarts Street from a four-to-six lane arterial between Brightseat Road and Campus Way, including a bridge over I-95/I-495, is included in the Landover and Vicinity Master Plan. Two options were considered for providing an I-95/I-495 interchange at the Evarts Street crossing. Option 1 would provide a loop ramp to bring southbound I-95/I-495 traffic into an intersection on the south side of Evarts Street after crossing under the Evarts Street bridge. This option would require elimination of 350 to 400 parking spaces at the Landover Mall and reconstruction of 700 to 800 feet of noise barriers along I-95/I-495. Option 2 would consist of a diamond ramp from southbound I-95/I-495 onto westbound Evarts Street. This option would result in the need for 700 to 800 feet of noise barrier reconstruction and 35,000 square feet of right-of-way acquisition from the H.P. Johnson Park. Both options would include a ramp for the return movement from Evarts Street to northbound I-95/I-495. These options were dropped from consideration because of the noise wall and park impacts, lack of improvement for USAir Arena access, the high cost of the northbound ramp and resulting concentration of all southbound I-95/I-495 traffic at the MD 202/Brightseat Road intersection.



**EVARTS STREET  
OPTION 1**



**EVARTS STREET  
OPTION 2**

**I-95 / I-495 (CAPITAL BELTWAY)  
ACCESS IMPROVEMENTS  
FROM MD 202 TO MD 214  
(INTERSTATE ACCESS POINT APPROVAL)**

**ALTERNATIVES DROPPED  
FROM CONSIDERATION**

**FIGURE IV - 6**

**2) MD 202 Interchange Modifications (See Figure IV-7)**

Three basic options for improving the I-95/I-495 interchange at MD 202 were developed. The first option, the “roller coaster” ramp, would consist of a direct connection between southbound I-95/I-495 and westbound Sheriff Road. The ramp would split from the existing southbound I-95/I-495 ramp onto westbound MD 202, continue under the western end span of the MD 202 bridge, then climb over the existing southbound to eastbound loop ramp and eastbound to southbound directional ramp and tie-in to Sheriff Road. The existing curve that transitions Sheriff Road into Brightseat Road would be reconstructed, resulting in a right angle intersection, and coming east out of this intersection would be a ramp onto southbound I-95/I-495. This option would provide the advantage of being a daily use ramp, relieving the MD 202/Brightseat Road intersection and would have minimal wetland disturbance. However, the disadvantages are prohibitive. Ramp grades would be 7% to 10%, which exceeds American Association of State Highway and Transportation Officials (AASHTO) criteria, and there would be limited sight distance at the Brightseat Road intersection with the ramp. Major reconstruction of commercial driveways would be required along Brightseat Road. This configuration would be inconsistent with the master plan, and the cost, estimated to be \$13 million, would exceed the \$7.3 million estimate for ramps to and from southbound I-95/I-495 at Arena Drive. For these reasons, this option was dropped from consideration.

A second option considered at the I-95/I-495 interchange with MD 202 would consist of reconstruction and realignment of the southwest quadrant ramps. This option would have the same take-off as the Option 1 ramp but would require reconstruction of the loop ramp and outer ramp in the southwest quadrant to provide a direct connection onto westbound Sheriff Road. Similar to the “roller coaster” ramp, eastbound Sheriff Road traffic would continue through a right angle intersection created with Brightseat Road onto ramp connecting to southbound I-95/I-495. The advantages and disadvantages of this option are similar to the “roller coaster” ramp. Although this option is less expensive, its cost would still be higher than a partial diamond at Arena Drive and would require a decision point at sharply curved portion of an interchange ramp. For these reasons, this option was dropped from further consideration.

The third option considered at the I-95/I-495 interchange with MD 202 would consist of new slip ramp, widening of two of the ramps and northbound acceleration lane lengthening. This option, previously described in detail, is being carried through the Interstate Access Point Approval process.



**3) Arena Drive Interchange - Diamond (See Figure IV-8)**

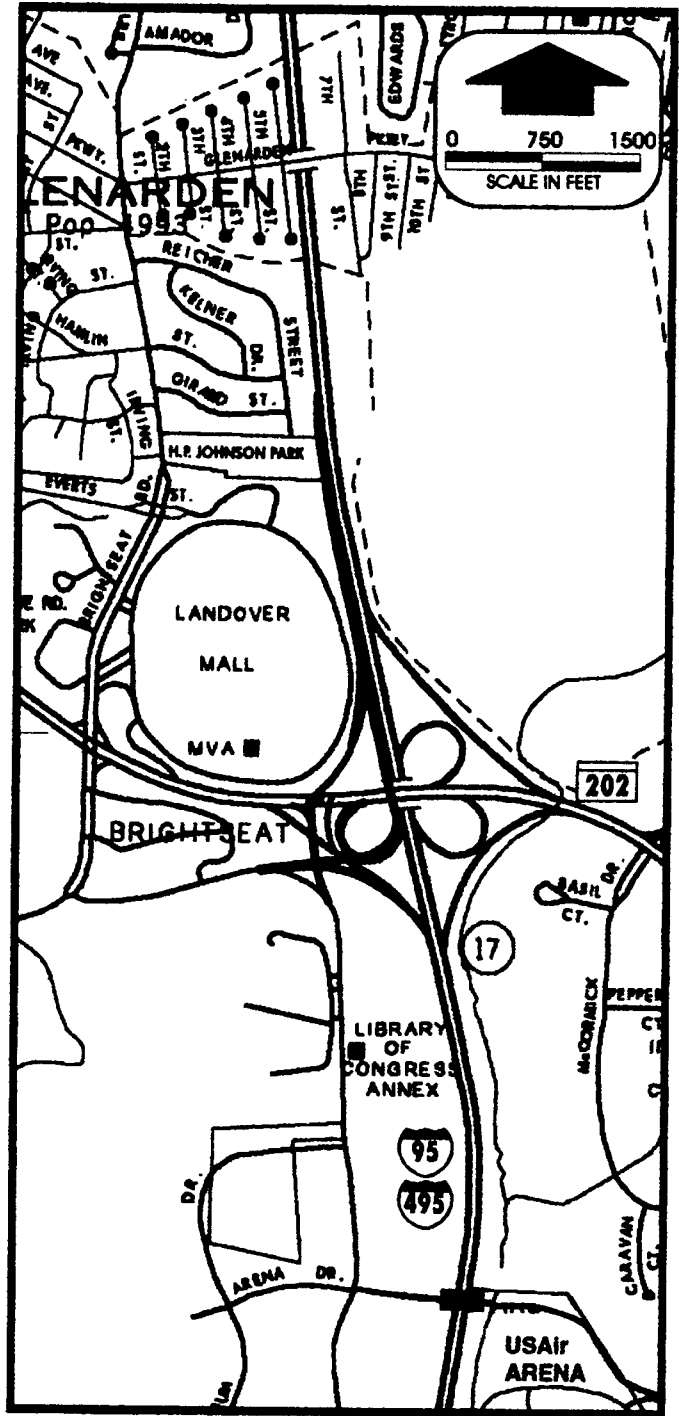
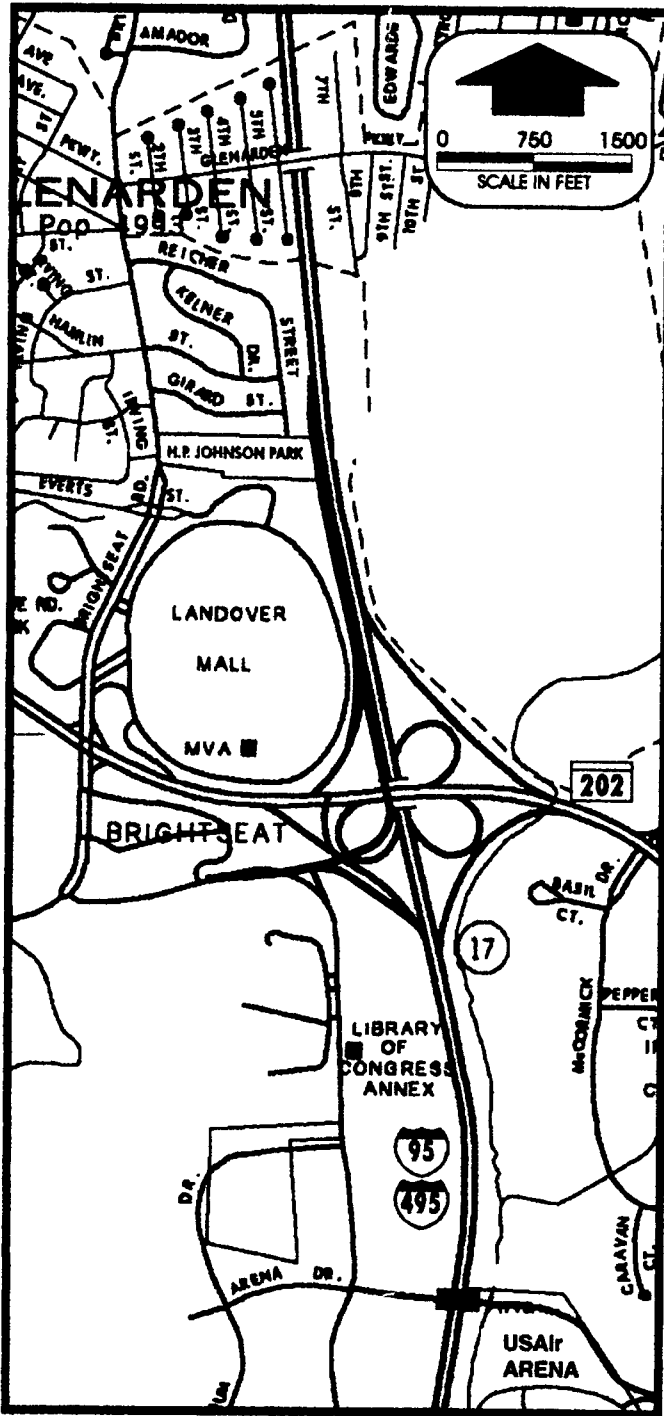
Three basic options for constructing a I-95/I-495 diamond interchange at Arena Drive were developed. The first option, single southbound to westbound ramp, would consist of a direct connection between southbound I-95/I-495 and westbound Arena Drive. This would be a standard interchange connection. No other ramp connection would be provided. This option provides the advantage of the additional I-95/I-495 southbound connection and relieves part of the MD 202/Brightseat Road intersection congestion. The disadvantage is that no return movement is provided in either direction with no improvement for USAir Arena access. This option is the Ramp "A" portion, previously described in detail, that is being carried through the Interstate Access Point Approval process.

A second option considered, for both southbound or west side ramps, would consist of direct connection between I-95/I-495 with westbound Arena Drive, Ramp A, and eastbound Arena Drive with I-95/I-495 southbound, Ramp B. This option provides access with Ramp B, to southbound I-95/I-495 that the first option was lacking. In addition, the movements to eastbound and from westbound Arena Drive are to be provided. This option is the Ramp A and Ramp B portion, previously described in detail, that is being carried through the Interstate Access Point Approval process.

The third option considered at the I-95/I-495 interchange with Arena Drive would consist of a full diamond interchange. This option, previously described in detail, is being carried through the Interstate Access Point Approval process.

**4) Arena Drive Interchange - Loop Ramps (See Figure IV-9)**

Two options were considered for providing southbound I-95/I-495 loop ramps at Arena Drive. Option 1 would provide a standard loop ramp to bring southbound I-95/I-495 traffic into an intersection on the south side of Arena Drive after going under the Arena Drive Bridge. This option would place the ramp intersection with Arena Drive within 150 feet of the Brightseat intersection and would require the elimination of 3.4 acres of a stormwater management (SWM) pond. Option 2 would consist of a tighter loop ramp as described in Option 1. This would move the ramp intersection to the east, an additional 100 feet from the Brightseat intersection, but still require the elimination of the SWM pond. Both options would include a ramp to southbound I-95/I-495 that



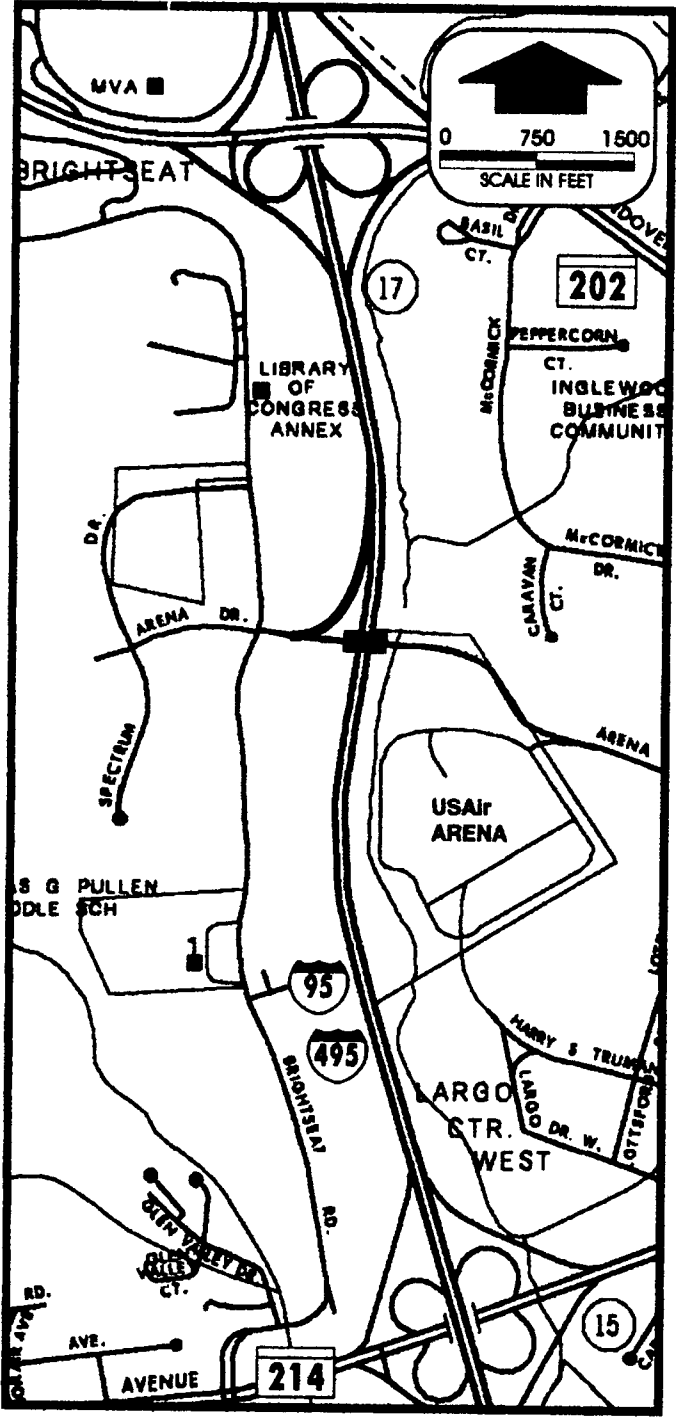
**MD 202  
OPTION 1  
(ROLLER COASTER RAMP)**

**MD 202  
OPTION 2  
(S.W. QUADRANT LOOP MODIFICATION)**

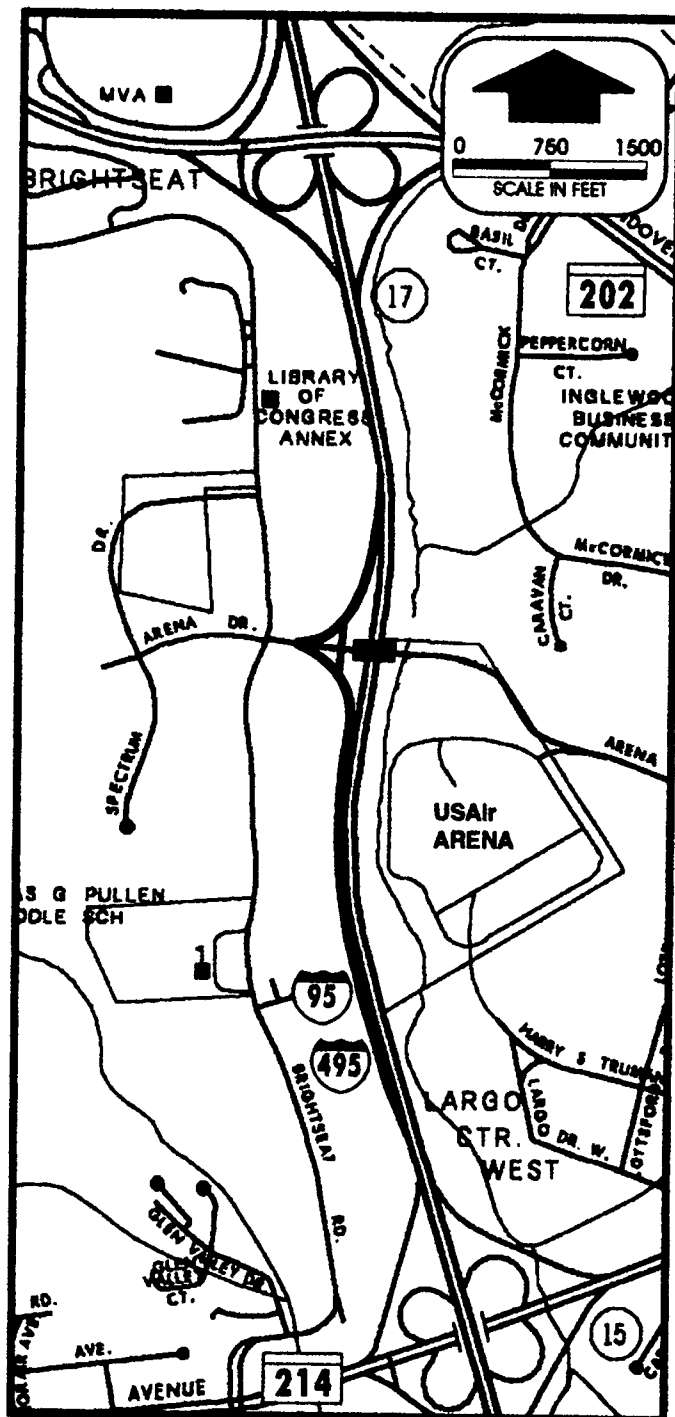
**I-95 / I-495 (CAPITAL BELTWAY)  
ACCESS IMPROVEMENTS  
FROM MD 202 TO MD 214  
(INTERSTATE ACCESS POINT APPROVAL)**

**ALTERNATIVES DROPPED  
FROM CONSIDERATION**

**FIGURE IV - 7**



**ARENA DRIVE  
DIAMOND - OPTION 1**

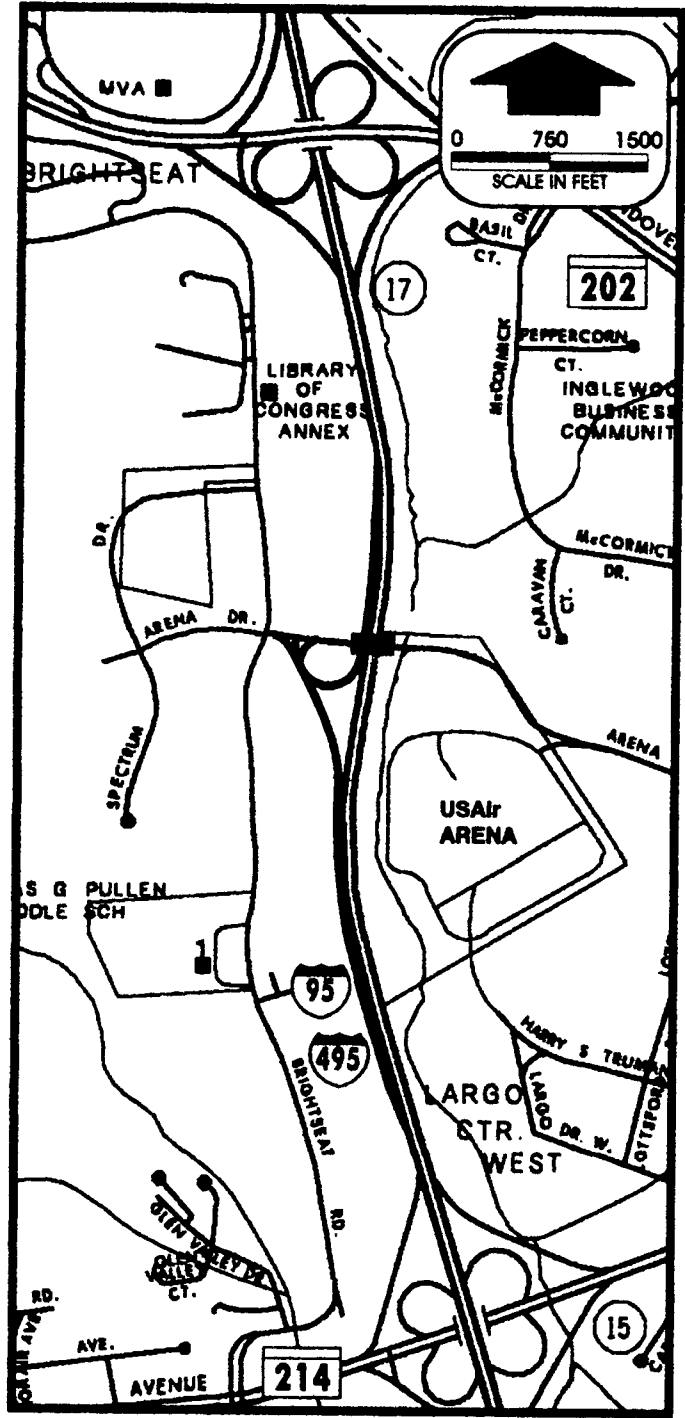


**ARENA DRIVE  
DIAMOND - OPTION 2**

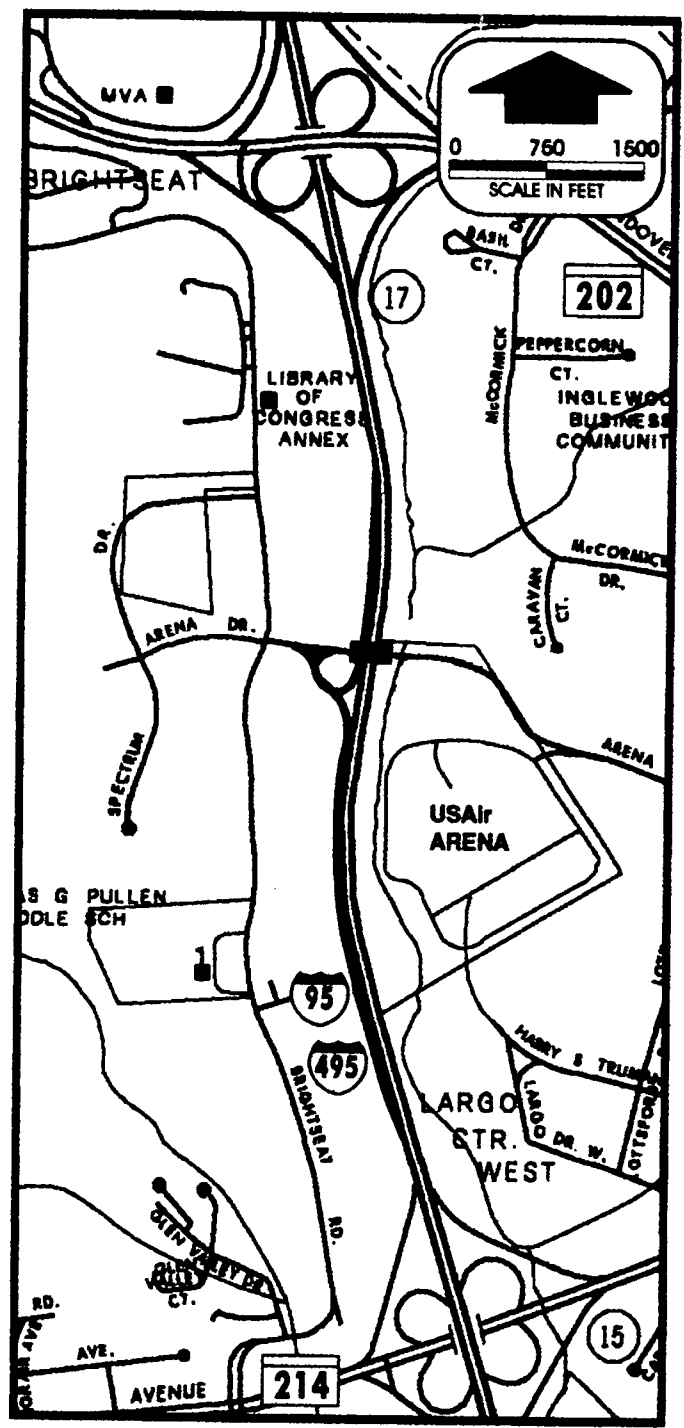
**I-95 / I-495 (CAPITAL BELTWAY)  
ACCESS IMPROVEMENTS  
FROM MD 202 TO MD 214  
(INTERSTATE ACCESS POINT APPROVAL)**

**ALTERNATIVES DROPPED  
FROM CONSIDERATION**

**FIGURE IV - 8**



**ARENA DRIVE LOOP - OPTION 1**



**ARENA DRIVE LOOP - OPTION 2**

**I-95 / I-495 (CAPITAL BELTWAY)  
ACCESS IMPROVEMENTS  
FROM MD 202 TO MD 214  
(INTERSTATE ACCESS POINT APPROVAL)**

**ALTERNATIVES DROPPED  
FROM CONSIDERATION**

**FIGURE IV - 9**

would share a portion of the I-95/I-495 off ramp and provide access to U.S. Air Arena. These options were dropped from consideration because of the SWM pond impacts, geometric concerns with the distance to the Brightseat intersection that, while allowing Brightseat traffic to flow, would create the potential for backing traffic onto the mainline, and shared use of part of the ramps that would limit capacity due to merge friction.

**5) Arena Drive Interchange - Median Ramps (See Figure IV-10)**

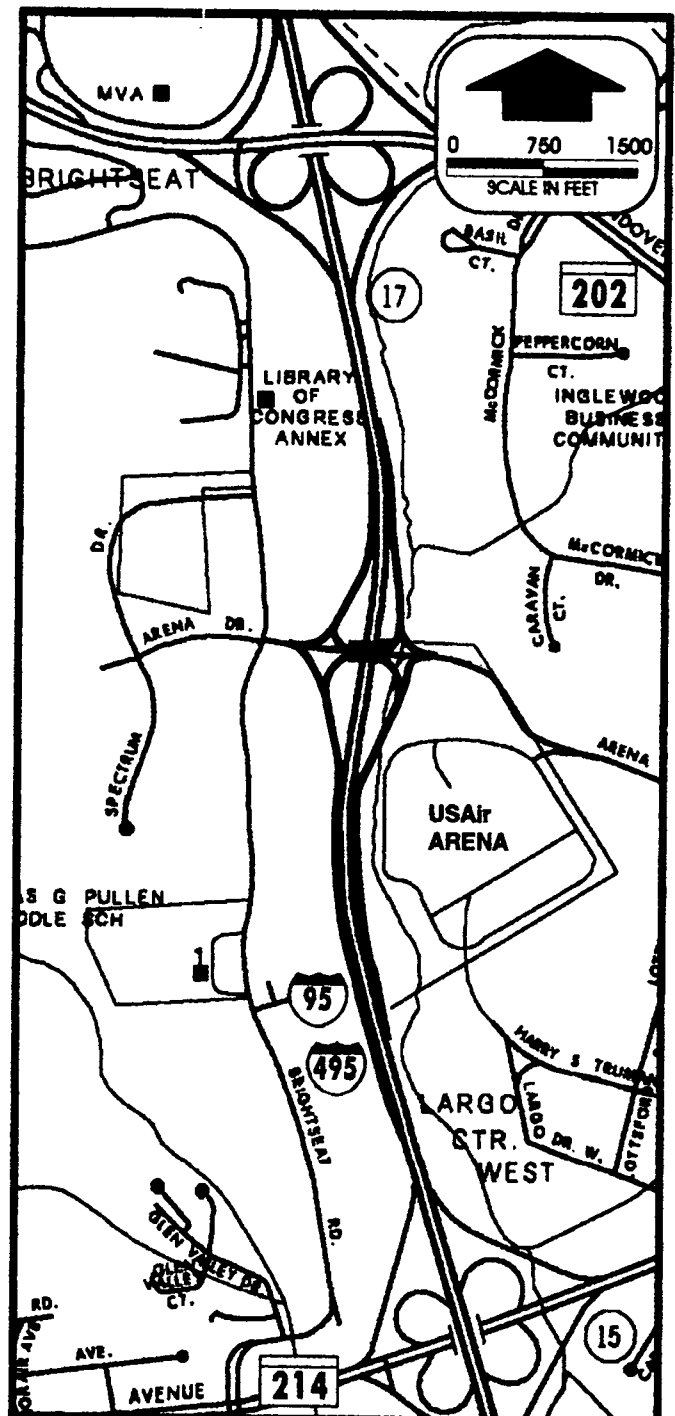
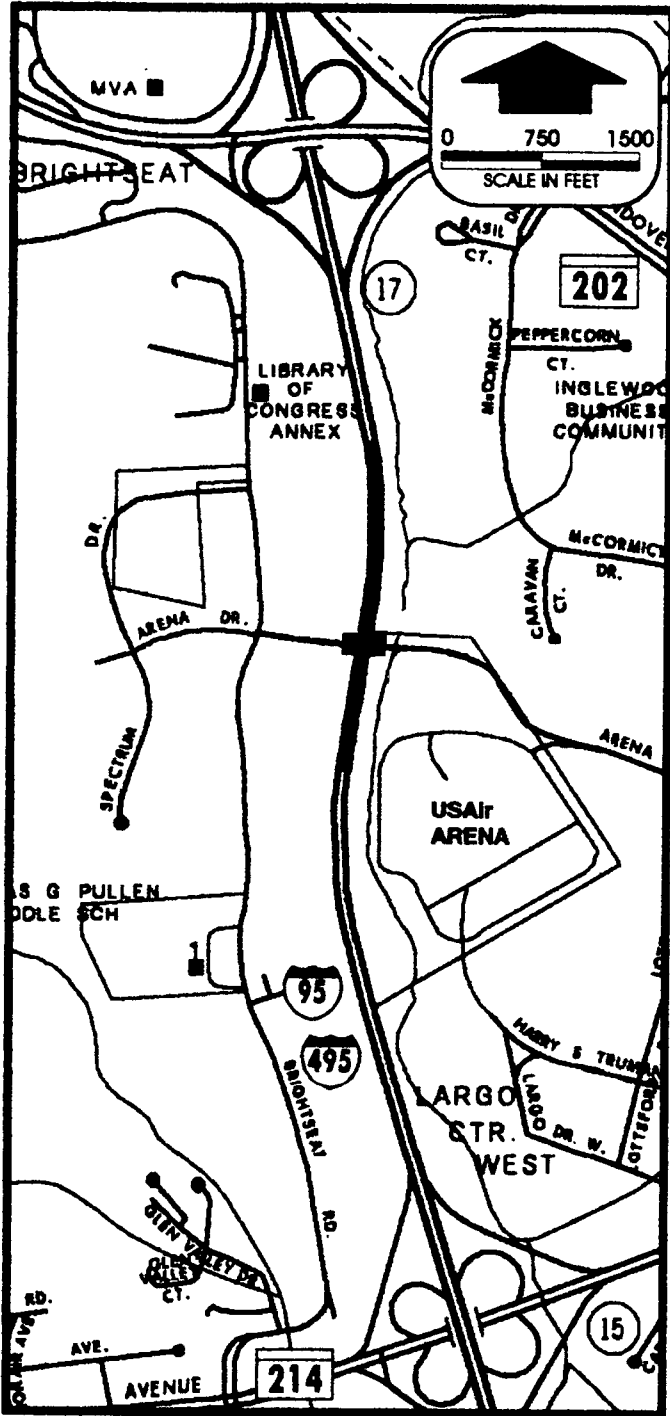
This improvement would have reversible median ramps to the new Arena Drive Bridge. These lanes would be reversible and would be used for both ingress and egress and could be compatible with High Occupancy Vehicle (HOV) lanes in the future. The advantages are that they would require no additional right-of-way, provide access to USAir Arena, have no wetland impacts and eliminate the weave between normal ramps to Arena Drive and the MD 202 and MD 214 interchanges. The disadvantages are that they would still require future further widening to the outside to provide through HOV lanes, time and cost to construct in the median because of the structures required, maintenance of traffic (MOT) to construct the structure in the median and the potential queuing along and into the "fast" lanes on I-95/I-495. This option was dropped from consideration because of the queuing, MOT, and time and cost to construct the structure in the median. The total cost for this alternative was estimated to be between \$20 million and \$25 million.

**6) Arena Drive Interchange - Single Point Diamond (See Figure IV-10)**

This improvement would provide ingress and egress from both southbound and northbound I-95/I-495. The advantages for this option would provide system redundancy, provide access to U.S. Air Arena, permits 2-way operation of Arena Drive and provides acceptable level of service for the Arena Drive/I-95/I-495 ramp intersection. The disadvantages are additional impacts of 6,000 to 7,000 square feet to wetlands, 400 to 500 feet to streams, 0.25 acre to the SWM pond and 700 to 800 feet of 54 to 60 inch water line and sewer line over the traditional diamond interchange and not easily staged construction and time consuming structure framing. This option was dropped from consideration because of the multiple impacts, construction timing, staging difficulties and cost which was estimated to be \$22 million to \$25 million.

**7) USAir Arena Parking**

Analysis was conducted to determine if various combinations of USAir Arena parking/shuttle bus service could be provided to optimize the operations of or alleviate the need for a major interchange improvement at MD 202, MD 214 and/or Arena Drive to satisfy stadium ingress/egress needs. This alternative was dropped from consideration primarily for the following two reasons: first, traffic accessing an event would need to use the same interchanges, whether it would be going to USAir Arena or the proposed stadium site. Therefore, the interchange volumes and operations would be basically the same with or without satellite parking. Also, the USAir Arena parking capacity would only satisfy approximately 25% of the stadium's needs.



**ARENA DRIVE  
MEDIAN RAMP**

**ARENA DRIVE  
SINGLE POINT DIAMOND OPTION**

**I-95 / I-495 (CAPITAL BELTWAY)  
ACCESS IMPROVEMENTS  
FROM MD 202 TO MD 214  
(INTERSTATE ACCESS POINT APPROVAL)**

**ALTERNATIVES DROPPED  
FROM CONSIDERATION**

**FIGURE IV - 10**

**V. ENVIRONMENTAL CONSEQUENCES**



**V. ENVIRONMENTAL CONSEQUENCES**

The environmental consequences discussed in this section are associated with all three alternatives that have been developed for consideration. Alternatives 1 and 2 do not require the action of Interstate Access Point Approval and affect only the socio-economic environment, primarily in the form of traffic-related issues. Alternative 3, which consists of a new interchange between Arena Drive and I-95/I-495 and improvements to the existing interchanges at MD 202 and MD 214, is the only alternative considered which requires Interstate Access Point Approval. Alternative 3 would result in some impacts to the natural environment, as presented herein. Traffic-related impacts for each of the alternatives are compared using a study area that is extended outside the Alternative 3 project area as necessary in order to assess the traffic-related differences between the alternatives.

**A. Social/Community**

The social and community impacts and benefits associated with the proposed alternatives are primarily traffic related. The traffic related effects associated with each alternative considered throughout the study area, as applicable, are discussed below.

**1. Interstate Traffic Operations**

Each of the three alternatives were analyzed for traffic operations in the year 2020 for projected AM and PM peak volume during weekdays and on stadium event Sundays. Alternative 1 requires no federal action and includes no improvements to access along I-95/I-495 at or between the MD 202 and MD 214 interchange ramps and assumes no events occurring at the stadium. Local roadway improvements on area master plans and Interstate improvements that have NEPA approval are assumed in place and operational, as described in Chapter IV. Alternative 1 is provided as a technical reference for evaluation of Interstate traffic operations with Alternative 3.

Alternative 2, as described in Chapter IV, consists of the existing roadway conditions and background network assumptions made with Alternative 1, but also assumes that the stadium is operational. Again, Alternative 2 requires no federal action and has been developed as a technical reference for comparison to the other alternatives for traffic related impacts.

Since there is only about a 6% difference in the volumes on I-95/I-495 between the Alternative 2 and Alternative 3 conditions outside the MD 202 and MD 214 interchanges and the majority of the Interstate analysis points indicate the same or better level of service operations with Alternative 3, it was felt a more valid comparison would be between Alternative 1 weekday conditions with Alternative 3 Sunday conditions to demonstrate the Interstate operational impacts with the proposed alternatives.

In general, traffic volumes decrease and operations improve on the Interstate system with Alternative 3 Sunday conditions versus Alternative 1 weekday conditions. Projected 2020 traffic volumes for the Alternative 3 weekday and Sunday peaks are included on Figures V-1 and V-2. Decreases in traffic volume on I-95/I-495 range from just over 1% for AM peak versus pre-game condition southbound vehicles north of MD 202, to over 38% for AM peak versus pre-game condition northbound vehicles south of MD 202. Increases in I-95/I-495 traffic will occur between the Alternative 1 weekday conditions and the Alternative 3 Sunday conditions at the following locations:

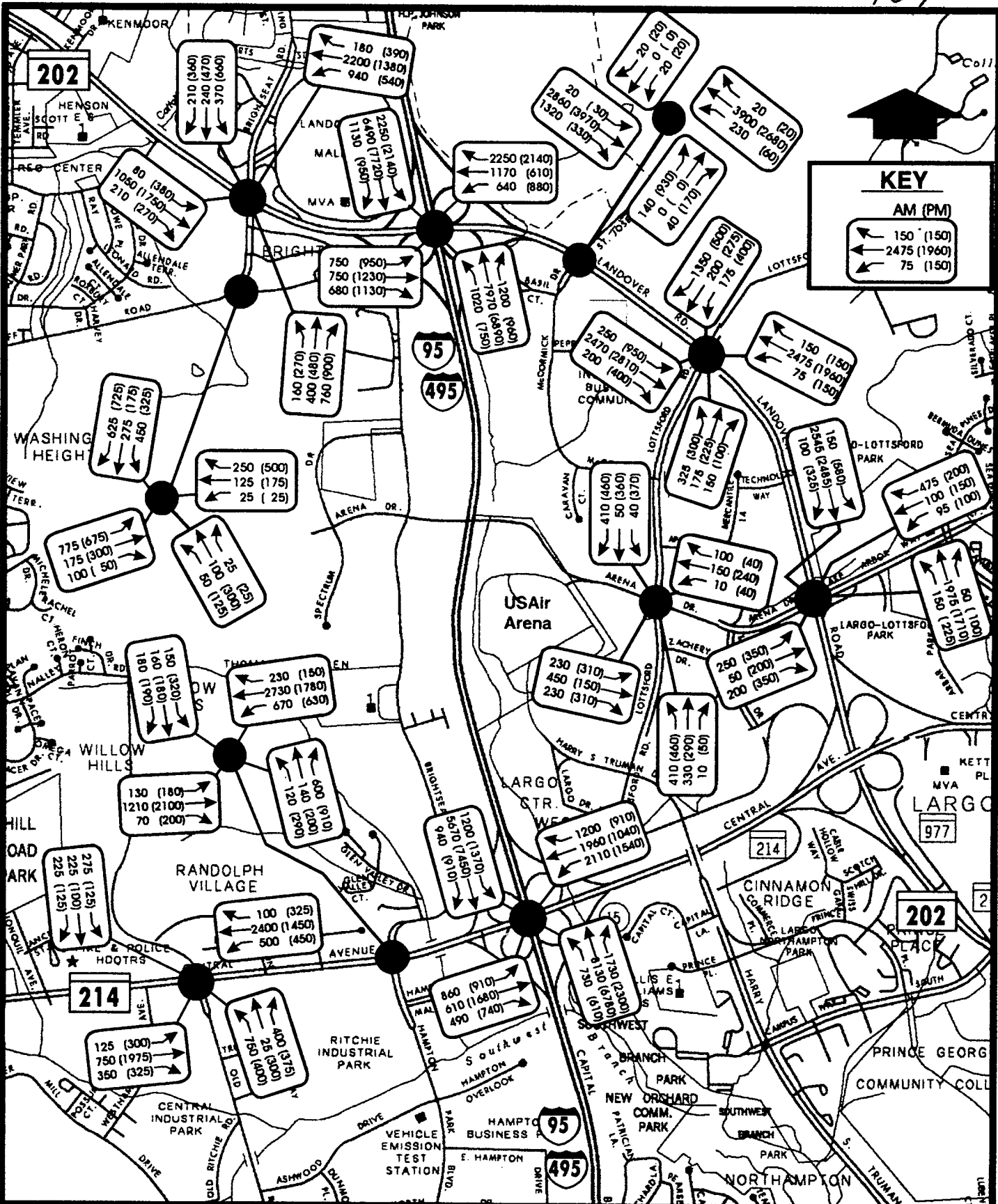
- Southbound vehicles south of MD 214 (PM peak versus post-game) +4%
- Northbound vehicles south of MD 202 (PM peak versus post-game) +15%
- Northbound vehicles north of MD 202 (PM peak versus post-game) +18%

The following discussion details a comparison of the analysis results from locations of four freeway components: interstate ramp roadways, interstate weaving areas, interstate ramp junctions and the basic freeway sections.

**a. Ramp Roadways**

Table V-1 compares traffic operations on interstate ramp roadways between the Alternative 1 weekday conditions and the Alternative 3 Sunday condition and shows that of the 15 ramps analyzed at the I-95/I-495 and MD 202 interchange and the I-95/I-495 and MD 214 interchange:

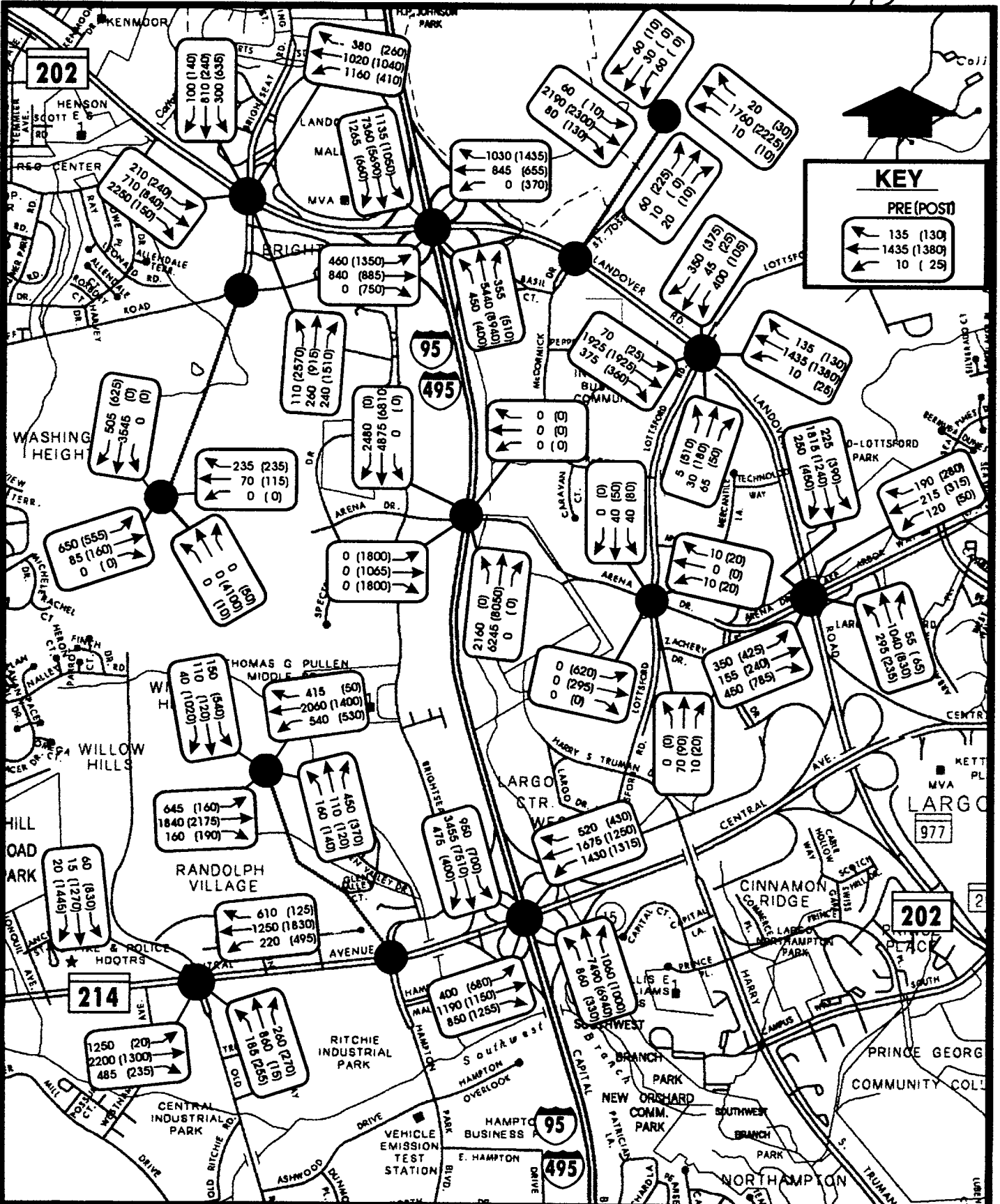
- 12 have better level of service with Alternative 3
- 3 failed with Alternative 1 while none fail with Alternative 3
- 10 experience two levels of service better with Alternative 3
- 1 has a decreased level of service in both the AM versus pre-game condition and



**I-95 / I-495 (CAPITAL BELTWAY)  
ACCESS IMPROVEMENTS  
FROM MD 202 TO MD 214  
(INTERSTATE ACCESS POINT APPROVAL)**

**2020 TRAFFIC VOLUMES  
ALTERNATIVES 1, 2 & 3  
WEEKDAY**

**FIGURE V - 1**



**KEY**

PRE (POST)

- ← 135 (130)
- ← 1435 (1380)
- ← 10 (25)

**I-95 / I-495 (CAPITAL BELTWAY)  
ACCESS IMPROVEMENTS  
FROM MD 202 TO MD 214  
(INTERSTATE ACCESS POINT APPROVAL)**

**2020 TRAFFIC VOLUMES  
ALTERNATIVE 3  
SUNDAY**

**FIGURE V - 2**

- the PM versus post-game condition with Alternative 3
- 2 have a decreased level of service in the AM versus pre-game condition with Alternative 3

In addition, the four ramps analyzed at the proposed Arena Drive interchange all operate at level of service E or better with Alternative 3.

**b. Interchange Weaves**

Table V-2 compares traffic operations at interstate weave locations between Alternative 1 weekday conditions and Alternative 3 Sunday conditions and shows that of the 12 weave areas at the MD 202 and MD 214 interchanges with I-95/I-495, nine fail in Alternative 1 while four fail in Alternative 3. All of the critical weaving speeds increase or remain the same. The non-weaving level of service will decrease at only one location with Alternative 3, although this is not the critical level of service at that analysis point. In addition, most of the weaving areas associated with the proposed Arena Drive interchange will operate at a level of service of C or better.

**c. Interchange Ramp Junctions**

Table V-3 compares traffic operations at interstate ramp junction locations between Alternative 1 weekday conditions and Alternative 3 Sunday conditions. This table shows that of the ten ramp junctions within the MD 202 and MD 214 interchanges with I-95/I-495, eight fail with Alternative 1 while three fail with Alternative 3. All of the density levels decrease or stay the same and none of the level of service decrease with Alternative 3. The one ramp junction analyzed at Arena Drive results in a level of service C.

**d. Basic Freeway Sections**

Table V-4 compares traffic operations on the basic freeway sections of I-95/I-495 between the Alternative 1 weekday conditions and the Alternative 3 Sunday conditions. This table shows that the I-95/I-495 basic freeway section will fail at one location with Alternative 1 and at no locations with Alternative 3 conditions.

TABLE V-1: INTERSTATE RAMP ROADWAY OPERATIONS IN 2020

Ramp Roadway	Free Flow Speed	Ramp Capacity	Alternative 1 Weekday Conditions - 2020				Alternative 3 Sunday Conditions - 2020			
			AM Peak		PM Peak		Pre-Game		Post-Game	
			Ramp Volume	Level of Service	Ramp Volume	Level of Service	Ramp Volume	Level of Service	Ramp Volume	Level of Service
SB I-95/I-495 to WB MD 202	45	2100	1130	C	950	C	1267	D	660	B
NB I-95/I-495 to WB MD 202	35	2000	1020	C	750	B	450	A	400	A
WB MD 202 to NB I-95/I-495	45	2100	2250	F	2140	F	1030	C	2035	E
EB MD 202 to NB I-95 /I-495	35	2000	750	B	950	C	460	A	750	B
SB I-95 /I-495 to EB MD 202	35	2000	2250	F	2140	F	1134	C	1050	C
EB MD 202 to SB I-95 /I-495	45	2100	726	B	1106	C	0	A	1120	C
NB I-95/I-495 to EB MD 202	45	2100	1200	C	960	C	356	A	510	A
SB I-95/I-495 to ARENA DR.	45	2100	-	-	-	-	2480*	D	-	-
ARENA DR. to SB I-95/I-495	45	2100	-	-	-	-	-	-	1800	E
NB I-95/I-495 to ARENA DR.	45	2100	-	-	-	-	2160*	C	-	-
ARENA DR. to NB I-95/I-495	45	2100	-	-	-	-	-	-	1800	E
SB I-95/I-495 to WB MD 214	45	2100	940	C	910	C	473	A	400	A
WB MD 214 to SB I-95/I-495	35	2000	1660	E	1370	D	750	B	1100	C
NB I-95/I-495 to WB MD 214	35	2000	490	A	740	B	862	C	330	A
WB MD 214 to NB I-95/I-495	45	2100	1200	C	910	C	520	B	430	A
NB I-95/I-495 to EB MD 214	45	2100	1730	E	2300	F	1060*	B	1000	C
EB MD 214 to NB I-95/I-495	35	2000	860	C	910	C	400	A	682	B
SB I-95/I-495 to EB MD 214	35	2000	1200	D	1370	D	950	C	700	B
EB MD 214 to SB I-95/I-495	45	2100	940	C	910	C	1510	D	1470	D

\* Denotes ramp capacity of 4100 with Alternative 3.

117

111

**TABLE V-2: INTERSTATE WEAVE AREAS OPERATIONS IN 2020**

Weaving Area	Alternative 1 Weekday Conditions -2020		Alternative 3 Sunday Conditions -2020	
	AM Peak	PM Peak	Pre-Game	Post-Game
NB I-95/I-495 under MD 202	F(27)/D	F(28)/D	E/D	F(31)/E
EB MD 202 over I-95/I-495	F(26)/F(31)	F(26)/E	F(32)/E	F(31)/E
WB MD 202 between I-95/I-495 and BRIGHTSEAT RD.	E/F (33)	E/E	-	D/D
EB MD 202 between I-95/I-495 and McCORMICK DR.	F(26)/F(33)	F(32)/E	D/C	D/D
NB I-95/I-495 between ARENA DR. and MD 202	-	-	-	E/C
SB I-95/I-495 between ARENA DR. and MD 214	-	-	-	C/B
WB MD 214 between I-95/I-495 and BRIGHTSEAT RD.	E/C	D/C	D/C	C/B
SB I-95/I-495 over MD 214	F(27)/E	F(27)/E	E/D	F(31)/D
NB I-95/I-495 over MD 214	F(31)/E	F(33)/E	E/D	E/D
WB MD 214 under I-95/I-495	F(29)/E	F(32)/E	F(33)/D	E/D
EB MD 214 under I-95/I-495	F(30)/E	F(29)/E	E/E	E/D
WB MD 214 between MD 202 and I-95/I-495	D/D	D/C	C/B	C/B
EB MD 214 between I-95/I-495 and MD 202	E/E	F(33)/E	C/C	C/C
NB I-95/I-495 between MD 214 and MD 202	C/B	B/B	-	-
NB I-95/I-495 between MD 202 and ARENA DR.	-	-	-	E/C

[WEAVING LOS (speed-mph)/NON-WEAVING LOS (speed-mph)]

**TABLE V-3: INTERSTATE RAMP JUNCTION OPERATIONS IN 2020**

Ramp Junction	Alternative 1 Weekday Conditions - 2020		Alternative 3 Sunday Conditions - 2020	
	AM Peak	PM Peak	Pre-Game	Post-Game
SB I-95/I-495 to WB MD 202 - diverge	F(44)	F(45)	F(38)	C
WB MD 202 to NB I-95/I-495 - merge	F(27)	F(30)	B	F(26)
SB I-95/I-495 to EB MD 202 - diverge	F(47)	F(51)	D	C
EB MD 202 to SB I-95/I-495 - merge	C	F(28)	-	C
WB MD 202 to NB I-95/I-495 - diverge	F	F	B	B
EB MD 202 to SB I-95/I-495 - diverge	B	C	-	C
SB I-95/I-495 to ARENA DR. - diverge	-	-	C	-
SB I-95/I-495 to WB MD 214 - diverge	E	F	-	-
NB I-95/I-495 to EB MD 214 - diverge	F(50)	F(50)	C	D
EB MD 214 to SB I-95/I-495 - merge	C	F(34)	B	F(25)
EB MD 214 to SB I-95/I-495 - diverge	A	B	B	C

[RAMP JUNCTION LOS (density in pc/mi/ln)]

**TABLE V-4: INTERSTATE BASIC FREEWAY SECTION OPERATIONS IN 2020**

Basic Freeway Section	Alternative 1 Weekday Conditions - 2020				Alternative 3 Sunday Conditions - 2020			
	AM Peak		PM Peak		Pre-Game		Post-Game	
	NB	SB	NB	SB	NB	SB	NB	SB
I-95/I-495 between MD 202 and MD 214	E	E	D	F	-	-	-	-
I-95/I-495 between MD 202 and ARENA DR.	-	-	-	-	D	D	D	D
I-95/I-495 between ARENA DR. and MD 214	-	-	-	-	D	C	D	C

[BASIC FREEWAY SECTION LOS]



## 2. Local Traffic Operations

Traffic related effects of the proposed alternatives on neighborhoods and communities were analyzed by comparing Alternative 1 weekday peak traffic conditions, Alternative 2 Sunday conditions and Alternative 3 Sunday conditions. As described in Chapter IV, Alternative 2 assumes that stadium events may occur with reasonable roadway, Transportation Demand Management and Transportation Systems Management improvements to provide a workable level of operations for stadium event ingress and egress. Alternative 2 provides a comparison of traffic related impacts with the other alternatives. A change in zoning approval would be required to implement Alternative 2. The following discussion details a comparison of local traffic operations through an analysis of the proposed traffic plan for Alternative 2, the local roadway volumes and the local intersection operations.

### a. Proposed Traffic Plan for Alternative 2

As shown on Figure V-3, the following traffic movement prohibitions are included in the pre-game Sunday conditions with Alternative 2:

#### MD 202 at Brightseat Road

In order to allow as much green time for westbound MD 202 traffic to turn left onto southbound Brightseat Road, MD 202 eastbound would be closed to through traffic at the Brightseat Road intersection. This would require detours onto MD 704 and northbound Brightseat Road (see Figure I-1) and divert 1050 vehicles wishing to make the through movement in Alternative 1 Sunday pre-game conditions. Of these 1050 diverted vehicles, 255 would make the left turn from MD 202 to northbound Brightseat Road which narrows to a local roadway north of MD 202. These diverted trips would impact the community of Glenarden along Brightseat Road. Approximately 275 diverted trips would turn onto northbound MD 704 to utilize US 50 or Ardmore Ardwick Road. These trips would only impact access to communities along these roads. The remaining 520 diverted trips would make a right turn from MD 202 to southbound MD 704, impacting only access to communities along this road. Approximately 260 of these trips would then make a left turn to Addison Road to access MD 214 and I-95/I-495 or MD 202. These diverted trips would impact the community of Seat Pleasant as they travel on Addison Road. The remaining 260 diverted trips on MD 704 would make a left turn onto Hill Road to continue to MD 214 or Walker Mill Road to Ritchie Marlboro Road.

These trips would only impact access to communities along these roads. There are no residential communities along Ritchie Marlboro Road in the area of diverted traffic.

Also, in order to allow as much green time for westbound MD 202 traffic to turn left onto southbound Brightseat Road, Brightseat Road northbound traffic at the MD 202 intersection would only be allowed to turn right. This action would divert a total of 370 vehicles wishing to make left turn or through movements at this intersection in Alternative 1 Sunday pre-game conditions (See Figure II-2). The 110 vehicles wishing to turn left onto MD 202 at Brightseat Road be diverted along Sheriff Road to MD 704. These trips, along with 200 of the vehicles wishing to make the through movement at MD 202/Brightseat, would only affect access to communities along Sheriff Road. A total of 60 diverted trips would make the right turn onto MD 202 and continue to I-95/I-495 or Lottsford Road. These diverted trips would not impact any residential communities. The intersection restrictions would remove 260 trips from Brightseat Road north of MD 202, thus reducing traffic along this local road through the community of Glenarden.

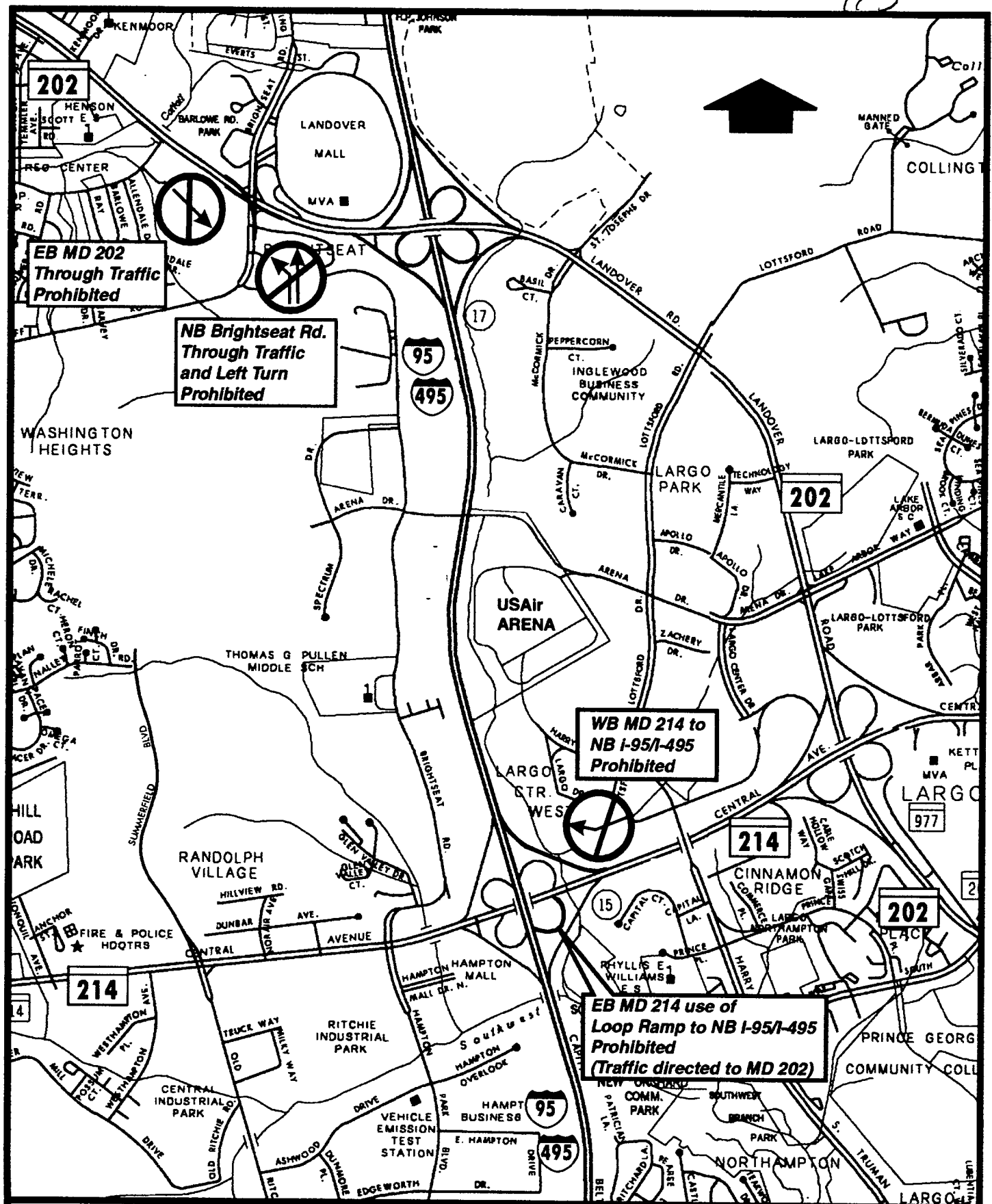
I-95/I-495 at MD 214

To eliminate the weave on westbound MD 214 between MD 202 and I-95/I-495, the ramp from westbound MD 214 to northbound I-95/I-495 would be closed. Any motorist wishing to make this movement would be detoured along MD 202 to I-95/I-495. This would require approximately 1 mile of additional travel for the 520 vehicles wishing to make this movement in Alternative 1 Sunday pre-game conditions and would not result in any impacts to residential communities.

The loop ramp for MD 214 eastbound vehicles to enter northbound I-95/I-495 would be closed to eliminate a weave along the interstate. These vehicles would be diverted to MD 202 and access I-95/I-495 at that interchange. This action affects 400 vehicles in Alternative 1 pre-game conditions would and have no impact to any residential communities.

Analysis of the above-described traffic plan indicates that the dump (egress) time from a stadium event would be approximately 10 additional minutes in Alternative 2 than Alternative 3. Thus local congestion may be 10 minutes longer after events with Alternative 2 conditions.

To further limit impacts to local neighborhoods, the conditions included in the approved stadium Specific Design Plan from The Maryland-National Capital Park and Planning Commission



**I-95 / I-495 (CAPITAL BELTWAY)  
ACCESS IMPROVEMENTS  
FROM MD 202 TO MD 214  
(INTERSTATE ACCESS POINT APPROVAL)**

**PRE-GAME TRAFFIC  
MOVEMENT PROHIBITIONS  
ALTERNATIVE 2 - SUNDAY**

**FIGURE V - 3**

state that access is not to be provided to the stadium site via Capital View Terrace, and that during stadium events, access to Hill Oaks Road and Sheriff Road west of Brightseat Road shall be limited to use by buses, emergency vehicles and local residential traffic not traveling to the stadium. Further discussions have taken place to deny bus access to Hill Oaks Road. To ensure that residents would receive breaks in traffic during stadium event ingress and egress, there are ongoing discussions with the Public Safety Chief of Prince George’s County for the provision of traffic control officers to be stationed at key points throughout the study area such as MD 202/Brightseat Road, Brightseat Road /Sheriff Road, MD 214/Summerfield Boulevard, MD 214/Brightseat Road, Brightseat Road/Arena Drive, MD 214/Addison Road and at cross streets along Summerfield Boulevard north of MD 214.

**b. Local Roadway Volumes**

The traffic disruptions to neighborhoods and communities will be reduced on Summerfield Boulevard, north of MD 214, and Brightseat Road, north of MD 214, with Alternative 3 as compared to Alternative 2 Sunday conditions. This is evidenced by the pre-game northbound traffic decreasing by 23% on Summerfield Boulevard and 41% on Brightseat Road with Alternative 3. Post-game southbound traffic reduces by over 14% and 21%, respectively.

A comparison of Alternative 1 weekday peak traffic conditions to Alternatives 2 and 3 Sunday conditions on Summerfield Boulevard and Brightseat Road north of MD 214 yields the observations in Tables V-5 and V-6.

**TABLE V-5**

<b>VEHICLES PER HOUR ALONG SUMMERFIELD BOULEVARD</b>		
<b>Condition</b>	<b>Southbound</b>	<b>Northbound</b>
Alternative 1 AM	725	250
Alternative 2 Pre-game	95 (87% less than Alt. 1)	3530 (over 14 times Alt. 1)
Alternative 3 Pre-game	95 (87% less than Alt.1)	2720 (over 10 times Alt.1)
Alternative 1 PM	350	925
Alternative 2 Post-game	4165 (over 11 times Alt. 1)	160 (83% less than Alt.1)
Alternative 3 Post-game	3545 (over 10 times Alt. 1)	160 (83% less than Alt.1)

TABLE V-6

VEHICLES PER HOUR ALONG BRIGHTSEAT ROAD		
Condition	Southbound	Northbound
Alternative 1 AM	490	500
Alternative 2 Pre-game	300 (39% less than Alt. 1)	1990 (over 3 times Alt. 1)
Alternative 3 Pre-game	300 (39% less than Alt. 1)	1170 (over 2 times Alt.1)
Alternative 1 PM	690	500
Alternative 2 Post-game	2150 (over 3 times Alt. 1)	330 (34% less than Alt.1)
Alternative 3 Post-game	1680 (over 2 times Alt. 1)	330 (34% less than Alt.1)

As shown on Figure II-2, the traffic volumes on Summerfield Boulevard southbound pre-game and northbound post-game are the same for all Alternatives for Sunday conditions. The Alternative 2 pre-game volume is more than 29 times the Alternative 1 volume for northbound Sunday pre-game conditions and over 36 times the Alternative 1 volume for southbound Sunday post-game conditions. These increases drop to more than 22 times and 30 times the Alternative 1 volumes with Alternative 3 conditions, respectively.

On Brightseat Road, Alternative 2 northbound pre-game and southbound post-game traffic volumes are more than six times Alternative 1 traffic for the equivalent time periods. Alternative 3 traffic is more than 3 and 4 times Alternative 1 for these same movements.

**c. Local Intersection Operations**

Table V-7 compares the level of service at intersections in the project area between the Alternative 2 Sunday conditions and the Alternative 3 Sunday conditions and shows that of the nine intersections analyzed, five fail with Alternative 2 and four fail with Alternative 3. The level of service with Alternative 3 will improve or stay the same at six of the nine intersections and decrease at three intersections. Both of the neighborhood and community sensitive intersections at MD 214 and Summerfield Boulevard and Brightseat Road will operate the same or better with Alternative 3 versus Alternative 2 Sunday conditions. As discussed previously, mitigation of traffic impacts on

communities in the area can be provided by police traffic control at intersections to insure that local residents can ingress and egress their neighborhoods under both alternatives.

TABLE V-7: INTERSECTION LEVEL OF SERVICE OPERATIONS IN 2020

Intersection	Alternative 2 Sunday Conditions - 2020		Alternative 3 Sunday Conditions - 2020	
	Pre-Game	Post-Game	Pre-Game	Post-Game
MD 202 / BRIGHTSEAT ROAD	D	F(1.13)	F(1.04)	F(1.13)
MD 202 / McCORMICK DRIVE	D	D	C	D
MD 202 / LOTTSFORD ROAD	D	F(1.05)	D	E
MD 202 / ARENA DRIVE	C	E	E	E
SHERIFF ROAD / BRIGHTSEAT ROAD	F(1.10)	F(1.10)	E	E
ARENA DRIVE / BRIGHTSEAT ROAD	B	C	E	F(1.04)
ARENA DRIVE / LOTTSFORD ROAD	B	A	A	A
MD 214 / BRIGHTSEAT ROAD	F(1.00)	F(1.13)	D	F(1.04)
MD 214 / SUMMERFIELD BOULEVARD	E	F(1.10)	E	F(1.04)

[INTERSECTION LOS (volume to capacity ratio)]

By comparing Table II-5 with Table V-7, it can be seen that five intersections also fail in Alternative 1 weekday conditions while none fail in Alternative 1 Sunday conditions. At the intersection of MD 214 and Brightseat Road, operations will be worse with both post-game conditions than with the Alternative 1 weekday PM peak volume, but only Alternative 2 pre-game conditions are worse at this intersection than with the Alternative 1 weekday AM peak volume. At the intersection of MD 214 and Summerfield Boulevard, operations will be worse in both post-game conditions as compared to the Alternative 1 weekday PM peak volume.

3. Disruption of Neighborhoods and Communities

The effects of the proposed alternatives on neighborhoods and communities are strictly traffic related, and do not involve any construction activity in neighborhoods. Alternatives 2 and 3 include stadium events which are expected to occur on a limited basis and generally on Sunday afternoons. While the possibility of events occurring at other times may exist, only Sunday events were analyzed

since Sundays represent the time period with the most background traffic as compared to other possible times when stadium events could occur.

**a. Displacements/Acquisitions**

The proposed alternatives would not result in any residential or business displacements nor require the acquisition of land from any residential property.

**b. Adverse Population Effects**

There is no evidence that minority, elderly, or handicapped populations will be adversely affected by any of the alternatives.

Since I-95/I-495, MD 202, MD 214 and the associated interchanges are existing facilities and the proposed Arena Drive interchange with I-95/I-495 would impact only vacant industrial and undeveloped land, none of the alternatives would cause the permanent separation of residents from other residents or community facilities, nor produce any permanent adverse changes in social interaction, or permanently disrupt community cohesion.

**c. Noise and Dust**

During construction, adjacent communities would experience a temporary increase in noise from heavy equipment and fugitive dust from construction associated with the proposed action.

**4. Right-of-Way Requirements**

Alternatives 1 and 2 would not require any right-of-way acquisition. Access improvements to the MD 202 and MD 214 interchanges as well as along I-95/I-495, included in Alternative 3, do not require any right-of-way acquisition. The provision of ramps between Arena Drive and I-95/I-495, as proposed in Alternative 3, require a total of 11.6 acres of right-of-way acquisition from eight properties for the ultimate construction of a full movement interchange. These proposed acquisitions and their land use are summarized in Table V-8.

**TABLE V-8**

<b>PRELIMINARY PROPERTY TABULATION</b>	
<b>Property Name (Land Use)</b>	<b>Fee (acres)</b>
Hechinger Company, Inglewood Business Community, Lot 11 (Industrial)	0.06
Hechinger Company, Inglewood Business Community, Lot 12 (Industrial)	0.75
Rouse Teacher's Properties Inc., Lot 39 (Industrial)	2.43
Maryland-National Capital Park and Planning Commission (Industrial)	3.94
Cintas Corp., Landover Industrial Center (Industrial)	0.03
Joseph B. A. Gamble (Industrial)	1.04
Landover Properties, Future Brightseat Road Elementary School (Currently Undeveloped)	1.64
Maryland National Bank, Trustee (Industrial)	1.72
<b>Total</b>	<b>11.6</b>

**5. Environmental Justice/Title VI Statement**

**a. Environmental Justice**

The Executive Order (EO) 12898, "Federal Actions to Address Environmental Justice in Minority and Low-Income Populations" was signed on February 11, 1994. The EO requires the assessment of disproportionately high and adverse impacts upon minority and low-income populations resulting from proposed federal actions. The objective is to avoid to the greatest extent practicable the disproportionately high and adverse human health and environmental impacts on minority and low-income populations. The EO is a document that reaffirms the principles of Title VI of the Civil Rights Act of 1964 and related statutes, and emphasizes the incorporation of those provisions with existing planning and environmental processes. Title VI requires federal agencies to ensure that their programs, policies and activities do not have the effect of excluding populations



the benefit of, or subject persons and populations to discrimination because of race, color, or national origin, In addition, the EO adds low-income populations to the analysis when examining the effects of federal programs, policies and activities. In NEPA documents, environmental justice considerations can be addressed concurrently with social/community impact considerations.

Because the guidance for addressing environmental justice is still in development, definite procedures for methods of analysis do not yet exist. The USDOT published on June 29,1995, an environmental justice strategy in the Federal Register (60 FR 33986) to comply with the goals of EO 12898. In anticipation of more specific direction from the USDOT, this environmental justice discussion draws upon the EO, Title VI, NEPA and the USDOT strategy in order to assess environmental justice impacts. This study was analyzed with respect to the following considerations; 1) planning and public participation efforts used to assure a nondiscriminatory planning process under Title VI provisions; 2) the identification of impacts associated with the proposed action and whether they have disproportionately high and adverse effects on low-income and minority populations; and 3) the consideration of mitigation or enhancement measures to avoid or minimize disproportionately high and adverse impacts to low-income and minority populations. In this discussion, the distribution of the actions impacts, both beneficial and adverse were compared to the demographic information defining the location of minority and low-income population groups in the immediate project area. The effects of the proposed improvements were examined with respect to the public participation, community impacts, access and traffic, air quality and noise.

The distribution of the minority population within the project area tracts ranges from a low of 63.6 percent in tract 8035.10 northeast of the I-95/I-495/MD 202 interchange to a high of 98.9 percent in tract 8036.02 southwest of the I-95/I-495/US 50 interchange (see Table V-9). The distribution of population below the poverty level for each census tract ranges from a low of 0.7 percent in tract 8035.10 to a high of 18.2 percent in tract 8034.01 south of the MD 202/ MD 704 interchange. See Figure III-1 for the locations of the census tracts in the project area. The percentage of Prince George’s County which falls below the poverty level is 5.66 percent.

Table V-9

MINORITY AND POPULATION BELOW POVERTY LEVEL		
Census Tract	Percent Minority	Percent of Population Below The Poverty Level
8028.05	97.6	3.8
8034.01	97.3	18.2
8034.02	98.2	12.8
8035.07	97.8	14.1
8035.10	63.6	0.7
8035.11	77.5	0.9
8036.01	97.1	5.0
8036.02	98.9	5.9

Source: Maryland-National Capital Park and Planning Commission, 1990 Population Characteristics (Minority groups include: African-Americans, American Indian, Aleut, Eskimo, Asian and Pacific Islander)

An analysis of census data indicates that of the total population in the study area census tracts, 4.9 percent were persons 65 years and older. The largest percentage of the age group 65 years and older (40.9 percent) appears in census tract 8035.11. In 1990, 6.9 percent of the total population in Prince George's County were persons 65 years and older.

**1) Planning and Public Participation Efforts**

There have been numerous opportunities, through workshops, hearings, televised testimony and civic association meetings and briefings, for public input and participation in reviewing the planned area road improvements that comprise both the background network and the proposed improvements associated with Alternative 3. The concept of additional Interstate access at Arena Drive was first presented to the Prince George's County Council on September 15, 1995. A public notice for the hearings associated with the stadium project was distributed through mass mailings and newspaper advertisements, and copies of the transportation study were made available to the public for review. Seven days of televised public hearings for the overall stadium project which included the Arena Drive interchange concept were held between January 18 through January 26, 1996, and two of those days were devoted to presentation and cross-examination of the

transportation and traffic experts. Simultaneously, the Maryland Department of Transportation presented the proposed road improvements to the Metropolitan Washington Council of Governments as a proposed amendment to the Fiscal Year 1996 Transportation Improvement Program (TIP). Public notice for the proposed amendments to the TIP was distributed and a 30-day public comment period was provided. An informational openhouse and public hearing will be held to discuss the proposed modifications to the existing MD 202 and MD 214 interchanges and the new interchange ramps at Arena Drive and I-95/I-495 in June and July, 1996.

Amendments to the Master Plans for the Largo-Lottsford and Landover and vicinity planning areas were adopted on May 30, 1996 to refine the local street improvements to accommodate improved local access and to allow interchange ramps to connect Arena Drive to I-95/I-495. The Arena Drive improvements were presented for comment at a Master Plan Amendment Public Hearing on May 2, 1996. Approximately 1700 area households received direct mailings announcing the hearing. Of the 50 people in attendance, two area civic groups (Largo Civic Association and Lake Arbor Civic Association) were represented, and spokespersons for these groups supported the proposed improvements. A total of four persons opposed the interchange which included a resident of Largo, a representative of the Prince George's County Civic Federation and two representatives of the Towns of Kettering Homeowners Association.

Plans associated with the master plan amendment process, showing the proposed I-95/I-495 interchange improvements and the new interchange at Arena Drive, were made available to the public for review prior to evidentiary hearings for the approved stadium in January and February of 1996, at the Glenarden Public Library and at the Maryland-National Capital Park and Planning Commission and Prince George's County District Council offices in Upper Marlboro.

Following the distribution of this Environmental Assessment there will be an Interstate Access Point Approval public hearing on July 11, 1996, to provide additional opportunities for all of the citizens in the study area to provide input on the study. Copies of the Environmental Assessment are being made available for public review prior to the public hearing.

## **2) Identification of Impacts on Low Income and Minority Populations**

### **Residential and Commercial Displacements**

No residential property is required for the I-95/I-495 roadway and interchange improvements in this study.

The project area includes some residential census tracts where per capita income is below the 1990 Metropolitan Statistical Area (MSA) average of \$21,416. These tracts include tracts 8034.01, 8034.02 (south of tract 8034.01) and 8035.07 located southwest of the I-95/I-495/MD 202 interchange. Alternative 1 does not consider any special provisions to alter the present impacts in these tracts while Alternative 2 would create more traffic congestion on Summerfield Boulevard and Brightseat Road during the ingress and egress of stadium events.

Efforts have been made to minimize traffic impacts to the homes in these tracts and on local residential neighborhoods in Alternative 3. These provisions include the designation of primary access to the stadium by means of the proposed I-95/I-495/Arena Drive interchange, as opposed to I-95/I-495/MD 202/Brightseat Road. In addition, coordination with the Public Safety Chief of Prince George's County is ongoing to develop a plan for the stationing of traffic control officers during stadium event ingress and egress to keep stadium traffic out of residential areas while ensuring residents breaks in the traffic to access their local roads. Other discussions concerning parking arrangements include: on-site parking passes to direct stadium patrons to specific parking lots on-site to minimize travel to and from the stadium, a residential permit parking program to monitor parking in the neighborhoods and commercial parking controls to ensure that stadium spectators do not park in nearby commercial parking lots. No commercial displacements are anticipated with the proposed alternatives.

### **Traffic Impacts**

As discussed under the Local Traffic Operations subheading, the Alternative 2 pre-game traffic plan would require the diversion of some of the Alternative 1 local traffic movements. In addition, Alternative 2 would result in approximately 10 minutes more of congestion in the areas of the stadium during event egress than Alternative 3. Both Alternative 2 and Alternative 3 would require local access to Capital View Terrace, Hill Oaks Road and Sheriff Road to be monitored

during stadium event ingress, yet traffic volumes on Summerfield Boulevard and Brightseat Road north of MD 214 would be decreased with Alternative 3 versus Alternative 2 during stadium event ingress and egress.

The roadway and transportation improvements in Alternative 3 have been designed to minimize impacts on communities, including low-income and minority populations. These communities exist mainly to the north and west of the stadium site. The primary access routes, including the supplemental Interstate access at Arena Drive in Alternative 3, have been designed to occur south and east of the site, in order to minimize traffic impacts to these neighborhoods. Other traffic plan components include prohibiting stadium traffic on Capital View Terrace and limiting access to Hill Oaks Road and Sheriff Road west of Brightseat Road to use by buses, emergency vehicles and local residential traffic not traveling to the stadium. These traffic plans have been developed to avoid adverse increases in traffic within the existing residential roadway segments in the project area.

**Air Impacts**

A detailed analysis of the air quality impacts resulting from interchange improvements is provided in section V.G. Carbon monoxide concentrations at all receptors in the study area are below the State and National Ambient Air Quality Standards (S/NAAQS).

**Noise Impacts**

There are no anticipated noise impacts to low-income and minority groups which will be disproportionately high or adverse. A detailed summary of noise findings is discussed in Section V.F.

**3) Mitigation or Enhancement Measures**

In order to minimize traffic impacts to neighborhoods, traffic plan improvements have been developed in Alternatives 2 and 3 to include prohibition of access to the stadium site via Capital View Terrace during stadium events, and the provision that access to Hill Oaks Road and Sheriff Road west of Brightseat Road shall be limited to use by buses, emergency vehicles and local residential traffic not traveling to the stadium.

Although the alternatives do not result in high or adverse impacts, the owner of the stadium has committed to the following measures as a result of the stadium project:

- Providing a wall or fence to provide visual screening wherever existing residential development of any kind is located in close proximity to the western and southern property lines,
- Afforesting or reforesting all areas not occupied by existing woodlands in the buffer adjacent to the western property line,
- Planting evergreen and shade trees or providing a sight-tight fence as allowed by WSSC to provide a visual screen in the buffer adjacent to the southern property line.

**b. Title VI Statement**

It is the policy of the Maryland State Highway Administration to ensure compliance with the provisions of Title VI of the Civil Rights Act of 1964, and related civil rights laws and regulations which prohibit discrimination on the grounds of race, color, sex, national origin, age, religion, physical or mental handicap in all State Highway Administration program projects. The State Highway Administration will not discriminate in highway planning, highway design, highway construction, the acquisition of right-of-way, or the provision of relocation advisory assistance. This policy has been incorporated into all levels of the highway planning process in order that proper consideration may be given to the social, economic and environmental effects of all highway projects. Alleged discriminatory actions should be addressed to the Office of Equal Opportunity of the Maryland State Highway Administration for investigation.

**6. Effects on Community Facilities and Access**

Since there is no right-of-way required for improvements to I-95/I-495 at the MD 202 interchange, the H.P. Johnson Park, located north of Landover Mall, would not be affected by the proposed alternatives.

The proposed alternatives would not impede pedestrian mobility. Alternative 3 would not impact the new sidewalks being implemented as part of the Arena Drive construction, maintaining continuity with the existing sidewalk system through the project area.

127

Alternatives 1 and 2 do not address the existing or projected traffic congestion, safety problems or existing access in the project area. As a result, peak congestion periods would lengthen and access to community services would worsen over time. Alternative 2 may worsen emergency response time as capacity at the interchanges during Sunday events as capacity would be exceeded on a more frequent basis versus Alternative 3.

Alternative 3 would improve emergency vehicle response times through the interchange areas, both on the interstate and the secondary roads. Alternatives 2 and 3 also include traffic plans for stadium events which will allow emergency vehicle routes during ingress and egress. During stadium events, access to Hill Oaks Road and Sheriff Road west of Brightseat Road shall be limited to use by buses, emergency vehicles and local residential traffic not traveling to the stadium. The Alternative 2 pre-game traffic plan would require the diversion of some of the Alternative 1 local traffic movements onto Brightseat Road north of MD 202 through the community of Glenarden (255 vehicles) and onto Addison Road south of MD 704 through the community of Seat Pleasant (265 vehicles). Other vehicle diversions with this traffic plan will impact access to communities along MD 704 between US 50 and Addison Road; Hill Road between MD 704 and MD 214; Walker Mill Drive between MD 214 and Ritchie Road; MD 214 between Addison Road and MD 202; Ardwick Ardmore Road between Brightseat Road and US 50; and Sheriff Road between Brightseat Road and MD 704. In addition, Alternative 2 would result in approximately 10 minutes more of congestion in the areas of the stadium during event egress than Alternative 3. These actions may result in more effect on community facilities with Alternative 2 than Alternative 3 during stadium events.

The impacts on the means of access to existing services and facilities from Alternative 3 would be minor. Alternative 3 would improve the capacity of connections between the various communities and I-95/I-495 via an additional access point at Arena Drive during stadium events. The proposed improvements to I-95/I-495 and the interchanges with MD 202 and MD 214 would also improve traffic operations through the increased ramp capacity and lengthened merge areas with I-95/I-495. The only disruptions to access would be during construction.

**B. Economic**

**1. Effects on Local Business**

Alternatives 1 and 2 would not require the relocation or displacement of any business in the study area. Alternative 1 may result in increased congestion, traffic conflicts, and increased travel time for commuter access to and from local businesses if planned development occurs without transportation improvements. This may create a shift in travel demand to other roadways that could lure customers and tenants away from area facilities.

Transportation improvements which provide better accessibility to developable land and the roadway network are an amenity to land owners and business. Land that is more accessible to a well connected roadway network is of greater value than land that has poor access to the roadway network.

Alternative 3 would not require the displacement of any business in the study area. Other benefits associated with Alternative 3 would be the improved levels of service for the individual interchange movements and corresponding decreases in delays. Improvements in capacity and levels of service at the I-95/I-495/ MD 202 interchange with Alternative 3 would be beneficial to Landover Mall, as many of its Sunday patrons are likely to use this interchange.

No commercial relocations are anticipated with any of the alternatives.

All right-of-way required for Alternative 3 would be in vacant areas and would not impact any buildings or access roadways.

**2. Effects on Regional Business and Economy**

The I-95/I-495 corridor is a vital, growing extension of the Washington Metropolitan regional economy and a major link in the north-south roadway transportation network for the mid-Atlantic region. This Interstate continues to be a focal point of major commercial development for the State and County, and is a major route for tourist and recreational traffic on Sundays.

Alternative 1 and Alternative 2 would not adequately address the growing needs of the County, and, in particular, the study area. These alternatives are anticipated to have a negative



128

impact on the County's business, as additional traffic congestion and reduced safety may deter additional residential and business development in the study area, and/or may encourage additional suburban sprawl. Alternatives 1 and 2 would have only a minor impact on overall regional business activity, for businesses attracted to the region will select a location where access is or will be available.

Alternative 3 would provide the greatest increase in traffic capacity, provide the most relief to traffic congestion and the most improvement to mainline levels of service with the planned development in place. Alternative 3 would help to address the growth needs of the County and have a positive effect on regional business activities. This alternative would alleviate congestion at the existing interchanges, thereby reducing travel time to and from the study area employment centers, and provide increased traffic capacity to accommodate planned commercial growth, and the attraction of that planned growth which would translate to increased employment opportunities in the area.

As Alternative 2 and Alternative 3 include the stadium, some of the economic benefits of these alternatives over Alternative 1 can be identified with the operation of the stadium. A study by Arthur Andersen, L.L.P. shows that the stadium will bring the State and the County a 24.9% return on its onsite and off-site infrastructure investment. Since the stadium would be built by private funds, no taxpayer money would be used for its construction, yet 1,879 jobs, at an average of \$29,500 annual personal income will be created during the two-year construction period. The team has also committed that Prince George's County residents will be given at least 30% of the stadium operations jobs and Minority Business Enterprises will be provided not less than 25% of the aggregate expenditures in stadium operations.

### **3. Effects on The Tax Base**

Alternative 1 and Alternative 2 will only worsen existing traffic conditions and may have a detrimental effect on continued development in the study area and its vicinity.

Improvements to I-95/I-495 and its interchanges with MD 202, Arena Drive and MD 214, as presented under Alternative 3, will assist in the support of continued, planned development in the study area. Increased traffic capacity and safety will assist in accommodating growth and relieving congestion problems. The expansion of residential and commercial areas has a positive effect on

the County's tax base and revenues since, typically, developed land is more valuable than vacant land, and developable parcels in an area served by an adequate transportation network are more highly valued and tend to attract potential developers, which would lead to new sources of tax revenues.

It is anticipated that additional employment opportunities would arise as a result of the increased accessibility that would be provided by the proposed roadway improvements.

Since there are no residential or business displacements associated with Alternative 3, any reduction in the County's tax base or revenues would only be in the form of vacant land acquisition.

**C. Land Use**

Specific recommendations to the transportation network in the study area as included Alternative 3 are stated in the Master Plans for Landover (Planning Area 72) and Largo (Planning Area 73). Both Master Plans recommend the reconstruction of the I-95/I-495/MD 202 interchange and the reconstruction of the I-95/I-495/ MD 214 interchange. The Largo Master Plan recommends the widening of I-95/I-495 to 10 lanes and the widening of Arena Drive to a 4 to 6 lane section from I-95/I-495 to Campus Way North. In addition, Arena Drive would cross I-95/I-495 and connect Brightseat Road to the USAir Arena. On May 30, 1996, Prince George's County approved an amendment to these plans specifically to include an interchange at I-95/I-495 and Arena Drive. Since only Alternative 3 includes an interchange at this location, this action makes Alternative 3 consistent with the master plans, and Alternatives 1 and 2 inconsistent with these plans.

Development densities planned in the County and study area are based on increased traffic capacity. Alternative 3, therefore, would not alter the ultimate intensity pattern of land use development and redevelopment.

**D. Cultural Resources**

**1. Historical Structures**

Only one site in the project's Area of Potential Effects is considered eligible for the National Register of Historic Places. No property is required from this site, Waring's Grove, with any of the alternatives. The State Historic Preservation Officer (SHPO) has concurred that the proposed

131

project will have no effect on Waring's Grove. See the letter in the Comment and Coordination Section from the SHPO, dated June 6, 1996.

## **2. Archaeological Sites**

Based on archaeological studies, no archaeological sites eligible for the National Register are present in the study area. The SHPO has concurred with our determination that there are no sites eligible for the National Register of Historic Places in the Area of Potential Effects and that further investigations are not warranted. See the letter in the Comment and Coordination Section from the SHPO, dated June 6, 1996.

### **E. Natural Environment**

#### **1. Effects on Geology, Topography, Soils**

##### **a. Geology and Topography**

None of the alternatives would substantially change the overall existing topographic conditions along I-95/I-495, MD 202, MD 214 or Arena Drive. The grades of the roadway widening and proposed ramps in Alternative 3 would follow the existing grades closely. The proposed Arena Drive interchange with I-95/I-495 would involve cutting and filling and proposed grades would not exceed 6.0 percent. This would create a new physical and visual overview of the existing landscape. However, the new landscape would not block the view of any scenic or important features or create undesirable drainage patterns. No impacts to the underlying geological structures will occur as a result of the proposed action. Within the construction of the interchange ramps, the maximum cut would be approximately 15 feet, and the maximum fill would be 37 feet. The final design geotechnical investigation for the selected alternative will determine the properties of the materials to be excavated during construction and to establish their weathering characteristics. The actual cut and fill slope configurations required to provide a stable roadway with minimal damage to the environment will be determined at that time.

##### **b. Soils**

Any construction associated with the implementation of any of the alternatives would result in some disturbance of soils, notably erosion and sedimentation during construction. Many of the soil series found in the project area are listed as susceptible to erosion. The removal of vegetation

from the construction area would expose soils and increase the probability of runoff. Removal of vegetation also would reduce the beneficial effects of the vegetation's ability to intercept sediment loaded runoff.

Based on topographic mapping and field reconnaissance, slopes exceeding 15 percent were identified within the project area.

The potential for soil erosion and sedimentation would become greater as soils are disturbed. The highest potential for sedimentation to receiving waters would occur where these soils are in close proximity to surface waters. Therefore, it is important that soil erosion and sedimentation be minimized as much as possible. Measures to mitigate these effects include structural, vegetative and operational methods. These methods will be developed as part of a Soil Erosion and Sediment Control Plan for the project, which will be prepared for Alternative 3 in accordance with the Maryland Standards and Specifications for Soil Erosion and Sediment Control. Long-term impacts to the soils in the project area would be negligible. Introduction and establishment of grasses and herbaceous vegetation would stabilize the soils as soon as possible after construction is completed.

Specific control measures cannot now be identified, but may include:

- Staging of construction activities to permanently stabilize ditches at the tops of cuts and at the bottom of fill slopes prior to excavation and formation of embankments;
- Seeding, sodding, or otherwise stabilizing slopes as soon as practicable to minimize the area exposed at any time;
- Appropriate placement and maintenance of sediment traps, temporary slope drains and other control measures;
- Placement of diversion dikes, energy dissipators, mulches and netting on slopes too steep to support vegetation.

**c. Prime Farmland Soils**

Unique farmlands and farmlands of Statewide or Local Importance are not affected by the proposed alternatives.

**2. Water Resources / Wetlands**

There would be no impacts to water resources as a result of Alternatives 1 and 2.

Any impacts to water resources during construction of Alternative 3 would be minimized using standard mitigation measures during construction and operation:

- Watershed effects would be minimized through a limited construction schedule and adherence to storm management and sediment and erosion control measures.
- Effects to the water quality in the study area would be minimized by the use of Best Management Practices (BMP's).

**a. Surface Water**

Alternative 3 would require the modification two major culverts under I-95/I-495 as described below. These culverts would be extended no farther than the limits of the proposed slopes.

The existing 42 inch reinforced concrete pipe approximately 900 feet north of the Arena Drive bridge over I-95/I-495, would be extended 20 feet to the west of southbound I-95/I-495.

The existing 10'-8" x 6'-11" structural plate pipe arch 600 feet south of the Arena Drive bridge over I-95/I-495, would be extended approximately 20 feet to the west of southbound I-95/I-495.

Culvert modifications would be in accordance with practices (e.g., check dams, culvert invert depressions) that would maintain the aquatic habitat.

Alternative 3 would also require the relocation of 1,010 linear feet of an unnamed tributary to Southwest Branch, partially by means of extensions to the culvert constructed as part of the Arena

Drive connection over I-95/I-495. Immediately east of I-95/I-495, north and south of the Arena Drive bridge, the construction of Ramps C and D will require the 230 foot and 310 feet extensions, respectively, of the double cell 15 foot diameter and 13 foot diameter structural plate pipe constructed with the Arena Drive bridge.

The unnamed tributary to Southwest Branch would also be impacted, under Alternative 3, by a 570 foot relocation under and along ramp C, 650 feet south of Arena Drive. This ramp requires a 60 foot long, double 12' x 8' box culvert, or equivalent sized culvert agreed upon in final design, to convey the tributary under the ramp.

All stream waters in the study area are designated Use 1 by the Maryland Department of the Environment. Therefore, in-stream construction, with Alternative 3, will be prohibited from March 1st to June 15th, inclusive. A Waterway Construction Permit is being obtained from the Maryland Department of the Environment, Water Management Administration.

Any increase in runoff of pollutants such as soils, nutrients, organics, heavy metals, lead, petroleum, and other highway salts resulting from the increase in traffic would be addressed with quality control stormwater management. The increase in impervious surface area resulting from the proposed improvements would produce a proportionate increase in the amount of roadway runoff carrying vehicle generated pollutants (i.e., oil, coolants, brake lining, rubber, etc.). Infiltration of stormwater runoff has been determined to be feasible, with Alternative 3, as a means to provide quality control by filtering the runoff through the soil.

Water quality indices (e.g., parameters that quantify sediment, nutrients, bacteria, oxygen demand, etc.) for all streams affected should remain in the permissible range. The use of Best Management Practices (BMP's) to provide sound stormwater management will be implemented where any disturbance could affect water quality in the corridor.

Stormwater runoff for the project will be managed in accordance with the State of Maryland Department of the Environment's "Stormwater Management Guidelines for State and Federal Projects". These regulations will require stormwater management practices in the following order of preference:

- On-site infiltration;

125

- Flow attenuation by open vegetated swales and natural depressions;
- Stormwater retention structures; and
- Stormwater detention structures.

It has been demonstrated that these measures can substantially reduce pollutant loads and control runoff. Stormwater management methods and areas have been identified and are described as follows:.

Stormwater management will not be required with Alternatives 1 and 2.

With Alternative 3, quantity control stormwater management will be required at one of six locations where drainage leaves existing right-of-way. Stormwater management quantity control waivers will be obtained for the remaining five locations, where the increase in peak discharges for the 2-year storm event is less than a 10 percent increase from existing to proposed conditions. Quality control stormwater management will be required with Alternative 3, as the additional impervious area will increase by approximately 5.2 acres. Stormwater management will be provided for the Alternative 3 improvements through the use of one extended detention marsh pond at the USAir Arena parking lot, an infiltration trench east of Ramp B, and by retrofitting the existing wet pond located west of I-95/I-495 and east of Brightseat Road.

The construction of Ramp 'B' in the southwest quadrant of the proposed I-95/I-495 interchange at Arena Drive would require the placement of fill within this existing wet pond, west of I-95/I-495, and the elimination of the 100-year emergency spillway. A clay cut-off and core trench would be implemented with ramp construction to ensure ramp embankment stability. The riser structure for the pond would be replaced to provide 100-year overflow capacity. This pond, constructed to manage storm drainage from the commercial developments along Brightseat Road, was designed with excess capacity, and is sufficiently sized, even with slightly reduced storage volume as a result of Ramp 'B', to provide quantity and quality control management for the proposed improvements.

The final design for the proposed improvements includes plans for grading, sediment and erosion control, and stormwater management, in accordance with State and Federal laws and

regulations. Final plans will be submitted for review and approval by the Maryland Department of the Environment, Water Management Administration. Sediment and erosion control measures are being designed and will be implemented in accordance with the "1994 Maryland Standards and Specifications for Soil Erosion and Sediment Control". Typical temporary sediment control measures which are installed in a project of this type include straw bale structures, slope silt fence, sediment traps, rip-rap linings, fiberglass erosion stops, dikes and swales, soil stabilization matting and stabilized construction entrances. The area disturbed by the construction would be held to a minimum and revegetated promptly after grading to minimize the potential for erosion and sedimentation.

**b. Groundwater Effects**

Alternatives 1 and 2 would not have any effect on groundwater.

It is not anticipated that the proposed interchange improvements associated with Alternative 3 would have any adverse affect on groundwater in the study area. Efforts to provide protection for groundwater in the vicinity of proposed highway improvements would include the following:

- Stormwater Best Management Practices
- Final design and construction effects would comply with DNR's WRA standards and specifications

**c. Floodplains**

Alternatives 1 and 2 would not impact any 100-year floodplains.

Alternative 3 would impact approximately 0.10 acre of 100-year floodplain as designated Federal Emergency Management Agency (FEMA) mapping. This impact would occur along Ramp H, in the southwest quadrant of the I-95/I-495 interchange at MD 214. The State Highway Administration is preparing a detailed hydrologic and hydraulic study for Alternative 3 to identify the existing 100-year storm discharge and water surface elevations, and will submit the results of these studies to the Maryland Department of the Environment. Stormwater management will be



provided and all hydraulic structures will accommodate the 100-year flood without causing substantial impact.

The use of standard hydraulic design techniques for all waterway openings which limit upstream flood level increases and approximate existing downstream flow rates are being utilized.

**d. Wetlands**

In accordance with Executive Order 11990, efforts were made to avoid or minimize harm to wetlands in the project corridor. Alternatives 1 and 2 would not impact any wetlands or Waters of the U.S.

The construction of interchange ramps at Arena Drive with Alternative 3 would not impact any wetlands. Impacts to Waters of the U.S. resulting from culvert extensions or fill slopes required for the proposed improvements total 1,010 linear feet, all of which involve US-2 which, as described in Section III.E.2, is an unnamed tributary to Southwest Branch east of I-95/I-495 near the proposed Arena Drive bridge. Given the configuration of US-2 and the adjacent US-4, no shift in the locations of the east side Alternative 3 ramps would result in avoidance of Waters of the U.S. impacts. An eastern shift in the location of the proposed ramps by approximately 100 feet would avoid all but 200 feet of US-2 but would add approximately 200 feet of US-4 impacts. This shift would increase the cost of the ramps by approximately \$1.2 million, all in right-of-way. This shift is not considered feasible because of cost.

Mitigation strategies have been investigated to determine the feasibility of mitigation within State Highway Administration's right-of-way. Two sites have been identified and reviewed by the U.S. Army Corps of Engineers and the Maryland Department of the Environment. Site 1 is located along I-95/I-495 in the southeast quadrant of the proposed Arena Drive interchange and is an unnamed tributary to Southwest Branch. The mitigation strategy includes stream enhancement in the form of meanders and stream bank plantings.

Mitigation site 2 is located approximately 500 feet east of I-95/I-495 in the southeast quadrant of the proposed Arena Drive interchange and is an intermittent riverine system consisting of a narrow stream channel which is riprap covered and vegetated in its upper reaches. This stream is ponded in its mid-section and confined to its channel in its lower reach as it joins the unnamed

tributary to Southwest Branch. The proposed mitigation strategy at this site consists of converting the low quality pond into an emergent planted shallow marsh.

**3. Hazardous Materials/Waste Sites**

A field survey and land use examination of the project area did not identify any land use likely to have potential for hazardous waste contamination. The U.S. Environmental Protection Agency (EPA) listing of Superfund sites (CERCLIS) did not identify any sites within the project area.

At one point in the planning of the stadium on the Wilson Farm site, a local resident raised concerns over the contents of a Class III landfill area on the site. In response, at the request of the Environmental Protection Agency, the Maryland Department of the Environment (MDE), Waste Management Administration conducted a Brownfield Assessment, which included a site visit on February 27, 1996 to assess the historical landfill activities at the Wilson Farm site. Based upon the site visit, its review of geotechnical reports submitted to the District Council as part of the Redskins Stadium Specific Design Plan, the Maryland-National Capital Park and Planning Commission 1995 Phase I Assessment, and its interviews with Prince George's County officials and others knowledgeable about historical landfill activities, MDE concluded that further investigation of the site is not warranted. Since the area investigated is located entirely within the Wilson Farm site, there would be no impact from the alternatives considered.

**4. Terrestrial Resources**

Adverse effects on wildlife attributable to Alternative 3 would be minimal since the proposed ramps and interchange improvements closely follow the alignment of the existing roadway. The most substantial effect of actions on wildlife along the corridor with any of the alternatives would be in the removal and alteration of vegetation. The destruction of naturally existing vegetation -- hedgerows, forest and fields -- along the highway affects erosion and sediment control and alters the habitat for birds, mammals and insects. The loss of habitat is typically accompanied by a proportional loss in wildlife populations inhabiting these areas based upon its holding capacity.

Reduction in populations and diversity of species due to construction actions would be, in large part, proportional to the area affected by the alternative, factoring in the condition that so much

of the study area is already developed. The disturbed habitat would not be densely populated due to its proximity to the existing highway.

The total size of woodland areas affected by Alternative 3 is 4.5 hectares (11.3 acres). None would be affected by Alternatives 1 and 2.

The State Forest Conservation Act of 1991 includes Section 2 (the "Reforestation Act") which requires the minimization of cutting or clearing trees, replacement of wooded areas affected and/or contributions to a Reforestation Fund for highway construction projects. The proposed alternatives would comply with the Forest Conservation Act.

**5. Threatened and Endangered Species**

The Maryland Department of Natural Resources, Fish, Heritage and Wildlife Administration has no records of the presence of Federal or State rare, threatened or endangered plants or animals within the project area. According to the US Department of the Interior Fish and Wildlife Service, there are no Federally listed or proposed for listing endangered or threatened species in the project area. Therefore, no threatened or endangered species would be affected by the proposed alternatives.

**F. Noise Impacts**

**1. Noise Prediction Methodology**

**a. Federal Highway Administration Standards/SHA Guidelines**

The effects of noise are judged in accordance with the Federal Highway Administration as established by 23 Code of Federal Regulations (CFR) part 772. The FHWA criteria shown in Table V-10 are based on specific land uses and are used in determining the need for studying noise attenuation. All locations within the study area are of land use category B, which has an exterior design noise level of 67 dBA and Category E with an interior design level of 52 dBA.

For this analysis, the I-95/I-495/Arena Drive improvements are considered a Type I project because the proposed construction would create new interchange ramps between I-95/I-495 and Arena Drive. Alternatives 1 and 2 would not require any Federal action.

The predicted noise levels are presented for the proposed I-95/I-495 interchange ramps at Arena Drive and the improvements to I-95/I-495 between MD 202 and MD 214. Noise impacts were not analyzed for the MD 202 and MD 214 interchange improvements because there are no sensitive receptors near these improvements and the improvements do not warrant Type I considerations.

In this assessment, noise levels are presented in terms of the A-weighted equivalent sound level, abbreviated here as  $L_{eq}$ .  $L_{eq}$  is a single number representation of the actual fluctuating sound level that accounts for all sound energy during a given period of time. The units of  $L_{eq}$  are A-weighted decibels or dBA. The A-weighting means that the sound level is measured in a method that approximates the response of the human ear with de-emphasis of the low and very high frequencies and emphasis on the mid-frequency range. In order to give a sense of perspective to the noise levels discussed, a quiet rural night would register about 25 dBA, a quiet suburban night about 60 dBA, a noisy day about 80 dBA, a gas mower at 30 m (100 feet) about 70 dBA and a diesel truck at 15 m (50 feet) about 85 dBA. Under typical field conditions, noise level changes of 2-3 dBA are barely perceptible, whereas a change of 5 dBA is readily noticeable. A 10 dBA increase in noise level is judged by most people as a doubling of sound loudness (This information is presented in the Fundamentals and Abatement of Highway Traffic Noise by Bolt, Beranek and Newman, Inc. for the FHWA, 1980).

**Table V-10**  
**NOISE ABATEMENT CRITERIA**  
**(SPECIFIED IN 23 CFR 772)**

<b><u>LAND USE CATEGORY</u></b>	<b><u>DESIGN NOISE LEVEL - <math>L_{eq}</math></u></b>	<b><u>DESCRIPTION OF LAND USE CATEGORY</u></b>
A	57 dBA (exterior)	Tracts of land in which serenity and quiet are of extraordinary significance and preservation of those qualities is essential if the area is to continue its intended purpose. Such areas could include amphitheaters, particular parks, or open spaces dedicated or recognized by appropriate local officials for activities requiring special qualities of serenity and quiet.
B	67 dBA	Residences, motels, hotels, public meeting

	(exterior)	rooms, schools, churches, libraries, hospitals, picnic areas, playgrounds, active sports areas, and parks.
C	72 dBA (exterior)	Developed lands, properties or activities not included in categories A or B above.
D	None Prescribed	Land which is undeveloped on the date of public knowledge of the project, and on which no known future development is planned.
E	52 dBA (interior)	Residences, motels, hotels, public rooms, schools, churches, libraries, hospitals, and auditoriums.

According to the procedures described in 23 CFR, Part 772, noise impacts occur when predicted noise levels for the design year approach or exceed the noise abatement criterion for a particular land use category, or when predicted noise levels are substantially higher than existing ambient noise levels. In the Maryland State Highway Administration’s Noise Abatement Policy, the SHA defines “approach” as 66 dBA or above for land use category B, and uses a 10 dBA increase to define a substantial increase. According to this policy, once an impact has been identified, the following factors are evaluated to determine whether mitigation is feasible and reasonable:

- Date of the development in relationship to the date of original highway construction.
- Whether an effective and feasible method is available to reduce the noise. Feasible is defined as a minimum 3 dBA reduction in noise levels.
- Whether No-Build vs. Build noise levels increase by 3 dBA or more, considering the cumulative effects of highway improvements over time.
- Whether the cost of mitigation is cost-effective for those receptors that are impacted - \$50,000 per impacted and protected residence.
- Whether the noise abatement is acceptable to the affected property owners.

An effective barrier should provide a 7-10 dBA reduction in noise levels as a primary design goal for "first row" residences. However, because there is no difference in the number of impacted versus impacted and benefitted noise receptors that will receive a 3 dBA or greater reduction, the number of impacted noise receptors is considered when determining the cost reasonableness of a barrier.

Cost reasonableness is determined by dividing the total number of impacted receptors in a noise sensitive area that will receive a 3 dBA or greater reduction of noise levels, into the total cost of noise mitigation. A cost of \$16.50 per square foot is assumed to estimate barrier cost. This cost figure is based upon current costs of panels, footings, and installation. For this analysis, hospitals and schools count as 10 residences and churches count as five residences.

#### **b. Noise Prediction Methodology Using FHWA Model**

The method used to model noise levels was developed by the Federal Highway Administration of the U.S. Department of Transportation. This method utilizes an experimentally and statistically determined reference sound level for each of the three classes of vehicles (autos, medium duty trucks, and heavy duty trucks) and applies a series of adjustments to each reference level to arrive at the predicted sound level. The adjustments include; 1) traffic flow corrections, taking into account the number of vehicles and the average vehicle speed; 2) distance adjustments comparing a reference and actual distance between receiver and roadway; and 3) adjustments for ground softness and for various types of physical barriers that would reduce noise transmission from source (roadway) to receiver.

Noise level modeling for this analysis was performed with the computer adaptation of the FHWA model, STAMINA 2.0/OPTIMA. Traffic counts were taken during the 15-minute ambient measurements and were used for calibration.

Traffic information for this analysis was obtained through the Maryland State Highway Administration, Project Planning Division. The combination of traffic volume, truck percentages and travel speeds which produced the worst hourly noise levels was used in this study. For this analysis, this worse case condition was the Design Hour Volume (DHV).

143

## 2. Noise Prediction Results

Noise sensitive areas (see Figures III-6 and IV-4) identified with Alternative 3 and the ambient noise levels measured at these locations are shown in Table V-11. All projected noise levels are exterior maximum  $L_{eq}$  noise levels. At NSAs impacted by traffic on I-95/I-495, mitigation was considered by analyzing noise barriers. Results of noise mitigation barrier analysis, including feasibility and cost-effectiveness, are shown in Table V-12.

Each noise sensitive area and will be reevaluated following development of final engineering to verify that effective and reasonable solutions can be implemented. During final engineering, the specific horizontal and vertical location of the proposed highway will be established, and if required detailed mitigation alternates will be examined at each location. The cost of mitigation for each noise sensitive area will be determined based on these detailed studies.

### Noise Sensitive Area 1

NSA 1 consists of receptors R-1a and R-1b, which represent groups of single family attached residences adjacent to I-95/I-495.

Alternative 1: The condition consists of four through lanes in the southbound direction and four through lanes (plus one acceleration/deceleration lane) in the northbound direction. The Arena Drive extension would be built in this alternative, but there would be no interchange at I-95/I-495. 2020 noise levels for the weekday and Sunday conditions at the two receptors are 77 and 76 dBA, respectively.

Alternative 2: The 2020 weekday and Sunday noise levels are identical to Alternative 1.

Alternative 3: The 2020 weekday and Sunday noise levels are identical to Alternative 1.

The original highway in this location carried three lanes in each direction. All residences were built prior to the addition of a fourth lane in each direction. The 2020 build noise levels are only 1 dBA above the worst case noise levels for the baseline condition (original 6-lane highway, existing at time noise receptors were constructed).

For mitigation information, refer below to Noise Sensitive Area 2.

**Noise Sensitive Area 2**

NSA 2 consists of receptors R-2a, R-2b and R-2c, which represent groups of single family attached residences adjacent to I-95/I-495.

Alternative 1: This condition is described under NSA 1. 2020 noise levels for the weekday and Sunday conditions at the three receptors are 73, 76 and 71 dBA, respectively.

Alternative 2: The 2020 weekday and Sunday noise levels are identical to Alternative 1.

Alternative 3: The 2020 weekday noise levels are identical to Alternative 1. For R-2b, the 2020 Sunday level is 75 dBA. For R-2a and R-2c, the levels remain the same.

The baseline condition is the same as described in NSA 1. The 2020 noise levels for Alternatives 1, 2 and 3 are a maximum of 2 dBA above the baseline condition. All residences were built prior to the addition of a fourth lane in each direction, but subsequent to the original I-95/I-495 construction.

Due to the proximity of the residences to the roadway, berms would not be practical and were not analyzed at this location. A barrier 1500 feet long and a height varying from 8.0 feet to 24.0 feet, constructed at a cost of \$416,000, would reduce noise levels by 10 dBA at both receptors. Including residences benefitted in NSA 1, there are 86 residences impacted and benefitted at 3 dBA. The cost per residence for those impacted and benefitted is \$4,837. However, the maximum noise level difference with Alternative 3 as compared to Alternatives 1 and 2 and baseline noise levels is 1 dBA at both NSA 1 and 2. Therefore, noise mitigation is not considered reasonable.

**Noise Sensitive Area 3**

(Note: For NSAs 3, 4, 5 and 6, future noise levels were examined to determine how the change in traffic on secondary roads resulting from the proposed interchange would impact the noise environment. Because these NSAs are near county funded improvements, no barrier analysis is required under federal guidelines. Barriers will be considered where necessary in the study of state and county funded improvements.)



145

NSA 3 consists of six receptors: R-3, R-4, R-5, R-6, R-7 and R-8. This NSA represents the school and residences that are adjacent to Brightseat Road between Arena Drive and Central Avenue. One of these receptors is identified as a church and another as a business.

Alternative 1: This condition is the same as described for NSA 1. Brightseat Road is assumed to be the same two lane road as it is today. The 2020 noise levels on a weekday are 64, 65, 74, 75, 67 and 70 dBA respectively. On a Sunday the levels are 60, 63, 72, 72, 66 and 67 dBA respectively.

Alternative 2: The 2020 noise levels remain the same as Alternative 1 for a weekday. For a Sunday the levels increase to 62, 64, 74, 75, 66 and 68 dBA respectively.

Alternative 3: For a 2020 weekday, the levels remain the same as Alternatives 1 and 2 for a weekday at R-4, R-5, and R-7. For R-3 and R-8, the level increases to 65 and 71 dBA, respectively. For R-6 the level decreases to 74 dBA. The 2020 Sunday noise level are the same as Alternative 2 for all receptors except R-6. The level for R-6 decreases to 74 dBA.

#### **Noise Sensitive Area 4**

NSA 4 contains two receptors, R-12 and R-14, and covers the northwest part of the Summerfield subdivision near Summerfield Boulevard. This NSA contains a mix of apartments and townhomes.

Alternative 1: This alternative assumes that the state/county funded widening of Summerfield Boulevard to six lanes will be completed. The 2020 noise levels for the receptors on a weekday are 64 and 62 dBA respectively, and 59 and 58 dBA respectively on a Sunday.

Alternative 2: The weekday noise levels are the same as Alternative 1. The Sunday levels increase to 63 and 62 dBA respectively.

Alternative 3: The weekday noise levels are identical to Alternative 1. The Sunday levels decrease from Alternative 2 to 62 and 61 dBA respectively.

Since noise levels at this NSA do not exceed 67 dBA and are not influenced by I-95/I-495, noise mitigation measures were not investigated as part of this project.

**Noise Sensitive Area 5**

NSA 5 contains one receptor, R-13, and represents ten houses on the east portion of East Nalley Road and the southern part of Finch Drive near Summerfield Boulevard.

Alternative 1: This alternative is the same as described for NSA 4. The 2020 noise level is 62 dBA on a weekday and 57 dBA on a Sunday.

Alternative 2: The 2020 noise level is 62 dBA on a weekday and 61 dBA on a Sunday.

Alternative 3: The 2020 noise level is identical to Alternative 2.

Since noise levels at this NSA do not exceed 67 dBA and are not influenced by I-95/I-495, noise mitigation measures were not investigated as part of this project.

**Noise Sensitive Area 6**

NSA 6 contains one receptor, R-15, and represents eight houses on the western part of Dunbar Avenue near the intersection of Summerfield Boulevard and Central Avenue.

Alternative 1: This alternative assumes a six lane Summerfield Boulevard and a six lane Central Avenue. The 2020 weekday noise level is 63 dBA and the Sunday level is 60 dBA.

Alternative 2: The 2020 noise level is 63 dBA on a weekday and 62 dBA on a Sunday.

Alternative 3: The 2020 noise levels are identical to Alternative 2.

Since noise levels at this NSA do not exceed 67 dBA and are not influenced by I-95/I-495, noise mitigation measures were not investigated as part of this project.

**3. Construction Noise**

As with any major construction project, areas around the construction site are likely to experience varied periods and degrees of noise impact. This type of project would probably employ the following pieces of equipment which would likely be sources of construction noise:

- Bulldozers and Earth Movers
- Graders

147

Front End Loaders  
Dump and other Diesel Trucks  
Compressors

Construction activity would usually occur during normal working hours on weekdays. Therefore, noise intrusion from construction activities probably would not occur during critical sleep or outdoor recreation periods.

Maintenance of construction equipment will be regular and thorough to minimize noise emissions because of inefficiently tuned engines, poorly lubricated moving parts, ineffective muffling systems, etc.

Temporary fencing will be considered in residential areas, where feasible, to screen construction activities.

#### **4. Noise Summary**

The proposed improvements with Alternative 3 do not result in a perceptible increase over the no-build conditions as represented by Alternatives 1 and 2 under any conditions (weekday or Sunday) or over the baseline condition (6-lane divided Capital Beltway), which represents the conditions present when receptors were constructed. Noise abatement measures were not found to be reasonable for any of the noise sensitive areas analyzed, and will not be considered further.

**TABLE V-12**  
**DESIGN YEAR 2020**  
**NOISE ABATEMENT ANALYSIS SUMMARY**

NSA	Est. Date Built	Receptor	Weekday Level		Sunday Level			Max. Incr. Resulting from the Proposed Action	Ambient	Max. Incr. Over Amb.	Baseline Noise Level <sup>1</sup>	Max. Incr. Over Baseline	Barrier Analysis <sup>2</sup> Impacted @ 66 dBA	
			Alts. 1&2	Alt. 3	Alt. 1	Alt. 2	Alt. 3							
1	1978	R-1a	77	77	77	77	77	0	74	3	75	2	L = 1,500' HT = 8' - 24' COST = \$416,000 Imp. @ 66 dBA = 120 Residences Imp. & Ben. @ 5 dBA = 41 \$10,146/Res. Imp. & Ben. @ 3 dBA = 86 \$4,837/Res. Benfitted @ 3 dBA = 86 \$4,837/Res.	
		R-1b	76	76	76	76	76	0	75	1	75	1		
2	1978	R-2a	73	73	73	73	73	0	72	1	72	1		
		R-2b	76	76	76	76	75	0	73	3	74	2		
		R-2c	71	71	71	71	71	0	68	3	70	1		
3	Pre-1978	R-3	64	65	60	62	62	1	62	Because the noise at these receptors is from non-federally funded improvements, no barriers were analyzed. Barriers will be analyzed where appropriate in the study of state and county funded road improvements.				
		R-4	65	65	63	64	64	0	N/A <sup>3</sup>					
		R-5	74	74	72	74	74	0	N/A <sup>3</sup>					
		R-6	75	74	72	75	74	0	N/A <sup>3</sup>					
	1978	R-7	67	67	66	66	66	0	N/A <sup>3</sup>					
		R-8	70	71	67	68	68	1	N/A <sup>3</sup>					
4	1995	R-12	64	64	59	63	62	0	51	Because the noise at these receptors is from non-federally funded improvements, no barriers were analyzed. Barriers will be analyzed where appropriate in the study of state and county funded road improvements.				
		R-14	62	62	58	62	61	0	50					
5	1985	R-13	62	62	57	61	61	0	49					
6	1980	R-15	63	63	60	62	62	0	60					

Alternative 1 includes the improvements to Arena Drive, Summerfield Blvd., and Brightseat Road, with no stadium traffic..

Alternative 2 is identical to Alternative 1 except that the stadium is present.

Alternative 3 is identical to Alternative 2 except that the Arena Drive/Capital Beltway interchange is present.

<sup>1</sup> LOS E with three lanes in each direction on the Beltway and one lane in each direction on Brightseat Road were in place when the residences were constructed. Current peak traffic conditions are assumed on Summerfield Blvd.

<sup>2</sup> Barriers were analyzed for 2020 weekday Alternative 3.

<sup>3</sup> These receptors were added to get a more accurate prediction of the future noise environment, therefore, ambient levels were not recorded.

148

**G. Air Quality**

**1. Objectives and Type of Analysis**

This air quality analysis will serve as support documentation for the I-95/I-495 access alternatives considered, and has been prepared in accordance with the U.S. Environmental Protection Agency (US EPA), Federal Highway Administration (FHWA), and Maryland State Highway Administration (MD SHA) guidelines. Carbon monoxide (CO) impacts were analyzed as the accepted indicator of vehicle-generated air pollution.

The EPA's CAL3QHC dispersion model was used to predict carbon monoxide (CO) concentrations for air quality sensitive receptors for the build year (2000) and the design year (2020). Both weekday and Sunday (game day) scenarios were analyzed. The detailed analyses predict air quality impacts from carbon monoxide vehicular emissions for Alternative 1, Alternative 2 and Alternative 3. Modeled 1-hour and 8-hour average CO concentrations were added to background CO concentrations for comparison to the State and National Ambient Air Quality Standards (S/NAAQS).

The objective of the analysis was to compare the Alternative 1, 2 and 3 carbon monoxide levels with the State and National Ambient Air Quality Standards. The detailed analyses conducted for this study included predictions of carbon monoxide concentrations at fifteen air quality receptor locations which measured an area larger than that affected by IAPA action. These locations were felt to represent the worst case conditions for air quality impacts associated with the proposed improvements in Prince George's County.

**2. Construction Impacts**

The construction phase has the potential to impact the local ambient air quality by generative fugitive dust through activities such as demolition and materials handling. The State Highway Administration has addressed this possibility by establishing "Standard Specifications for Construction and Materials" which specifies procedures to be followed by contractors involved in site work.

The Maryland Air Management Administration was consulted to determine the adequacy of the "Specifications" in terms of satisfying the requirements of the "Regulations Governing the

Control of Air Pollution in the State of Maryland". The Maryland Air Management Administration found the specifications to be consistent with the requirements of these regulations. Therefore, during the construction period, all appropriate measures (Code of Maryland Regulations 10.18.06.03D) would be incorporated to minimize the impact of the proposed transportation improvements on the air quality of the area.

**3. Receptor Sites**

Fifteen air receptor locations were selected to represent air quality sensitive locations within the study area (see Figures III-6 and IV-4). The locations selected are either residences or places of worship. The locations of the air quality sensitive sites were verified by a site visit in May, 1996.

**4. Results of Microscale Analysis**

A summary of the CO concentrations is shown in Tables V-13 and V-14. The values shown consist of predicted CO concentrations attributable to traffic on various roadway links plus projected background levels. The concentrations at all receptors are below the State and National Ambient Air Quality Standards (S/NAAQS) for the one-hour and eight-hour analyses of 35 ppm and 9 ppm, respectively.

For weekdays, Alternatives 1 and 2 have the same results, because there is no stadium traffic to affect the CO levels. Alternative 3 shows decreases of approximately 0.1 ppm in CO levels at most receptor sites as compared to Alternatives 1 and 2. This decrease can be attributed to a decrease in traffic volumes on I-95/I-495 south of Arena Drive and a decrease in traffic volumes on MD 214.

On Sundays, a comparison Alternative 1 versus Alternative 2 shows an increase of up to 2.7 ppm in CO levels for Alternative 2. This increase can be attributed to the additional traffic volumes for the Redskins' stadium. Alternative 3 shows a decrease of less than 1 ppm in CO levels at most receptor sites, as compared to Alternative 2. This decrease can be attributed to the redistribution of stadium traffic due to the construction of the proposed Arena Drive interchange with I-95/I-495.

**5. Conformity with Regional Air Quality Planning**

The proposed action under Alternative 3, located in Prince George's County, Maryland, is in a serious ozone non-attainment area, but is not in a carbon monoxide non-attainment area. Since the proposed action and other non-federal improvements are located in an ozone non-attainment area, conformity to the State Implementation Plans (SIP's) is determined through a regional air quality analysis performed on the Transportation Improvement Program (TIP) and transportation plan. A conformity analysis which includes Alternative 3 will be completed prior to the completion of the final environmental document.

**Table V-13**  
**PROPOSED I-95/I-495/ARENA DRIVE INTERCHANGE, PRINCE GEORGE'S COUNTY, MARYLAND**  
**WEEKDAY CO CONCENTRATIONS FROM CAL3QHC**

Receptor	Alternative 1				Alternative 2				Alternative 3			
	2000		2020		2000		2020		2000		2020	
	1-Hr.	8-Hr.	1-Hr.	8-Hr.	1-Hr.	8-Hr.	1-Hr.	8-Hr.	1-Hr.	8-Hr.	1-Hr.	8-Hr.
R-1A	16.4	7.4	20.6	8.4	16.4	7.4	20.6	8.4	16.3	7.4	20.1	8.1
R-1B	15.2	6.8	19.1	7.6	15.2	6.8	19.1	7.6	15.2	6.7	18.8	7.5
R-2A	15.3	6.9	19.4	7.9	15.3	6.9	19.4	7.9	15.2	6.8	19.2	7.8
R-2B	15.5	7.0	19.8	8.0	15.5	7.0	19.8	8.0	15.3	6.9	19.7	7.8
R-2C	14.2	6.3	18.0	7.1	14.2	6.3	18.0	7.1	14.1	6.2	17.7	6.9
R-3	10.1	4.5	11.2	4.8	10.1	4.5	11.2	4.8	10.0	4.5	11.3	4.8
R-4	8.6	3.8	9.7	4.0	8.6	3.8	9.7	4.0	8.6	3.8	9.7	4.0
R-5	11.1	4.8	12.8	5.2	11.1	4.8	12.8	5.2	10.8	4.7	12.8	5.1
R-6	11.5	5.0	13.0	5.5	11.5	5.0	13.0	5.5	11.4	4.9	12.8	5.4
R-7	9.6	4.2	11.3	4.5	9.6	4.2	11.3	4.5	9.5	4.1	11.1	4.4
R-8	9.1	3.9	10.4	4.3	9.1	3.9	10.4	4.3	9.1	3.9	10.2	4.3
R-12	7.1	3.0	7.4	3.2	7.1	3.0	7.4	3.2	7.1	3.0	7.4	3.1
R-13	7.2	3.1	7.6	3.2	7.2	3.1	7.6	3.2	7.1	3.1	7.7	3.2
R-14	7.1	3.0	7.6	3.2	7.1	3.0	7.6	3.2	7.0	3.0	7.5	3.1
R-15	8.2	3.4	8.2	3.5	8.2	3.4	8.2	3.5	8.3	3.4	8.3	3.5

Notes: 1-hour average CO concentrations include a 6.1 ppm background concentration. Worse Case (a.m. or p.m.) shown.

8-hour average CO concentrations include a 2.6 ppm background concentration.

The S/NAAQS for the 1-hour average is 35.0 ppm.

The S/NAAQS for the 8-hour average is 9.0 ppm.



**Table V-14**  
**PROPOSED I-95/I-495/ARENA DRIVE INTERCHANGE, PRINCE GEORGE'S COUNTY, MARYLAND**  
**SUNDAY CO CONCENTRATIONS FROM CAL3QHC**

Receptor	Alternative 1				Alternative 2				Alternative 3			
	2000		2020		2000		2020		2000		2020	
	1-Hr.	8-Hr.	1-Hr.	8-Hr.	1-Hr.	8-Hr.	1-Hr.	8-Hr.	1-Hr.	8-Hr.	1-Hr.	8-Hr.
R-1A	13.9	5.6	17.6	5.7	14.7	5.8	18.2	5.9	14.4	5.8	18.9	5.9
R-1B	12.7	5.1	15.7	5.4	13.5	5.3	16.0	5.4	13.6	5.4	17.3	5.5
R-2A	12.8	5.3	16.3	5.5	13.7	5.5	16.7	5.6	13.7	5.5	18.0	5.6
R-2B	12.8	5.4	15.8	5.6	13.8	5.5	16.3	5.6	13.9	5.7	18.0	5.8
R-2C	11.9	4.9	14.6	5.1	12.8	5.0	14.8	5.1	12.8	5.1	16.5	5.2
R-3	8.6	3.7	9.7	3.7	11.3	4.0	11.0	3.9	10.0	3.9	10.9	3.9
R-4	7.9	3.3	8.9	3.4	8.8	3.4	9.5	3.5	8.5	3.4	9.4	3.5
R-5	9.3	3.8	10.7	3.8	10.9	4.1	11.6	4.0	10.0	3.9	11.5	4.0
R-6	9.3	3.9	10.9	4.0	11.4	4.2	12.0	4.2	10.6	4.2	12.0	4.2
R-7	8.7	3.6	10	3.6	9.3	3.6	10.1	3.6	9.2	3.6	10.3	3.7
R-8	8.2	3.5	9.3	3.5	8.9	3.6	9.7	3.5	8.6	3.6	10.0	3.6
R-12	6.8	2.9	7.1	3.0	8.8	3.2	7.9	3.1	8.5	3.2	7.7	3.0
R-13	6.8	2.9	7.1	2.9	8.5	3.1	7.9	3.0	8.1	3.1	7.8	3.0
R-14	6.8	2.9	7.2	2.9	8.0	3.1	7.4	3.0	7.7	3.0	7.4	3.0
R-15	7.2	3.1	7.5	3.1	9.2	3.6	8.7	3.7	9.2	3.7	8.7	3.3

Notes: 1-hour average CO concentrations include a 6.1 ppm background concentration. Worse Case (a.m. or p.m.) shown.

8-hour average CO concentrations include a 2.6 ppm background concentration.

The S/NAAQS for the 1-hour average is 35.0 ppm.

The S/NAAQS for the 8-hour average is 9.0 ppm.

153

**6. Analyses Input**  
**a. Traffic Data**

The traffic data for this air quality analysis includes the average daily traffic volumes (ADT), hourly a.m. and p.m. peak-hour volumes, percent daily distributions (diurnal traffic curves), and peak and off-peak vehicle speeds.

Peak hour and off-peak vehicle speeds were developed using the Highway Capacity Manual Software. The free flow speed for I-95/I-495 was assumed to be 60 mph. Free flow speeds for MD 214, Summerfield Boulevard, Brightseat Road, and Arena Drive was assumed to be 50 mph. LOS F speed was assumed to be 35 mph on all roads. Peak hour and off-peak hour speeds for the proposed Arena Drive interchange ramps was assumed to be 35 mph.

There were two signalized intersections analyzed in the study area, MD 214 at Summerfield Boulevard and MD 214 at Brightseat Road. Signal timing was assumed based on current and future traffic conditions.

**b. Emission Factors**

Mobile source emission factors were obtained for use in the CO prediction models using the latest version of the (EPA) Mobile Source Emission Factors Model, MOBILE5A, released March 26, 1993. The emission rates of individual vehicles are influenced by factors such as ambient air temperature, engine temperature, operating mode, average speed, and maintenance. The average emission rate for a fleet of vehicles operating on a highway is further influenced by the composition of the fleet, vehicle type, and vehicle age.

Vehicle CO emission rates increase with decreasing ambient temperatures. An ambient temperature of 20°F was used to determine peak hour impacts, while an average temperature of 35°F was selected to represent the composite hours which together make up the 8-hour average impact. Engine operating temperature is included in the emission rate calculation as that fraction of vehicles operating in the cold or hot start modes. For this analysis, Federal Test Procedure (FTP) starts were assumed. The FTP assumes 20.6% of vehicles are non-catalytic cold start vehicles, 27.3% for catalytic hot start vehicles, and 20.6% catalytic cold start vehicles. Vehicle maintenance is included in the emissions rate calculations as the rate of compliance with the Maryland Vehicle Emissions

Inspection Program (VEIP). The vehicle fleet mix and age also influence the average fleet emission rates. The vehicle fleet mix and age also influence the average fleet emission rates. The vehicle mix for I-95/I-495 and Arena Drive was provided by MD SHA for both the peak-hour volumes and the ADT. Regional average vehicle ages were assumed.

Because MOBILE5a cannot accurately calculate idle emissions factor, the methodology contained in EPA Information Sheet #2 was used. This method uses MOBILE5a to calculate emissions (g/mi) for a speed of 2.5 mph (the lowest speed allowed as input to MOBILE5a) and then multiplies the resulting emissions by 2.5 mph to get idle emissions factor in g/hr.

**c. CAL3QHC Analysis**

The mathematical model used to estimate future air quality concentrations was the current version of the EPA's CAL3QHC dispersion model, released in June, 1993. The CAL3QHC dispersion model is a microcomputer-based modeling methodology developed to predict the level of CO or other inert pollutant concentrations from motor vehicles traveling near roadway intersections. CAL3QHC is a consolidation of the CALINE3 line source dispersion model and an algorithm that internally estimates the length of the queues formed by idling vehicles at signalized intersections. Based on the assumption that vehicles at an intersection are either in motion or in an idling state, the program is designed to predict air pollution concentrations by combining the emissions from both moving and idling vehicles. By including emissions from idling vehicles, CAL3QHC represents a more reliable tool than CALINE3 alone for predicting CO concentrations near signalized intersections where idling vehicles interact with moving vehicles in complex configurations. Predictions of free flow traffic volumes using either CALINE3 or CAL3QHC would yield equivalent results.

The CAL3QHC program requires the roadways to be broken down into segments known as links. Links can be either free flow links (for vehicles moving at a constant velocity) or queue links (for idling vehicles). Each of these can be one of four types based on the roadway geometry (at-grade, fill, bridge, or depressed). All free flow and queue links used in this study are at-grade links. The required inputs for each link are the end points, traffic volume (vehicles/hour), and the emission factor (g/veh\* mile for free flow links of g/veh\*hr for queue links). Additional inputs for queue links only are the average cycle length (seconds), average red time length (seconds), clearance time lost (seconds), saturation flow rate (veh/hr), signal type (pre-timed, actuated, or semi-actuated), and

arrival rate (worst, below average, average, above average, or best progression). The saturation flow rate was assumed to be 1,600 vehicles/hour. Both signals were assumed to be pre-timed, with an average arrival rate, and a clearance time lost of 2.0 seconds.

A free flow link is defined as a straight segment of roadway having a constant width, height, traffic volume, traffic speed and vehicle emission factor. A change in any of these factors requires a new link to be coded. The width of a free flow link is equal to the roadway width plus 10 feet on each side of the roadway to account for the dispersion of the plume generated by the wake of moving vehicles. The free flow links for MD 214, Summerfield Boulevard, Brightseat Road, and Arena Drive modeled both directions of travel as one roadway link. The link width used was the curb to curb width of the roadway plus 20 feet. The traffic volumes used were the combined traffic volume in both directions traveling along the roadway segment. Because the median for I-95/I-495 is wider than 20 feet, the northbound and southbound roadways were modeled separately as 68 foot roadways (48 feet plus 20 feet).

A queue link is defined as a straight segment of roadway with a constant width and emission source strength, on which vehicles are idling during the average red time length. CAL3QHC calculates the length of the queue based on the traffic volume and the signal timing. The width inputted for the link width is the actual width of the roadway.

CAL3QHC also requires the input of meteorological factors. These factors are average timing (minutes), surface roughness coefficient (cm), settling velocity (cm/s), deposition velocity (cm/s), wind speed (m/s), and mixing height (m). The values used for these factors are summarized on Table V-15.

CAL3QHC calculates the CO concentration at each receptor for a given wind direction. The wind direction was varied through a full 360 degrees in five degree increments in this study. CAL3QHC places the results for all wind directions for each receptor in a matrix, and then determines the wind direction that causes the worst CO concentration at each receptor. In general, for receptors near free flow links, wind angles nearly parallel to the roadway yield the highest CO concentrations.

The worst case 1-hour average analyses conducted for this study were performed using the highest one-hour traffic volumes, Stability Class F, and a 1.0 m/sec. wind speed. Both a.m. and p.m.

157

peaks were analyzed. The maximum one-hour CO impact was obtained for each air quality sensitive receptor by adding the background concentration to the one-hour CO receptor-specific concentration.

To estimate the maximum eight-hour average CO concentration, daily traffic distributions (diurnal curves) were used to breakdown the ADT's into hourly traffic volumes. Hourly time segments were analyzed to determine the receptor-specific CO concentrations. The worst consecutive eight hours were averaged and added to the background CO concentration to obtain the 8-hour average CO concentration.

**Table V-15**

**PROPOSED I-95/I-495/ARENA DRIVE INTERCHANGE  
METEOROLOGICAL VARIABLES AND  
OTHER CONSTANTS USED IN CAL3QHC**

<b>VARIABLE</b>	<b>1-HOUR</b>	<b>8-HOUR</b>
Ambient Temperature	20°F	35°F
Wind Speed	1 m/s	2 m/s before 5 p.m. 1 m/s after 5 p.m.
Stability Class	F	D before 5 p.m. F after 5 p.m.
Averaging Time	60 minutes	60 minutes
Surface Roughness Coefficient	108 cm (suburban area)	108 cm (suburban area)
Settling Velocity	0.0 cm/second	0.0 cm/second
Deposition Velocity	0.0 cm/second	0.0 cm/second
Mixing Height	1,000 meters	1,000 meters
Source Height	0.0 feet	0.0 feet
Scale Factor	0.3048 meters/foot	0.3048 meters/foot

**d. Background Levels**

In order to calculate the total concentration of CO which occurs at a particular receptor site during worst cast meteorological conditions, the background levels are considered in addition to the levels directly attributable to the facility under construction. The background levels derived from on-site monitoring conducted by the Maryland Air Management Administration at their Bladensburg Air Monitoring Station in Prince George's County during the period of 1994 were used.

Background CO, PPM

	<u>1 Hour</u>	<u>8 Hour</u>
2000	6.1	2.6
2020	6.1	2.6

Data obtained from Maryland Air Quality Data Report 1994

Maryland Department of the Environment  
Air Management Administration  
2500 Broening Highway  
Baltimore, Maryland 21224

**VI. COMMENTS AND COORDINATION**

160



Parris N. Glendening  
Governor

**Maryland Department of Natural Resources**

**Public Lands & Forestry**

Tawes State Office Building  
580 Taylor Avenue  
Annapolis, Maryland 21401

John R. Griffin  
Secretary

Ronald N. Young  
Deputy Secretary

September 21, 1995

Ms. Pamela Gribben  
KCI Technologies  
10 North Park Drive  
Hunt Valley MD 21030

Re: I-95 Highway Improvements

Dear Ms. Gribben:

This correspondence is in response to your request on the Scenic River or State Wildlands impacts potentially associated with the Improvement of a portion of I-95 on the west side of the Washington, D.C. Beltway.

The closest designated Scenic River is the Patuxent River (to the east) and portions of the Potomac River (to the west). No Scenic or Wild River impacts are likely from this project.

The closest designated State Wildland is Beltwoods at the intersection of Route 214 and Church Lane in Prince George's County. No Wildland impacts from this project are likely.

If you need more information, feel free to call me at 410-974-3654.

Sincerely,

Kenneth Shanks  
Southern Region Chief  
Greenways and Resource Planning





161

Parris N. Glendening  
Governor

**Maryland Department of Natural Resources**  
Fish, Heritage and Wildlife Administration  
Tawes State Office Building  
Annapolis, Maryland 21401

John R. Griffin  
Secretary

Ronald N. Young  
Deputy Secretary

October 2, 1995

Ms Pamela S. Gribben  
Environmental Scientist  
KCI TECHNOLOGIES  
10 North Park Drive  
Hunt Valley, MD 21030-1888

RE: I-95 Highway Improvements  
KCI Job Order No. 01-95016-B

Dear Ms Gribben:

The Fish, Heritage and Wildlife Administration has no records for Federal or State rare, threatened or endangered plants or animals within this project site. This statement should not be interpreted as meaning that no rare, threatened or endangered species are present. Such species could be present but have not been documented because an adequate survey has not been conducted or because survey results have not been reported to us.

Sincerely,

Robert L. Miller, Coordinator  
FHWA - Environmental Review

RLM:fmb  
ER#95.1156



# United States Department of the Interior

## FISH AND WILDLIFE SERVICE

Chesapeake Bay Field Office  
177 Admiral Cochrane Drive  
Annapolis, MD 21401

October 3, 1995

Ms. Pamela S. Gribben  
KCI Technologies  
10 North Park Drive  
Hunt Valley, MD 21030-1888

Re: I-95 Highway Improvements  
KCI Job Order No. 01-95016-B  
Prince Georges County, MD

Dear Ms. Gribben:

This responds to your September 22, 1995, request for information on the presence of species which are Federally listed or proposed for listing as endangered or threatened in the project area. We have reviewed the information you enclosed and are providing comments in accordance with Section 7 of the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.).

Except for occasional transient individuals, no Federally listed or proposed endangered or threatened species are known to exist in the project impact area. Therefore, no Biological Assessment or further Section 7 Consultation with the U.S. Fish and Wildlife Service is required. Should project plans change, or if additional information on the distribution of listed or proposed species becomes available, this determination may be reconsidered. This response relates only to endangered species under our jurisdiction. For information on other rare species, you should contact Ms. Lynn Davidson of the Maryland Natural Heritage Program at (410) 974-2870.

An additional concern of the Service is wetlands protection. Both the Federal and the multi-state Chesapeake Bay Program wetlands policies have the interim goal of no overall net loss of the Basin's remaining wetlands, and the long term goal of increasing the quality and quantity of the Basin's wetlands resource base. Because of this policy and the functions and values wetlands perform, the Service recommends avoiding wetland impacts. All wetlands within the project area should be identified, and if construction in wetlands is proposed, the U.S. Army Corps of Engineers, Baltimore District, should be contacted for permit requirements. They can be reached at (410) 962-3670.

1/6/3

Thank you for your interest in fish and wildlife issues. If you have any questions or need further assistance, please contact Andy Moser at (410) 573-4537.

Sincerely,

G. A. Moser

John P. Wolflin  
Supervisor  
Chesapeake Bay Field Office



Maryland Department of Transportation  
State Highway Administration

164  
David L. Winstead  
Secretary  
Hal Kassoff  
Administrator

MEMORANDUM

TO: Mr. Keith Harris  
Chief, Special Projects  
Permit Section  
Department of the Army  
Baltimore District  
U.S. Army Corps of Engineers

JUN 12 1996

FROM: Linda A. Kelbaugh  
Chief, Environmental Programs Division

DATE: February 23, 1996

SUBJECT: Interagency Jurisdictional Field Review  
for Arena Drive / I-95 Interchange and  
Roadway Improvements  
P-189-201-372 (N)

Dear Mr. Harris,

A Interagency Jurisdictional Field Review was held on Thursday February 22, 1996, the following representatives were in attendance:

David Olson	COE	410-962-5673
Meg Gaffney-Smith	COE	410-962-6083
Robin Brown	PG County DER	301-883-7424
Tom Case	SHA-HDD	410-333-6075
Brian Bernstein	KCI	410-316-7858
Veronica Piskor	KCI	410-316-7871
Bill Schultz	USF&WS	410-573-4534
John Denniston	SHA-EPD	410-545-8609
Susan Jacobs	SHA-EPD	410-545-8608

Mr. Doug Abdérhalden of MDE NTWWP was unable to attend but requested minutes from the meeting.

My telephone number is \_\_\_\_\_

Maryland Relay Service for Impaired Hearing or Speech  
1-800-735-2258 Statewide Toll Free  
Mailing Address: P.O. Box 717 • Baltimore, MD 21203-0717  
Street Address: 707 North Calvert Street • Baltimore, Maryland 21202

165

The goal of this meeting was to review jurisdictional wetlands within the proposed I-95 interchange at Arena Drive which will facilitate vehicular access to the proposed Redskins Stadium at the present western terminus of Arena Drive. The group assembled at the intersection of Arena Drive and Brightseat Road. Susan Jacobs described the history of the project. She explained that given the extremely short time frame allotted for design and construction of this project, this field review will assist SHA in avoiding and minimizing impacts to jurisdictional wetlands. Tom Case gave a brief description of the conceptual design and schedule of the proposed interchange.

- 1. **Wetland 1 (PEM5B and POWH)**  
Wetland 1 is a palustrine open water wetland with palustrine emergent wetland components, located northwest of the intersection of Arena Drive and Brightseat Road. Approximately half of this constructed wetland is composed primarily of narrow-leaved persistent vegetation.

**Field notes:**

All concurred with the delineation of this wetland and because it is a created wetland 1:1 mitigation will be required. If this wetland is impacted it was suggested that the mitigation be done by expanding the existing constructed wetland.

- 2. **Wetland 8 (R4UB1)**  
Wetland 8 is located northwest of the intersection of Arena Drive and Brightseat Road. Water is piped under Brightseat Road towards and existing SWM Pond. The channel is dominated by broad-leaved cattails and several black willow saplings.

**Field notes:**

All concurred with the delineation and this area was considered "Waters of the U.S."

- 3. **Wetland 17 (R4UB3)**  
Wetland 17 is located immediately east of Brightseat Road and the proposed alignment for Arena Drive. This remnant channel appears to have had more flow before the culvert system was constructed. However, it appears that flow is still evident on an intermittent basis.

**Field notes:**

All concurred with the delineation of the area and it was considered Waters of the U.S. Also the adjacent woods were called in as jurisdictional. This additional area was considered PFO will be surveyed and incorporated into the final report.

**4. Wetland 13 (R4UB3)**

Wetland 13 is located along the west side of I-95 and the proposed alignment for Arena Drive. This intermittent channel carries surface flow in a southerly direction to a culvert that extends under I-95 in an easterly direction.

**Field notes:**

This area was determined to be non-jurisdictional.

**5. Wetland 2 (R3UB3)**

Wetland 2, an unnamed tributary to Southwest Branch, is located along the east side of I-95 and the proposed Arena Drive Interchange. This wetland is classified as an upper perennial stream with an unconsolidated gravel or sand bottom.

**Field notes:**

All concurred with the delineation and this area was determined to be Waters of the U.S. Also at the same time the floodplain adjacent to and east of Wetland 2 and north of Wetland 4 was investigated for jurisdictional purposes, it was determined and agreed that this area did not meet the criteria for wetlands and was non-jurisdictional. Data sheets for this area will be in the final report.

**6. Wetland 4 (POWH and R4UB1/3)**

Wetland 4 is an intermittent riverine system, this channel is riprap covered and vegetated in its upper reaches, ponded in its mid-section and within its lower reaches confined to its channel as it joins the unnamed tributary to Southwest Branch.

**Field notes:**

All concurred with the delineation and this area was determined to be Waters of the U.S.

167

7.

**Wetland 3 (PEM5A)**

Wetland 3 is a series of vegetated depressions east of I-95 along the transmission Right-of-way immediately adjacent to the unnamed tributary to Southwest Branch. These wetlands are classified as seasonally saturated, narrow-leaved, persistent, palustrine emergent wetlands.

**Field notes:**

Robin Brown explained that this series of emergent wetland may have been part of a restoration project required by Cheryl Amrani of the USFWS. The regrading was completed by the Washington Sanitary Sewer Commission as restoration for alleged impacts to wetlands that were disturbed during construction of a sanity sewer line adjacent to I-95. It remained unknown at the time of the meeting as to the details of weather or not the area was placed in an easement. Meg Gaffney-Smith reserved making a jurisdictional determination until further information was found.

Bill Schultz confirmed that this area is restoration for WSSC impacts, SHA will follow up on the requirements with the COE and USF&W.

8.

**Wetland 16 (PEM1A)**

Wetland 16 is located along the east side of I-95 and the proposed Arena Drive Interchange. This wetland is classified as a temporally saturated, intermittently exposed palustrine emergent wetland dominated by narrow-leaved persistent vegetation.

**Field notes:**

This area was determined to be non-jurisdictional.

If you have any question or comments about these minutes please contact Susan Jacobs at 410-545-8608.

**CONCURRENCE:**

I approve of the jurisdictional delineation as described in the above minutes.

NAME: Andrew T. Dan DATE: 5/13/96

ORGANIZATION: MDE

cc: Mark Crampton  
Lou Ege

168  
Arena Drive  
I-95

Page 4

7. **Wetland 3 (PEMSA)**

Wetland 3 is a series of vegetated depressions east of I-95 along the transmission Right-of-way immediately adjacent to the unnamed tributary to Southwest Branch. These wetlands are classified as seasonally saturated, narrow-leaved, persistent, palustrine emergent wetlands.

**Field notes:**

Robin Brown explained that this series of emergent wetland may have been part of a restoration project required by Cheryl Amrani of the USFWS. The regrading was completed by the Washington Sanitary Sewer Commission as restoration for alleged impacts to wetlands that were disturbed during construction of a sanitary sewer line adjacent to I-95. It remained unknown at the time of the meeting as to the details of weather or not the area was placed in an easement. Meg Gaffney-Smith reserved making a jurisdictional determination until further information was found.

Bill Schultz confirmed that this area is restoration for WSSC impacts, SHA will follow up on the requirements with the COE and USF&W.

8. **Wetland 16 (PEM1A)**

Wetland 16 is located along the east side of I-95 and the proposed Arena Drive Interchange. This wetland is classified as a temporally saturated, intermittently exposed palustrine emergent wetland dominated by narrow-leaved persistent vegetation.

**Field notes:**

This area was determined to be non-jurisdictional.

If you have any question or comments about these minutes please contact Susan Jacobs at 410-545-8608.

**CONCURRENCE:**

I approve of the jurisdictional delineation as described in the above minutes.

NAME: Meg Gaffney-Smith DATE: 3/22/96

ORGANIZATION: COE

cc: Mark Crampton  
Lou Ege



7. **Wetland 3 (PEM5A)**

Wetland 3 is a series of vegetated depressions east of I-95 along the transmission Right-of-way immediately adjacent to the unnamed tributary to Southwest Branch. These wetlands are classified as seasonally saturated, narrow-leaved, persistent, palustrine emergent wetlands.

**Field notes:**

Robin Brown explained that this series of emergent wetland may have been part of a restoration project required by Cheryl Amrani of the USFWS. The regrading was completed by the Washington Sanitary Sewer Commission as restoration for alleged impacts to wetlands that were disturbed during construction of a sanitary sewer line adjacent to I-95. It remained unknown at the time of the meeting as to the details of weather or not the area was placed in an easement. Meg Gaffney-Smith reserved making a jurisdictional determination until further information was found.

Bill Schultz confirmed that this area is restoration for WSSC impacts, SHA will follow up on the requirements with the COE and USF&W.

8. **Wetland 16 (PEM1A)**

Wetland 16 is located along the east side of I-95 and the proposed Arena Drive Interchange. This wetland is classified as a temporally saturated, intermittently exposed palustrine emergent wetland dominated by narrow-leaved persistent vegetation.

**Field notes:**

This area was determined to be non-jurisdictional.

If you have any question or comments about these minutes please contact Susan Jacobs at 410-545-8608.

**CONCURRENCE:**

I approve of the jurisdictional delineation as described in the above minutes.

NAME: William Schultz DATE: 4/3/96  
ORGANIZATION: US Fish + Wildlife Service

cc: Mark Crampton  
Lou Ege



Maryland Department of Transportation  
State Highway Administration

170

David L. Winstead  
Secretary  
Hal Kassoff  
Administrator

MEMORANDUM

JUN 12 1996

TO: Mr. Keith Harris, Chief  
Special Projects  
Permit Section  
Department of the Army  
Baltimore District  
U.S. Army Corps of Engineers

FROM: Linda A. Kelbaugh, Chief  
Environmental Programs Division

DATE: April 29, 1996

SUBJECT: Interagency Jurisdictional Field Review for  
I-95 / MD 202 / MD 214 Interchange and Roadway Improvements  
(Redskins Stadium Project)  
P-189-201-372 (N)

Dear Mr. Harris,

A Interagency Jurisdictional Field Review was held on Friday April 26, 1996, the following representatives were in attendance:

Meg Gaffney -Smith	COE	410-962-6083
Robin Brown	PG County DER	301-883-7424
Will Castleberry	DEED	410-767-6492
Dan Sparklin	SHA-PPD	410-545-8564
Brian Bernstein	KCI	410-316-7858
Veronica Piskor	KCI	410-316-7871
Scott Rasmussen	JMT	410-329-3100
Mark Crampton	SHA-HDD	410-545-8865
Linda Kelbaugh	SHA-EPD	410-545-8610
John Denniston	SHA-EPD	410-545-8609
Susan Jacobs	SHA-EPD	410-545-8608

My telephone number is \_\_\_\_\_

Maryland Relay Service for Impaired Hearing or Speech  
1-800-735-2258 Statewide Toll Free

Mailing Address: P.O. Box 717 • Baltimore, MD 21203-0717  
Street Address: 707 North Calvert Street • Baltimore, Maryland 21202

171  
P-189-201-372

April 29, 1996

Page 2

The goal of this meeting was to review jurisdictional wetlands within the limits of the proposed improvements at I-95 and MD 202, MD 214 and Sheriff Rd. / Brightseat Rd. The group assembled at the intersection of Arena Drive and Brightseat Road. Susan Jacobs described the agenda for the day and Mark Crampton gave an overview of the design and advertisement schedule. Susan also stated the the permit will be applied for the first of June.

1. **Wetland 31 (R4SB3)**

This wetland is a drainage channel located along the northern shoulder of Sheriff Road immediately west of the intersection with Brightseat Road. The classification for this wetland is an intermittent stream with a streambed dominated by mud.

Field Notes:

All concurred with the delineation and this area was considered " Waters of the U.S. "

2. **Wetland 30 (R4SB3)**

This wetland is a riprap channel that flows parallel to Sheriff Road along the south shoulder immediately west of the intersection of Brightseat Road. This channel is classified as an intermittent riverine system with an unconsolidated mud bottom.

Field Notes:

This area was determined to be non-jurisdictional.

3. **Wetland 33 (R3SB3)**

This wetland is a small perennial stream that drains several hillside seeps approximately 350 feet south of the intersection of Sheriff and Brightseat Roads. Surface water from adjacent upland areas and groundwater discharge are the primary sources of hydrology at this site. This channel is classified as an upper perennial riverine system with an unconsolidated mud bottom.

P-189-201-372  
April 29, 1996  
Page 3

Field Notes:

All concurred with the delineation and this area was considered " Waters of the U.S. "

4. **Wetland 34 (PEM2B)**

This wetland is a hillside seep that lies adjacent to Wetland 33, approximately 270 feet south/southeast of the intersection of Sheriff and Brightseat Roads. This wetland is classified as nonpersistant, saturated, palustrine emergent wetland. Evidence of hydrology includes saturation and water stained leaves. The source of hydrology appears to be groundwater discharge.

Field Notes:

All concurred with the delineation.

5. **Wetland 32 (PFO1E)**

Wetland 32 is a palustrine forested wetland, located northeast of the intersection of Sheriff and Brightseat Roads. This deep depression receives discharge from two culverts that drain an adjacent shopping center. The sources of hydrology appear to be surface runoff and possibly groundwater.

Field Notes:

This area was determined to be non-jurisdictional.

6. **Wetland 7 (PFO, PSS/E)**

This wetland is located within the southeast quadrangle of the I-95/MD 202 interchange. The source of hydrology is primarily stormwater flow carried from a pipe under I-95. Hydrology appears limited to surface flow and stormwater flow from the pipe extending from I-95 and possible groundwater to a lesser extent. This wetland is classified as a palustrine forested/scrub shrub wetland with broad-leaved deciduous vegetation and an intermittently exposed hydrologic regime.

P-189-201-372

April 29, 1996

Page 4

Field Notes:

This area was determined to be non-jurisdictional.

7. **Wetland 11 (R3UB1)**

Wetland 11 is the upper reach of an unnamed tributary to Southwest Branch and is located along the eastbound ramp from I-95 to MD 202. Areas of both open water and scrub shrub wetland are found throughout this system. Areas along the channel where many black willow and green ash saplings are evident have been classified as scrub shrub.

Field Notes:

All concurred with the delineation and this area was considered "Waters of the U.S."

8. **Wetland 10 (PFO1E)**

Wetland 10 is located adjacent to the eastbound ramp from I-95 to MD 202. The source of hydrology appears to be primarily stormwater carried from a culvert adjacent to I-95. Other hydrologic sources may include surface runoff, groundwater and periodic flooding associated with Wetland 11. This wetland is classified as a palustrine forested wetland dominated by broad-leaved deciduous vegetation and a seasonally saturated hydrologic regime.

Field Notes:

This area was determined to be non-jurisdictional.

9. Wetland 9 (PEM1E)

Wetland 9 is located along the eastbound ramp from I-95 to MD 202. The source of hydrology appears to be primarily stormwater flow carried from a pipe under I-95 and possibly groundwater and periodic flooding associated with Wetland 11. This wetland is classified as a palustrine emergent wetland with non-persistent vegetation and a seasonally saturated hydrologic regime.

Field Notes:

This area was determined to be non-jurisdictional.

10. Wetland 5 (R3UB3)

This wetland is located along the north and southeast quadrangle of the I-95/214 interchange. Perennial flow is carried under the roadway via a series of culverts. The Cowardin Classification for this wetland is an upper perennial stream with an unconsolidated bottom dominated by mud.

Field Notes:

All concurred with the delineation and this area was considered "Waters of the U.S."

11. Wetland 6 (PEM1E)

Wetland 6, located along MD 214 immediately east of I-95, consists of both palustrine emergent and open water components. This wetland is a man-made channel that periodically overflows into Wetland 5. This wetland is both classified as a seasonally saturated, narrow leaved persistent palustrine emergent wetland and an open water dominated wetland.

Field Notes:

This area was determined to be non-jurisdictional.

175

P-189-201-372  
April 29, 1996  
Page 5

**12. Wetland 15 (POW)**

Wetland 15 is an unvegetated stormwater management pond located along the eastbound ramp from I-95 to MD 214. The primary source of hydrology is stormwater runoff from MD 214.

**Field Notes:**

This area was determined to be non-jurisdictional.

**13. Wetlands 22 & 21 (R3UB3)**

These wetlands are unvegetated depressions located between an unnamed tributary to Southwest Branch and the eastbound ramp from I-95 to MD 214. The depressions are primarily scour areas where the flow from each culvert exits prior to the confluence with the unnamed tributary. The culverts carry stormwater flow from under I-95. These wetlands are both classified as upper perennial stream sections with an unconsolidated bottom dominated by mud.

**Field Notes:**

This area was determined to be non-jurisdictional.

**14. Wetland 20 (R3UB2)**

This wetland is the portion of Southwest Branch that flows under I-95 immediately south of the interchange with MD 214. Wetland 20 is classified as an upper perennial stream with an unconsolidated bottom dominated by sand.

**Field Notes:**

All concurred with the delineation and this area was considered "Waters of the U.S."

P-189-201-372  
April 29, 1996  
Page 6

15. Wetland 19 (R3UB2)

This wetland is an unnamed tributary to Southwest Branch located along the southbound ramp from MD 214 to I-95. The Cowardin Classification for Wetland 19 is an upper perennial stream with an unconsolidated bottom dominated by mud.

Field Notes:

This area was determined to be non-jurisdictional.

16. Wetland G (PFO1E)

This wetland is located at the intersection of Glen Valley Drive and Brightseat Roads. Hydrologic indicators include standing water, wetland drainage patterns, and hydric soils. The boundaries of this wetland primarily follow the toe of the slope with Brightseat Road.

Field Notes:

This wetland was not reviewed today because Nicholle Braspennickx, COE had determined this area to be Jurisdictional at PG Counties field review on December 29, 1996.

17. Wetland H (R3UB3)

This wetland is located at the intersection of Glen Valley Drive and Brightseat Roads. Wetland H is an unnamed tributary to Southwest Branch located along Brightseat Road and extends under MD 214 (south of MD 214 this tributary is delineated as Wetland 19).

Field Notes:

This wetland was not reviewed today because Nicholle Braspennickx, COE had determined this area to be Jurisdictional at PG Counties field review on December 29, 1996.



P-189-201-372

OPTIONAL FORM 99 (7-90)

FAX TRANSMITTAL

# of pages 1

To	Susie Jacobs	From	Meg Smith
Dept./Agency	SHA	Phone #	410-962-6083
Fax #	410-333-4111	Fax #	410-962-6024

NSN 7540-01-317-7368 5088-101 GENERAL SERVICES ADMINISTRATION

P-189-201-372  
April 29, 1996  
Page 7

18. Wetland F (PFO1E)

This wetland is located at the intersection of Glen Valley Drive and Brightseat Roads. Standing water was evident at this site. Other hydrologic indicators include tree buttressing and hydric soils. The boundaries of the wetland follow the toe of the slope along Brightseat Road and tie into the top of the bank of an unnamed tributary to southwest branch that flows under Brightseat Road.

Field Notes:

This wetland was not reviewed today because Nicholle Braspennickx, COE had determined this area to be Jurisdictional at PG Counties field review on December 29, 1996.

If you have any questions about these minutes please contact Susan Jacobs at 410-545-8608.

CONCURRENCE:

I approve of the jurisdictional delineation as described in the above minutes.

NAME: Meg Hayman - Smith DATE: 5/3/96  
ORGANIZATION: Corps of Engineers (CENAB-OP-RX)

- cc: Andrew Der w/attachments
- Judy Cole w/attachments
- Alan Aronald w/attachments
- Michele Floam
- Bo Ward
- Rob Loskot

178

P-189-201-372  
April 29, 1996  
Page 7

18. Wetland F (PFO1E)

This wetland is located at the intersection of Glen Valley Drive and Brightseat Roads. Standing water was evident at this site. Other hydrologic indicators include tree buttressing and hydric soils. The boundaries of the wetland follow the toe of the slope along Brightseat Road and tie into the top of the bank of an unnamed tributary to southwest branch that flows under Brightseat Road.

Field Notes:

This wetland was not reviewed today because Nicholle Braspennickx, COE had determined this area to be Jurisdictional at PG Counties field review on December 29, 1996.

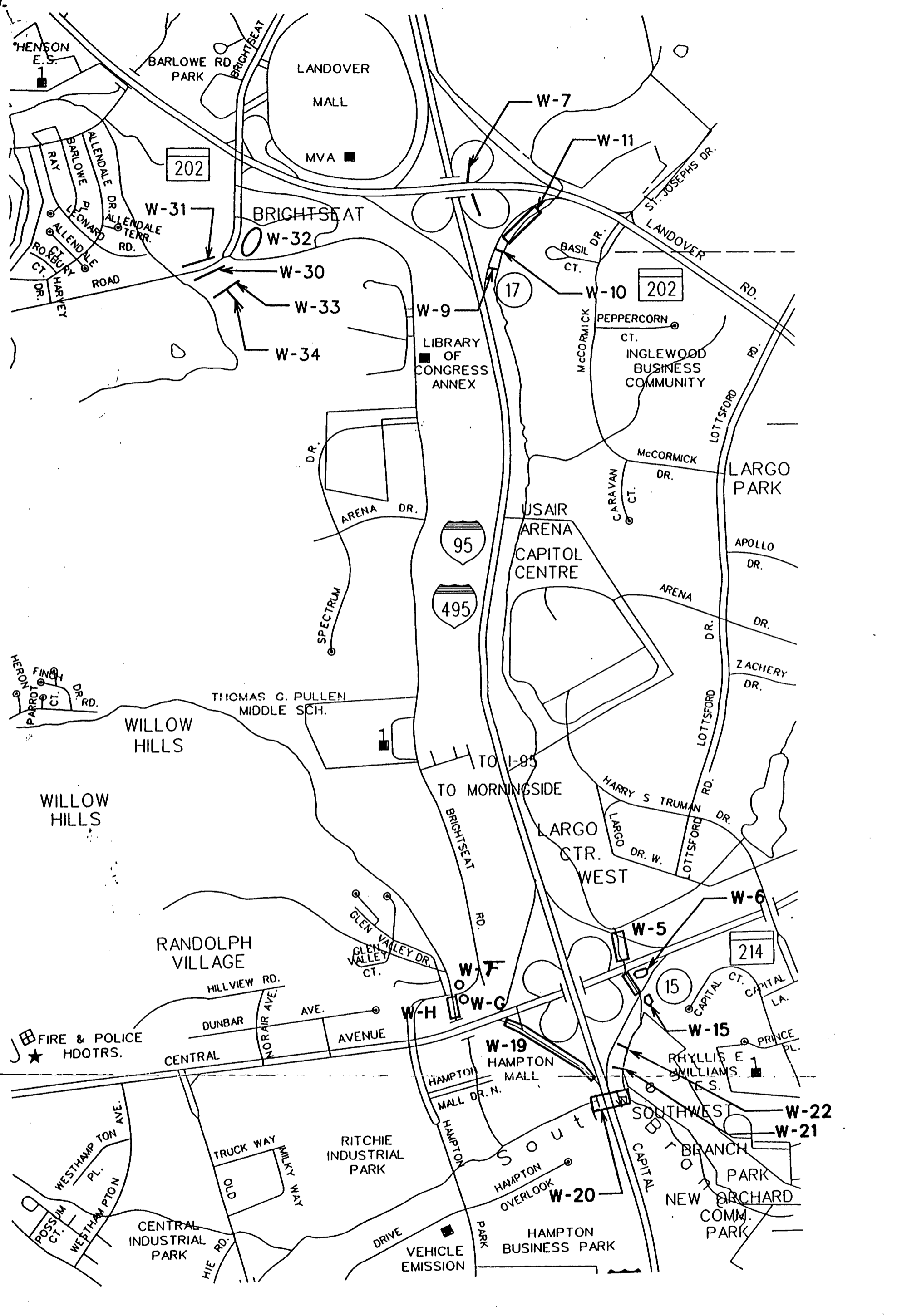
If you have any questions about these minutes please contact Susan Jacobs at 410-545-8608.

**CONCURRENCE:**

I approve of the jurisdictional delineation as described in the above minutes.

NAME: Andrew T. Der DATE: 5/13/96  
ORGANIZATION: MDE

- cc: Andrew Der w/attachments
- Judy Cole w/attachments
- Alan Aronald w/attachments
- Michele Floam
- Bo Ward
- Rob Loskot



**I-95 ROADWAY IMPROVEMENT PROJECT  
WETLANDS LOCATION MAP**

SCALE: 1" = 100'  
DATE: APRIL, 1996  
KCI JOB No. 01-95079E



ENGINEERS AND PLANNERS  
10 NORTH PARK DRIVE  
HUNT VALLEY, MD. 21030-1888  
(410) 316-7800

180



PROJECT DEVELOPMENT DIVISION

Parris N. Glendening, Governor  
Patricia J. Payne, Secretary

JUN 10 10 23 AM '96

June 6, 1996

Office of Preservation Services

Ms. Cynthia D. Simpson  
Deputy Division Chief  
Project Planning Division  
State Highway Administration  
707 North Calvert Street  
P.O. Box 717  
Baltimore, Maryland 21203-0717

RE: Contract No. P 189-201-372  
Access Improvements at the MD 202, MD 214, and Proposed Arena Drive  
Interchanges with I-95/I-495 (Capital Beltway)  
Transportation Improvements for Redskins Stadium  
Prince George's County, Maryland

Dear Ms. Simpson:

Thank you for your recent letters, dated May 23 and 28, 1996, regarding the above-referenced project. We have reviewed the proposed transportation improvements to evaluate their potential effects on historic properties (pursuant to Section 106 of the National Historic Preservation Act of 1966, as amended, and Article 83B §§ 5-617 and 5-618 of the Annotated Code of Maryland).

Based on the information provided in your correspondence, we understand that SHA's portion of the project entails construction of the following items: mainline improvements along the Capital Beltway; existing interchange improvements at MD 202 and MD 214; and a new interchange and extension of Arena Drive from its current terminus to Brightseat Road. The cultural resources investigations conducted by SHA also encompassed areas beyond SHA's area of potential effects for the current undertaking. These areas may be slated for construction of county road improvements, including a proposed new access to the Redskins Stadium located near the current intersection of Brightseat and Sheriff Roads. These additional projects would be constructed by the Redskins/Prince George's County. The present Section 106 coordination only applies to SHA's portion of the transportation access improvements. If the County/Redskins sponsored projects entail any state or federal involvement (funds, licenses, or permits), additional coordination with our office would be necessary to complete the historic preservation review of those undertakings under applicable state or federal law.

Division of Historical and Cultural Programs  
100 Community Place • Crownsville, Maryland 21032 • (410) 514-7631/7636

*The Maryland Department of Housing and Community Development (DHCD) pledges to foster the letter and spirit of the law for achieving equal housing opportunity in Maryland.*



Ms. Cynthia D. Simpson  
June 6, 1996  
Page 2

We have reviewed the following draft report, prepared by KCI Technologies for SHA: *Phase IB Archeological and Historic Architectural Identification Survey and Phase II Archeological Investigations at 18PR505 and 18PR506 for the Proposed Highway Improvements Along I-95 Between US 50 and MD 214, Prince George's County, Maryland*. The report presents detailed documentation of the investigation's goals, methods, results, and recommendations. The draft is generally consistent with the reporting requirements of the *Standards and Guidelines for Archeological Investigations in Maryland* (Shaffer and Cole 1994) and the *Guidelines for Completing the Maryland Inventory of Historic Properties Form: Standing Structures and Non-Archeological Sites* (July 1991). The draft contains useful maps, illustrations, and photographs to document the study results. We agree that the consultant must address SHA's review comments (dated 27 May 1996) on the report, in addition to the items listed in the enclosure to this letter, in the preparation of the final document. We look forward to receiving the final report, when available.

Regarding historic structures, SHA determined that one of four properties identified by the consultant is located within the area of potential effects (APE) for SHA's project: Waring's Grove (PG:72A-4). We concur that Waring's Grove is eligible for the National Register of Historic Places under Criterion C and that the boundaries proposed by SHA, coterminous with the current tax parcel, are appropriate. After careful consideration, we concur with SHA that the proposed undertaking will have *no effect* on Waring's Grove.

While the APE proposed by SHA was very closely drawn and we would have been more comfortable with the larger area developed by the consultant and shown in Figure 11 of the report, we believe SHA's APE is appropriate. The following three properties identified by the consultant and discussed in the report were located just outside SHA's APE: the Joseph Schwalier House (PG:72-30); the Charles Summers House (PG 72-31); and, Ridgely Church (PG:72A-5). For the record, we concur with the consultant's opinion that the first two properties would not meet the National Register criteria for eligibility. Ridgely Church was previously determined eligible for inclusion in the National Register of Historic Places, but as stated above, is located outside the APE.

Inventory forms were prepared for newly identified properties within the study area. Amendment forms were prepared for previously identified properties. The inventory forms for the Joseph Schwalier House and Charles Summer House and amendment sheets for Waring's Grove and Ridgely Church were included with SHA's May 23, 1996 letter. We are returning these four forms for minor revisions. The initial architectural investigations resulted in inventory forms for twenty additional properties. This documentation was included in Volume II of the report, but was not forwarded as unbound forms which could be incorporated in the inventory notebooks at the Maryland Historical Trust Library. We request that SHA submit the individual forms and

Ms. Cynthia D. Simpson  
June 6, 1996  
Page 3

photographs for entry in the Maryland Inventory of Historic Properties, instead of presenting the forms in a separate bound volume to the report, to ensure that this valuable information gets the widest possible circulation and is available for future use.

Concerning archeology, the investigations identified three archeological sites (18PR507, 18PR508, 18PR509) within SHA's APE and two sites (18PR505 and 18PR506) within the broader study area, and the survey attempted to relocate previously recorded site 18PR214. Site 18PR507 includes one biface and one flake. Site 18PR508 consists of a small scatter of historic artifacts (9 items) and one quartz flake. Site 18PR509 represents a small lithic scatter composed of 7 pieces of quartz debitage. We agree that all three sites do not have the potential to provide further important information, given the nature and paucity of the cultural remains. The survey did not yield evidence of site 18PR214 and determined that the site area had been extensively disturbed by grading activities.

SHA conducted Phase II investigations of sites 18PR505 and 18PR506, both of which are located outside SHA's APE in the area slated for construction of the new access from Brightseat/Sheriff Roads to the Redskins Stadium. Site 18PR505 represents a small, low-density lithic scatter (16 items) located on the bank of a wetland adjacent to a small stream. Testing did not produce any diagnostic or other artifact types besides lithic debitage, nor did it identify any features or intact cultural deposits. Site 18PR506 consists of four small lithic scatters situated on a ridge above Cattail Branch and a tributary. Testing generated a limited assemblage consisting primarily of lithic debitage and a few fire cracked rocks, yet yielded no diagnostic materials or evidence of intact features. Recovered artifacts suggest short term use of the site during prehistory for tool manufacture and maintenance. The soil stratigraphy indicates the site has been affected by erosion. Given the sites' limited data and lack of integrity, we agree that 18PR505 and 18PR506 do not have the potential to contribute further important information.

Based on the results of the archeological investigations, we agree with SHA that the following sites do not meet the criteria for eligibility in the National Register of Historic Places: 18PR505, 18PR506, 18PR507, 18PR508, and 18PR509. Further archeological investigation of these sites is not warranted.

We concur with SHA's determination that construction of the proposed SHA transportation improvements will have no effect on historic properties, including archeological sites and historic structures. If you have questions or require additional information, please call Ms. Elizabeth Hannold (for structures) at (410) 514-7636 or me (for archeology) at (410) 514-7631.

Ms. Cynthia D. Simpson  
June 6, 1996  
Page 4

Thank you for your cooperation and assistance.

Sincerely,



Elizabeth J. Cole  
Administrator  
Archeological Services

EJC/EAH  
9602092  
Enclosures

- cc: Dr. Charlie Hall (SHA)
- Ms. Rita Suffness (SHA)
- Ms. Renee Sigel (FHWA)
- Ms. Meg Gaffney-Smith (COE)
- Mr. Will Castleberry (DBED)
- Mr. Michael Dillow (Redskins)
- Mr. Stan Wildesen (PG Co.)
- Mr. W. Dickerson Charlton
- Ms. Pat Williams
- Ms. Gail Rothrock
- Mr. Don Creveling