

**APPENDIX A**

**AGENCY COORDINATION**

**APPENDIX A  
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1	January 23, 1996	Letter from Greiner, Inc. to the Maryland Department of Natural Resources (sample letter to agencies)
2	January 29, 1996	U. S. Fish and Wildlife Service
3	February 26, 1996	Federal Aviation Administration
4	March 20, 1996	BWI Environmental Committee Meeting Minutes
5	April 1, 1996	Letter from Greiner, Inc. to the U. S. Army Corps of Engineers
6	July 12, 1996	U. S. Army Corps of Engineers
7	October 7, 1996	Maryland Department of Natural Resources
8	November 25, 1996	General notice of Draft Environmental Assessment
9	December 10, 1996	Maryland Aviation Administration letter to Maryland Office of Planning
10	December 16, 1996	Maryland Office of Planning
11	January 16, 1997	Maryland Aviation Administration letter to Maryland Department of the Environment on Draft Environmental Assessment
12	January 28, 1997	Maryland Office of Planning (with agency attachments)
13	Not dated	Response to agency comments
14	January 29, 1997	Federal Aviation Administration
15	February 11, 1997	U. S. Army Corps of Engineers/Maryland Aviation Administration - January 30, 1997 Meeting Minutes
16	February 28, 1997	Maryland Department of the Environment/Maryland Aviation Administration - February 19, 1997 Meeting Minutes
17	April 7, 1997	Letter from Greiner, Inc. to U. S. Fish and Wildlife Service
18	April 17, 1997	Maryland Department of Natural Resources/Maryland Aviation Administration - April 7, 1997 Meeting Minutes
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# Greiner

Greiner, Inc.  
2219 York Road, Suite 200  
Timonium, Maryland 21093-3111  
(410) 561-0100  
FAX: (410) 561-1150

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*In reply, please refer to: D100551.10*

January 23, 1996

Dr. Robert Bachman  
Maryland Department of Natural Resources  
Maryland Natural Heritage  
Tawes State Office Building  
580 Taylor Avenue, E-1  
Annapolis, Maryland 21401

Reference: Baltimore/Washington International Airport  
Proposed Development

Dear Dr. Bachman:

Greiner, Inc. has been contracted by the Maryland Aviation Administration (MAA) to verify the presence or absence of any rare, threatened, or endangered species within the area shown on the enclosed exhibit. There are several development projects planned for this portion of the Airport including a Midfield Cargo Terminal, a Parallel Runway 10R-28L, three potential industrial/commercial development parcels, and an Aircraft Rescue and Fire Fighting (ARFF) Station.

There has been prior agency coordination regarding several projects on BWI Airport property, which extends beyond the study area we are concerned with. The only project located in our study area that has been coordinated with your agency is the ARFF Station. The coordination letters found no federally listed RTE species present within the ARFF Station's study area.

From prior agency coordination regarding RTE species, Greiner is already aware of the presence of *Helonias bullata* in the Stony Run watershed. According to this coordination, it is located off of BWI Airport property. Greiner is also aware that any impacts upstream of the *Helonias bullata* will have to be carefully managed so as to avoid impacts from sediment and runoff downstream in the *Helonias bullata* habitat.

We are interested in obtaining any information you may have regarding the presence of any rare, threatened, or endangered species within and adjacent to the areas to be affected by the proposed project.

# Greiner

Dr. Robert Bachman  
January 23, 1996  
Page 2

Should you have any questions regarding this request or need additional information, please contact me at your convenience. We would appreciate your timely consideration of this request and look forward to further coordination with you in the future.

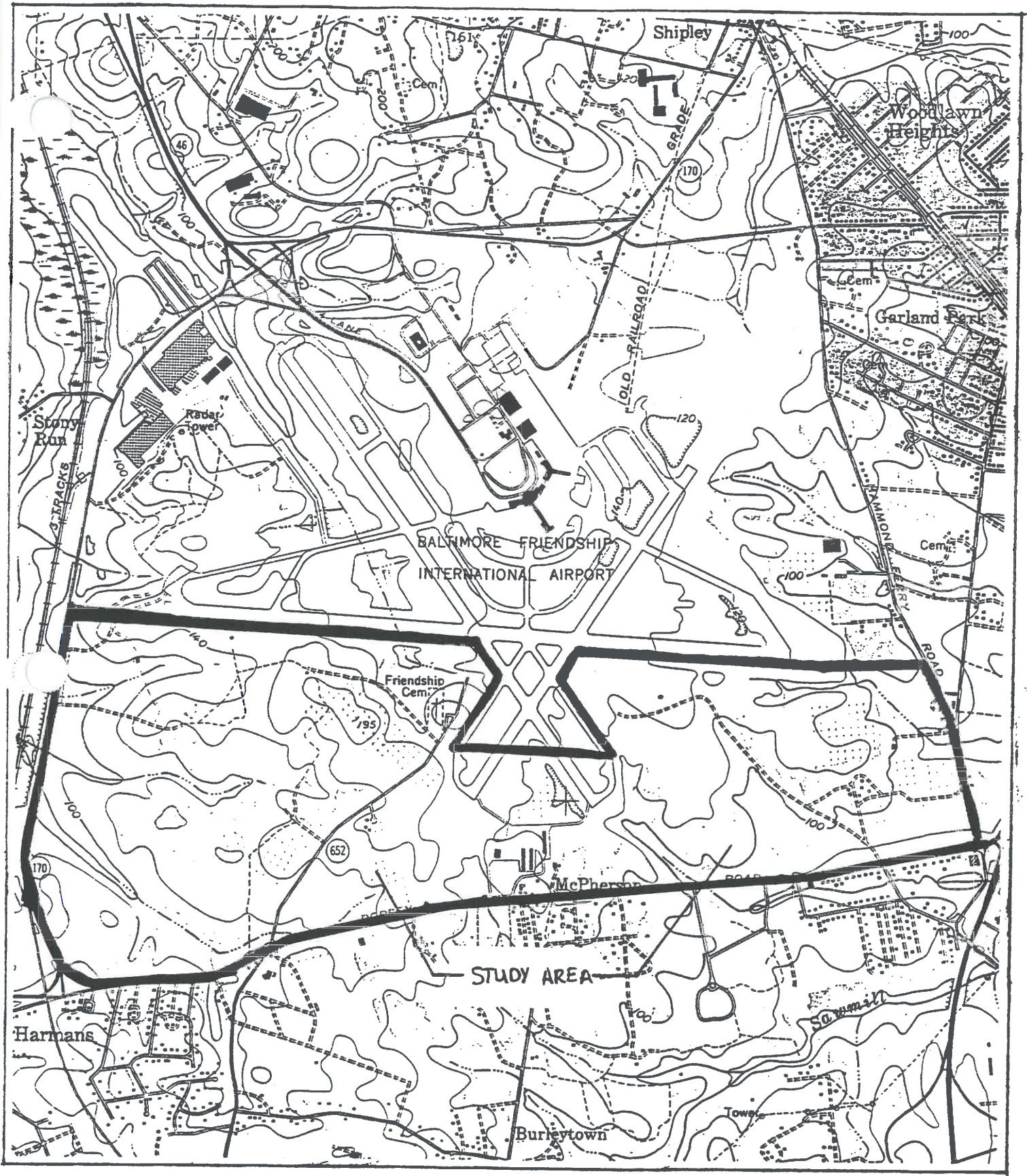
Very truly yours,

GREINER, INC.

Jennifer L.S. Duff  
Environmental Specialist

JLSD:ss

Enclosures



BALTIMORE/WASHINGTON INTERNATIONAL  
AIRPORT  
RELAY QUADRANGLE



# United States Department of the Interior

FISH AND WILDLIFE SERVICE  
Chesapeake Bay Field Office  
177 Admiral Cochrane Drive  
Annapolis, MD 21401

January 29, 1996

Ms. Jennifer L.S. Duff  
Greiner, Inc.  
2219 York Road, Suite 200  
Timonium, MD 21093-3111

Re: Baltimore/Washington International  
Airport Proposed Development  
Anne Arundel County, MD

Dear Ms. Duff:

This responds to your January 23, 1996, 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.).

#### Endangered Species Act Comments

As you are already aware, one Federally threatened species, the swamp pink (*Helonias bullata*), occurs in the Stony Run drain, the western half of the study area, effects of the proposed developments on water quality and silt load may impact the swamp pink and its habitat. Any potential for affecting swamp pink during construction or operation of the proposed facilities should be thoroughly evaluated; if effects are likely, mitigation measures should be developed as a part of your evaluation. You should coordinate your efforts with Kathy McCarthy of the Maryland Natural Heritage Program at (410) 974-2870 and Andy Moser of this office. Mr. Moser can be reached at (410) 573-4537.

This response relates only to threatened and endangered species under our jurisdiction. For information on other rare species, including state-listed species, you should contact the Maryland Natural Heritage Program at (410) 974-2870.

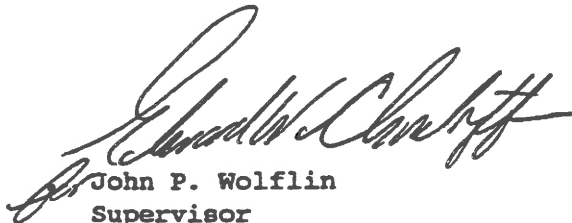
Except for occasional transient individuals, no other Federally listed or proposed endangered or threatened species are known to exist in the project impact area. Therefore, no Biological Assessment or further Section 7 Consultation with the U.S. Fish and Wildlife Service is required. Should project 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 policy 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.

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,

A handwritten signature in cursive script, appearing to read "John P. Wolflin".

John P. Wolflin  
Supervisor  
Chesapeake Bay Field Office



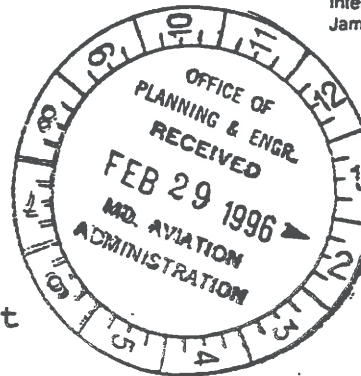


U.S. Department  
of Transportation  
**Federal Aviation  
Administration**

Eastern Region

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**FEB 26 1996**



Mr. Michael C. West  
Associate Administrator  
Office of Planning & Engineering  
Maryland Aviation Administration  
P. O. Box 8766  
Baltimore-Washington Int'l Airport  
Baltimore, Maryland 21240-0766

Dear Mr. West:

This is in response to your letters of November 22, 1995, and January 17, 1996, concerning the development options presented in the Master Plan for the southern half of the airfield at Baltimore/Washington International Airport (BWI). Federal Aviation Administration (FAA) concurrence was requested for your proposed level of environmental documentation under the National Environmental Policy Act (NEPA) given the scenario presented by the proposed development of BWI's southern half of the airfield.

Specifically, the Maryland Aviation Administration (MAA) proposes proceeding now with the planning and environmental evaluations for a new air cargo complex with the understanding that the time is "not ripe" for decision for other proposed projects also to be located within the southern half of the airfield; namely, a new transport runway parallel to 10R-28L, and a new air traffic control tower.

The FAA has reviewed the information presented with your correspondence and concur that although the projects share similar geography, they are separated sufficiently in time, utility, function and degree of project detail, they can be separated without jeopardizing consideration of cumulative effects. MAA may proceed now with documenting the effects of the Midfield Air Cargo Complex in an Environmental Assessment (EA) and document the parallel runway and control tower in an Environmental Impact Statement (EIS) at a later date, after the appropriate analyses have been completed.

The FAA concurs in this approach, provided all potential cumulative impacts of those foreseeable future actions/projects are sufficiently addressed to the level of detail known at the time of environmental review and include an appropriate explanation of why the other projects are not now "ripe for decision" and are remote in time. Be

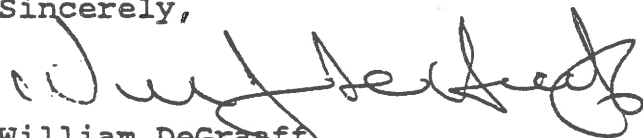
aware that if at any time, the environmental review and resulting analysis indicate that the projects are in any way connected, it will be required that they be included in the initial action.

It should also be noted that MAA's desire to proceed now with an EA for the new Midfield Air Cargo Complex, rather than an EIS, is conditioned upon the environmental review not revealing any "significant" impacts associated with development of the cargo complex that cannot be mitigated to a level sufficient to satisfy the involved permitting agencies. An EIS may be needed if such is the case.

Lastly, it is our understanding that MAA is currently performing a site selection study for the new tower. The site selection report or notification of a technically preferred site has not as yet been received by our Airway Facilities Division. Consideration of potential cumulative impacts of the new tower in the air cargo complex EA must consider all feasible tower locations, if a preferred site is not yet known.

Please keep this office informed of any changes that may affect the above decisions. We look forward to working with your staff in processing the proposed BWI development leading to FAA approval.

Sincerely,



William DeGraaff  
Manager, Planning & Programming Branch

## MINUTES

### BALTIMORE/WASHINGTON INTERNATIONAL AIRPORT ENVIRONMENTAL COMMITTEE MEETING MARCH 20, 1996

#### INTRODUCTION

The Baltimore/Washington International Airport (BWI) Environmental Committee convened at 10:00 a.m. in the Maryland Aviation Administration (MAA) E-1 Holdroom, located on the upper level of the terminal building. See Attachment 1 for the agenda and attendance list. A new member was introduced to the Committee. Mr. Skip Stocknick representing The Air Line Pilots Association.

#### BWI NOISE PROGRAM

Mr. Rudy Rudolph, MAA, Director of Aviation Noise and Abatement, provided the following update about the BWI Noise Program.

- **Stage 3 Operations:** January through December 1995 figures were shown to the Committee. Early 1995, Stage 3 operations remained stable at approximately 50 percent. The second half of the year showed improvement, increasing to 57 percent by December, and 59 percent in January 1996.
- **Runway Mode of Operations:** Fluctuates throughout the year, and is primarily driven by the winds. The goal in BWI's Noise Abatement Plan is 80 percent west operations. West operations affects the least amount of noise sensitive areas. The summer months showed a higher percentage of east operations. This was due to the summer easterly winds.
- **Fleet Noise Trends:** These figures were shown to the Committee. MAA has been tracking fleet noise trends since 1987, with 1987 as the baseline year. The computer program utilized to track these noise trends allows for the breakdown of figures to tenths and hundredths of a decibel, but the public will not detect such small changes. BWI is still below the 1987 baseline level.
- **Monthly Noise Concerns:** This chart, showing the number of noise concerns and their fluctuation throughout the year, was shown to the Committee. The majority of noise concerns are received during the spring and fall months.
- **Noise Concerns per Community:** This chart was shown to the Committee. MAA received a large number of noise concerns from Linthicum and Severn communities. One person accounted for 70 of the 97 Linthicum concerns, and one person accounted for 94 of the 125 Severn concerns.

- **US Airline Progress:** A chart showing the major air carriers progress towards a 100 percent Stage 3 fleet, was shown to the Committee. The Federal Aviation Administration (FAA) has recently reported that most of the major air carriers in the United States have already achieved their 1996 Stage 3 goal. BWI Stage 3 percentages by individual airline's were presented. United's Stage 3 percentage at BWI was back up to 67 percent in January. Their low numbers in late 1995 were a result of a combination of factors. The Boeing strike which delayed delivery of B-777s, and the retirement of DC-10s caused stop-gap equipment substitutions system-wide. The airline on whole is short of equipment.
- United has plans to hush-kit the B-727s that they own; no decision yet on the leased B-727s, or the B727-200s.
- **Phase Out Stage 2 /Phase In Stage 3 Schedule:** The breakdown of the Phase Out/Phase-In Schedule was shown to the Committee. Air carriers have two options, either the phase out of Stage 2 or phase in of Stage 3 aircraft, to meet the compliance dates and the December 31, 1999 deadline to achieve 100 percent Stage 3 fleet. FAA has received requests for waivers for the interim goals. They have not granted nor anticipate granting any waivers as they approach the year 2000.

#### NOISE ASSISTANCE PROGRAM (RIDGEWOOD MOBILE HOME PARK)

Mr. Tony Neubert, MAA, Director of Real Estate provided the following update about the relocation of the Ridgewood Mobile Home Park

There are approximately 143 families presently living in the Park. Before the relocation process can start, MAA must buy a property right (easement) from the owner of the Park. In October 1995, an offer was made to the owner for an easement, which would take the owners right to use the land for residential purposes in the future. The owner will still own the property after the relocation. The property is now zoned "industrial", so the owner can develop the property to it fullest use, after the relocation. To-date MAA has not been able to reach an agreement with the owner. In trying not to delay the relocation process, MAA is initiating condemnation procedures to acquire the acquisition. The case would then go to the Circuit Court of Anne Arundel County and a jury will determine the just compensation to pay the owner. MAA is hopeful of reaching an agreement before the case goes to court.

#### BWI MID-FIELD CARGO COMPLEX

Mr. Lynn Bezilla, MAA, Director of Planning, provided the following update. The past few months, MAA has been evaluating BWI's cargo facility needs. Currently, there is a total of about 300,000 square feet (sf) of cargo space, with only 5,000 sf available for new tenants. Existing cargo buildings A-E were shown to the Committee on an Airport diagram. The BWI Airport Master Plan recommended development of cargo building E, which was constructed in 1990, and also recommended relocating MAA Maintenance for development of future cargo buildings F, G, and H along Elm Road. Access to cargo building F was limited at the proposed Master Plan site, and instead will be constructed across the parking lot from cargo buildings A-E. This project has

been previously discussed with the Committee, and is expected to begin shortly. Taking a closer look at the area along Elm Road, MAA has found there will not be adequate room for additional cargo development due to the International Terminal, an extension of the Baltimore Central Light Rail Line. The Transit Administration has stated they could provide more efficient operations with a dual track transit system, to allow trains to come and go on different tracks. This has taken away from some of the area available. The Master Plan stated once the terminal area was exhausted, the next place to locate future cargo facilities was BWI's southwest quadrant. This is the area south of Runway 10 and west of Runway 33L.

Cargo needs have changed over the past ten years. The air cargo carriers have become integrated freight carriers, using trucks as well as airplanes. Airport facilities now require additional truck parking areas and support facilities, such as for fueling and washing. Cargo carriers have also switched to larger aircraft, requiring more ramp maneuvering areas and more ground support equipment. Thus MAA is planning for two cargo centers, the existing facility north of the terminal which will primarily be used for belly cargo, and the midfield location which will be used for all cargo carriers.

The 20 year forecast calls for four new 60,000 square foot cargo facilities to be located in the Midfield Complex by the year 2015: This involves clearing the area between Runway 10 and the new access road to the Airfield Rescue Firefighting (ARFF) building, which is now in construction, and between Route 170 and the new ARFF building. MAA is proposing to undertake site preparation for the new complex, with development of aircraft ramp, taxiways, parking and structures for two 60,000 sf buildings by 1998-99. Eventually four buildings could be accommodated, along with a truck wash, fueling facility, and other support facilities as required to support cargo needs. The planning is underway with one issue still needing to be resolved. A hill needs to be partially removed, to bring the site down to grade with Runway 10. MAA is looking for alternative sites to stockpile the material. The stockpile site will require additional tree clearing. Site plans for the midfield cargo buildings were shown to the Committee. MAA has started the environmental analysis for the project, in the form of an Environmental Assessment, which will follow the 22 items required to be addressed according to the -- Environmental Protection Agency guidelines. The assessment will focus primarily on tree impacts, and wetland impacts, as well as possible noise impacts. The Environmental Assessment will be completed by August and sent to the Federal Aviation Administration for review. A public hearing is anticipated for June/July this year. The Neighbors Committee will be briefed on the Environmental Assessment about a month before the Public Hearing. Design is expected to start this fall. Completion of the first building is expected by the fall of 1998.

This cargo facility development activities are not a commitment to build. As planning and design progress, an assessment of market conditions will be undertaken. If the market is not there for both of the buildings, MAA may only construct one. Or if the market is not there for one building, construction would be deferred until market conditions warrant.

## FRIENDSHIP CEMETERY

Ms. Barbara Grey, MAA, Division of Planning, provided the following updates on the Friendship Cemetery and the Runways 15R/15L Obstruction Removal.

During construction of the new Firefighting Facility on the airfield, human remains were discovered. Graves were discovered when a foundation trench was being excavated. The construction activity was immediately stopped. Permits were then obtained from the State's Attorney and the Health Department to remove and relocate the remains. A funeral director was hired to perform the necessary work, and the remains were placed into temporary storage. MAA met with the Cemetery Committee and did research with the local churches and the Maryland Hall of Records to try to identify next of kin. A total of ten gravesites were found, two identifiable. One of the remains was found to be "Baby Lee" (no other information known), and one to be "Mary E. Berger". Notices have been placed in three local newspapers for three consecutive weeks, in attempt to locate any next of kin. In lieu of any alternative arrangements by located next of kin, the remains will be reburied at the Friendship Cemetery the first week of April.

When the land for the Airport was bought in 1947, the city of Baltimore relocated most of the graveyards on the Airport. The boundaries of the Friendship Cemetery were shortened and a new boundary fence installed. MAA believed all graves were moved to within the revised confines of the Cemetery. An archaeological survey was conducted prior to construction. This involves digging test pits approximately every ten feet, and nothing was found at that time.

## RUNWAYS 15R/15L OBSTRUCTION REMOVAL

This project involves selective tree cutting for obstruction removal associated with Runways 15R and 15L. This project is continuing and MAA is still in the process of obtaining one permit. The obstruction areas were shown on a drawing. MAA has obtained easements from approximately 16 property owners with about 12 more to do. The property owners have the option to have the trees topped or removed. This project is expected to be advertised in April, and begin in May.

## BWI CONSTRUCTION STATUS

Mr. Michael West, MAA, Associate Administrator, Office of Planning and Engineering, provided an update of construction activity at BWI.

- **Airfield Firefighting Facility:** This project is currently under construction. This will be a new station that will consolidate all personnel and the airfield response vehicles and ambulances that are now in three different locations. The new facility will have several vehicle bays for equipment and will be pointed towards the airfield. These vehicles could respond within a couple minutes to any incident on the airfield. The facility will have dormitory and kitchen facilities for the firefighters. This project is expected to be completed by the end of the calendar year.
- **Garage Expansion:** This project will add two more floors to the existing structure and will build an extension behind the existing garage. This project will double the amount of parking

spaces at BWI. Special features include: an exclusive ramp for rental cars on the third floor; a new entrance ramp on the fifth level; the height will be increased for the two additional levels to accommodate handicap vans; a fourth pedestrian bridge to the terminal will be constructed; and, revenue collection booths will be added to the fifth level. Construction is expected to begin soon and will take about 20 months to complete. The garage will remain open during construction.

- **International Terminal:** A rendering of the International Terminal was shown to the Committee. The building contract for this project was awarded this past fall. The foundation work is just about completed and the structural steel is starting to go up. The project is expected to be complete by June 1997.

- **Roadway Construction/Parking:** Most of this road work, on the upper level of the terminal building and on Elkridge Landing Road will be completed by the end of the calendar year. Communities and businesses will be notified of changes in traffic patterns. Roadway construction activities for the terminal, Elm Road, and Elkridge Landing Road, were shown to the Committee on a drawing. New traffic patterns should begin in May. By this time the road connecting Elkridge Landing Road to the Air Cargo intersection will be complete. The new Elkridge parking lots are almost complete and have been used in emergency situations such as the Pope's visit, Thanksgiving and Christmas holidays.

With no further business to discuss, the BWI Environmental Committee meeting adjourned at 10:00 a.m.

---

Kate Pemberton, Secretary  
BWI Environmental Committee

NOTE: Meeting handouts are available upon request by calling the BWI Noise and Abatement Office at 410-859-7021.

# Greiner

Greiner, Inc.  
2219 York Road, Suite 200  
Timonium, Maryland 21093-3111  
(410) 561-0100  
FAX: (410) 561-1150

*In reply, please refer to: D100551.10*

April 1, 1996

Mr. Vance Hobbs  
Chief, Special Projects Section  
Department of the Army  
Baltimore District, U.S. Army Corps of Engineers  
Post Office Box 1715  
Baltimore, Maryland 21203-1715

Reference: Signal Branch Wetland  
Baltimore/Washington International Airport  
Jurisdictional Determination

Dear Mr. Hobbs:

We are writing to request a jurisdictional determination for the Signal Branch wetland delineation, which was completed in January 1996.

The airport is owned by : The Maryland Aviation Administration  
Post Office Box 8766  
Baltimore/Washington International Airport  
Maryland, 21240-0766

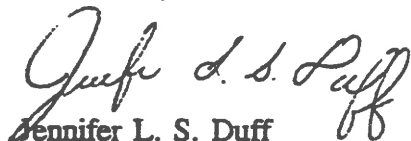
Contact person: Barbara Grey  
410-859-7025

The Wetland Delineation Report is enclosed for your review. The report's exhibits include an 8.5 by 11 inch format Site Vicinity Map, a 1"=500' Wetland Delineation Map (including streams), a National Wetlands Inventory Map, and a Soil Survey Map of the study area.

Please ask the regulator to contact me at (410) 561-0100 regarding when they will be able to perform the jurisdictional determination. Thank you for your review of this project.

Very truly yours,

GREINER, INC.



Jennifer L. S. Duff  
Environmental Specialist

JLSD:ss

Enclosures





DEPARTMENT OF THE ARMY  
BALTIMORE DISTRICT, CORPS OF ENGINEERS  
P.O. BOX 1715  
BALTIMORE, MARYLAND 21203-1715

REPLY TO  
ATTENTION OF:

Operations Division

Subject: CENAB-OP-RX(MAA/BWI AIRPORT/AIR CARGO)96-00447-11

Ms. Jennifer Duff  
Greiner, Inc.  
2219 York Road, Suite 200  
Timonium, Maryland 21093-3111

Dear Ms. Duff:

I am replying to your request dated June 28, 1996, for a jurisdictional determination and verification of the delineation of waters of the United States, including wetlands, in the vicinity of the proposed Midfield Cargo Complex at the Baltimore Washington International Airport in Anne Arundel County, Maryland.

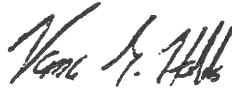
A field inspection was conducted on June 20, 1996 by Mr. Vance Hobbs of this office. This inspection verified that the delineation of Waters of the United States, including jurisdictional wetlands, for Signal Branch, Hawkins Branch, and the western segment of Clark Branch is accurate as shown on the modified plans submitted to this office on June 28, 1996. This verification is valid for five years from the date of this letter. Kitten Branch, Fork Branch, Stony Run, and the eastern segment of Clark Branch were not included in this field inspection and therefore are not a part of this determination.

Additionally, Mr. Hobbs determined during the field inspection that the wetland systems at Clark Branch and Hawkins Branch are high quality and contain potential swamp pink (*Helonias bullata*) habitat. Although no individuals of this endangered species were encountered during the site visit, a formal inventory may be requested should either of these areas be slated for impact. For these reasons, this office recommends avoidance of these two systems.

You are reminded that any grading or filling of Waters of the United States, including jurisdictional wetlands, is subject to Department of the Army authorization. In addition, the Interstate Land Sales Full Disclosure Act may require that prospective buyers be made aware, by the seller, of the Federal regulatory authority over any Waters of the United States, including jurisdictional wetlands, being purchased.

If you have any questions concerning this matter please call  
Ms. Jennifer Moyer at (410) 962-5679.

Sincerely,



Keith A. Harris  
Chief, Special Projects Section

Copy furnished:

MDE  
FWS, Mr. Andy Moser



Parris N. Glendening  
Governor

Maryland Department of Natural Resources  
Forest, Wildlife and Heritage Service  
Tawes State Office Building  
Annapolis, Maryland 21401

John R. Griffin  
Secretary

Carolyn D. Davis  
Deputy Secretary

October 7, 1996

URS Greiner  
Attn : Jennifer L.S. Duff  
2219 York Road, Suite 200  
Timonium, MD 21093-0100

RE: Baltimore/Washington International Airport Proposed  
Development, #D100551.10, Anne Arundel County

Dear Ms. Duff:

I apologize for the delay in this response. I could not locate your original correspondence to us, so I expedited the second copy you faxed through the process.

Wetlands within the area outlined on your inquiry may provide habitat for the rare species listed below.

<u>Common Name</u>	<u>Scientific Name</u>	<u>State Status</u>
Giant Cane	<i>Arundinaria gigantea</i>	Threatened
Swamp Pink	<i>Helonias bullata</i>	Endangered (also Federal Threatened)
Bog Fern	<i>Thelypteris simulata</i>	Threatened

These species occur within the vicinity of the airport, and, to our knowledge, the airport property has never been surveyed systematically for rare species. We recommend that forested and shrub-dominated wetlands in the vicinity of the proposed projects be surveyed for these species so that provisions for their protection could be incorporated early in the planning process if rare species are present. This avoids unnecessary delays if rare species are discovered during permit reviews.

Sincerely,

Michael E. Slattery  
Associate Director, Wildlife  
& Heritage Division

ER #96.1539.aa



# Maryland Aviation Administration

"Striving to do our best in everything we do - dedicated to providing outstanding airport facilities and services"

Theodore E. Mathison Executive Director

November 25, 1996

To Whom It May Concern:

The Maryland Aviation Administration has developed this Draft Environmental Assessment (EA) for the proposed Midfield Air Cargo Complex at Baltimore/Washington International Airport. Beginning on November 16, 1996, the Draft EA is available for review at the local area libraries. A public hearing will be held on December 17, 1996 from 7 p.m. to 9 p.m. in the Glen Burnie High School Auditorium. A public notice containing this information will appear in area newspapers on either November 15 or 16, 1996.

The public hearing will start at 7 p.m. and adjourn at 9 p.m. The hearing will start with a brief project overview, followed by the receipt of testimony from registered speakers. Individuals, elected officials and representatives of organizations who wish to speak, must register by:

- 1) submitting a written request to Mr. Lynn S. Bezilla, Director of Planning, Maryland Aviation Administration, P.O. Box 8766, Baltimore/Washington International Airport, MD 21240;
- 2) calling my office at (410) 859-7090; or 3) attending the hearing and signing up with the receptionist to speak following those speakers on the previously established list. A time limitation of 5 minutes will be allotted to each speaker.

Displays and maps depicting the proposed project, alternatives considered, and the environmental analysis will be available for public review between 6:30 p.m. and 9 p.m. Airport representatives will be available to discuss key components of the project. Brochures describing the project and forms for written comments will be available at the hearing reception desk.

Written statements, including comment cards, and other exhibits in lieu of, or in addition to, an oral presentation at the hearing may be submitted to Mr. Bezilla at the above address until 5 p.m. on January 7, 1997 in order to be included in the public hearing record. Comments included in the public hearing record will be summarized and addressed in the final environmental document. The final document will be submitted to the Federal Aviation Administration for approval.

Should you have any questions about the proposed Midfield Air Cargo Complex, the EA or the public hearing process, please do not hesitate to call my office at the number listed above.

Sincerely,

Barbara Grey, Manager  
Environmental Planning

P.O. Box 8766, BWI Airport, Maryland 21240-0766 (410) 859-7100

FAX: (410) 850-4729 — TDD for the hearing impaired: (410) 859-7227

The Maryland Aviation Administration is an agency of the Maryland Department of Transportation



# Maryland Aviation Administration

*"Striving to do our best in everything we do - dedicated to providing outstanding airport facilities and services"*

Theodore E. Mathison      Executive Director

December 10, 1996

Mr. William Carroll, Manager  
Planning and Project Review  
Maryland Office of Planning  
301 W. Preston Street, Room 1104  
Baltimore MD 21201

The Maryland Aviation Administration (MAA) is proposing to develop a Midfield Cargo Complex at Baltimore/Washington International Airport (BWI). Enclosed for your use in the State Clearinghouse Process are nine copies of the Draft Environmental Assessment (EA) developed for this project.

The air cargo sector of the aviation industry provides many services in an expanding global marketplace: scheduled and charter freight, express and small package transport, and mail service. As the air cargo industry has evolved during the past twenty years, air cargo facilities and services have become an integral part of the development of BWI Airport. The 20-year Master Plan prepared in 1987 for BWI identified the need for additional air cargo facilities to support the expected growth in demand through the planning period. In light of the expected increase in air freight activity, the MAA recently completed a more detailed study of BWI's air cargo facility needs. The study concluded that additional air cargo facilities should be developed to accommodate expected growth through the planning period. The facilities are envisioned as consisting up to four 60,000 square-foot cargo buildings, with both warehouse and office space, along with associated ramp, taxiway, auto and truck parking, and other support facilities as well as safe and convenient highway access. The Preferred Alternative locates this facility south of the existing east/west runway, Runway 10/28, in the western half of the airfield. If the EA is approved, another evaluation of current and projected needs will be conducted prior to construction to determine the extent of the proposed cargo complex development needed at this time. The first building(s) and associated infrastructure could be completed as early as Fall 1998. Funding for the Midfield Cargo Complex is expected to be a combination of federal, State and private funds.

The draft EA contains a detailed evaluation and comparison between the potential environmental impacts of the "No Build" alternative and the four "Build" alternatives which were considered. The Preferred Alternative results in a negligible increase (0.2 to 0.5 Ldn dBA) in noise, less than two acres of impacted wetlands, and approximately 116 acres of impacted forest.

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Mr. William Carroll  
December 10, 1996  
Page Two

Approximately eight acres of the preferred site has potential for archaeological resources, which will be surveyed and, documented prior to construction. The Preferred Alternative is best qualified to meet the project purpose and need, while costing approximately \$10 million less than the other build alternatives and its environmental impacts can be mitigated. All required permits will be obtained prior to construction and appropriate mitigation measures implemented.

A public hearing for this project is rescheduled for December 17, 1996. Details are in the letter attached to each EA. The official close of the public review process is January 7, 1997 at 5 p.m. The MAA has already coordinated directly with the State and federal agencies affected by this project during the scoping process, so any unexpected comments, controversy or conflicts are not anticipated. If I may be of any service in this review, please let me know. I can be contacted at 859-7090. Your assistance is greatly appreciated.

Sincerely,



Barbara Grey, Manager  
Environmental Services

BEG:jar

Enclosures



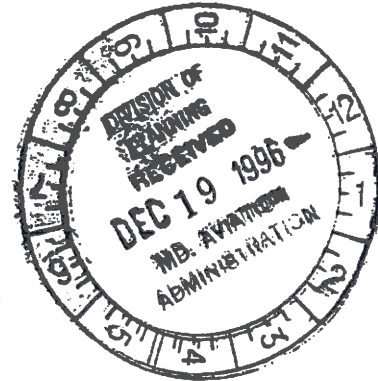
MARYLAND Office of Planning

Parris N. Glendening  
Governor

Ronald M. Kreitner  
Director

December 16, 1996

Ms. Barbara Grey  
Manager, Environmental Planning  
Maryland Aviation Administration  
Maryland Department of Transportation  
P.O. Box 8766  
BWI Airport, MD 21240-0766



STATE CLEARINGHOUSE REVIEW PROCESS

**Reply Due Date:** January 3, 1997  
**State Application Identifier:** MD961211-1111  
**Project Description:** Draft Environmental Assessment for the Proposed Expansion of Air Cargo Facilities: for expanded domestic & international cargo  
**State Clearinghouse Contact:** Bob Rosenbush

Dear Ms. Grey:

This letter acknowledges receipt of the referenced project. We have initiated the Maryland Intergovernmental Review and Coordination Process (MIRC) as of the date of this letter. You can expect to receive review comments and recommendations on or before the reply date indicated. Please place the State Application Identifier Number on all documents and correspondence regarding this project.

This project has been sent to the following agencies or jurisdictions for comment: The Maryland Departments of Business and Economic Development, Environment, Housing and Community Development including the Maryland Historical Trust, Natural Resources; Baltimore Metropolitan Council, Anne Arundel County; and the Maryland Office of Planning.

Your participation in the MIRC process helps to ensure that this project will be consistent with the plans, programs, and objectives of State agencies and local governments. Issues resolved through this process enhance the opportunities for project funding and minimize delays during project implementation.

If you need assistance or have questions concerning this review, please contact the staff person noted above. Thank you for your cooperation.

Sincerely,

William G. Carroll  
Manager, Plan and Project Review

WGC:BR:cp



# Maryland Aviation Administration

*"Striving to do our best in everything we do - dedicated to providing outstanding airport facilities and services"*

Theodore E. Mathison Executive Director

January 16, 1997

Ms. Judy Cole  
MDE Water Management,  
Wetlands and Waterways  
Goldstein Office Building  
200 Duke Street-2700  
Prince Frederick MD 20678

Dear Ms. Cole:

The Maryland Aviation Administration (MAA) is proposing to develop a Midfield Cargo Complex at Baltimore/Washington International (BWI) Airport. The Draft Environmental Assessment (EA) for this project has been distributed to State and local agencies through the State Clearinghouse process by the Department of State Planning. You may or may not have seen a copy of the EA as part of the Clearinghouse review process, so I am sending you your own copy of the Draft EA in anticipation of an upcoming preapplication meeting with Jennifer Moyer of the U.S. Army Corps and you.

The air cargo sector of the aviation industry provides many services in an expanding global marketplace: scheduled and charter freight, express and small package transport, and mail service. As the air cargo industry has evolved during the past twenty years, air cargo facilities and services have become an integral part of the development of BWI Airport. The 20-year Master Plan prepared in 1987 for Baltimore/Washington International Airport identified the need for additional air cargo facilities to support the expected growth in demand through the planning period. In light of the expected increase in air freight activity, the MAA recently completed a more detailed study of BWI's air cargo facility needs. The study concluded that additional air cargo facilities should be developed to accommodate expected growth through the planning period. The facilities are envisioned as consisting up to four 60,000 square-foot cargo buildings, with both warehouse and office space, along with associated ramp, taxiway, auto and truck parking, and other support facilities as well as safe and convenient highway access. The Preferred Alternative locates this facility south of the existing east/west runway, Runway 10/28, in the western half of the airfield. If the EA is approved, another evaluation of current and projected needs will be conducted prior to construction to determine what extent of the full proposed cargo complex development is needed at this time. The first building(s) and associated infrastructure could be completed as early as Fall 1998. Funding for the Midfield Cargo Complex is expected to be a combination of federal, State and private funds.

P.O. Box 8766, BWI Airport, Maryland 21240-0766 (410) 859-7100  
FAX: (410) 850-4729 — TDD for the hearing impaired: (410) 859-7227

The Maryland Aviation Administration is an agency of the Maryland Department of Transportation



Ms. Judy Cole  
January 16, 1997  
Page Two

The draft Environmental Assessment (EA) contains a detailed evaluation and comparison between the potential environmental impacts of the "No Build" alternative and the four "Build" alternatives which were considered. The Preferred Alternative results in a negligible increase (0.2 to 0.5 Ldn dBA) in noise; the grading of Signal Branch, impacting 3.8 acres of floodplain, 1.6 acres of wetlands, and approximately 0.2 acre of wetlands buffer; and approximately 116.3 acres of impacted forest and 97.3 acres of mowed grassland. Approximately 11 acres of the proposed site has potential for archaeological resources and is currently being surveyed. Should the survey result in any archaeological finds, they will be treated in accordance with applicable state and federal requirements.

A large portion of these impacts are the result of stockpiling excess material generated by earthwork. On-Airport stockpile locations were selected to reduce hauling costs, and were modified to minimize overall impacts to floodplains, wetlands, and trees while complying with FAA obstruction clearance requirements. If possible, additional reduction of total land disturbed by the stockpiles will be achieved in final design. All required permits will be obtained prior to construction and appropriate mitigation measures implemented.


Should you have any comments regarding the enclosed EA, I would appreciate it if you could fax them to me at (410) 859-5440. I have also enclosed a copy of the Wetlands Management Plan for BWI Airport. This Plan identifies wetlands on the airfield property for the purposes of identification in planning and maintenance processes. Jurisdictional Determinations have not been made for most of the wetlands identified and probably would not be unless a potential impact to a specific wetland were identified. Although no process or timetable mandates it, if you have any comments on this document, I would appreciate them as well.

URS Greiner, our planning and design consultant for the Midfield Cargo project is in the process of contacting you to set up a preapplication meeting with you and Jennifer Moyer, with the U.S. Army Corps, on or shortly after January 28, 1997. I hope you are able to meet with us then. If I may be of any assistance in this review, please let me know. I can be contacted at 859-7090. Unfortunately, our current phone system will not allow me to call you at the 414 exchange at your new office, so I have had to rely on URS Greiner to contact you, but you

Ms. Judy Cole  
January 16, 1997  
Page Three

should be able to reach me. We will be installing an expanded phone system in the near future. Your assistance is greatly appreciated.

Sincerely,

  
Barbara Grey, Manager  
Environmental Programs

BEG:jar

cc: Watt Bowie  
Ted Hogan  
Veronica Piskor  
Wayne Schuster



## MARYLAND Office of Planning

Parris N. Glendening  
Governor

Ronald M. Kreibier  
Director

January 28, 1997

Ms. Barbara Grey  
Manager, Environmental Planning  
Maryland Aviation Administration  
Maryland Department of Transportation  
P.O. Box 8766  
BWI Airport, MD 21240-0766

### REVIEW AND RECOMMENDATION

State Application Identifier: MD961211-1111  
Description: Draft Environmental Assessment For The Proposed Expansion Of Air Cargo Facilities: For Expanded Domestic & International Cargo  
Applicant: Maryland Department of Transportation; Maryland Aviation Administration  
Location: Anne Arundel County  
Approving Authority: United States Department of Transportation  
Recommendation: Endorsement With Qualifying Comment(s) and Contingent Upon Certain Action(s)

Dear Ms. Grey:

In accordance with Presidential Executive Order 12372 and Code of Maryland Regulation 14.24.04, the State Clearinghouse has coordinated the intergovernmental review of the referenced project. This letter with attachments, constitutes the State process review and recommendation based upon comments received to date. This recommendation is valid for a period of three years from the date of this letter.

Review comments were requested from the Maryland Departments of Business and Economic Development, the Environment, Housing and Community Development including the Maryland Historical Trust, Natural Resources and the Baltimore Metropolitan Council; Anne Arundel County; and the Maryland Office of Planning. As of this date, the Maryland Department of Business and Economic Development has not submitted comments. This endorsement is contingent upon the applicant considering and addressing any problems or conditions that may be identified by their review. Any comments received will be forwarded. The Baltimore Metropolitan Council had no comment.

The Maryland Departments of the Environment and Natural Resources found this project to be generally consistent with their plans, programs, and objectives, but included certain qualifying comments summarized below and discussed in the attached comments.

The Maryland Department of Housing and Community Development including the Maryland Historical Trust; Anne Arundel County; and the Maryland Office of Planning stated that their findings of consistency are contingent upon the applicant taking the actions summarized below and discussed in the attached comments.

The Maryland Historical Trust is awaiting the results of several archeological investigations sponsored by the Applicant.

The Department of the Environment, in their attached letter, addressed issues relating to solid waste and the impact and mitigation of increased noise at the Airport.

The Department of Natural Resources supported comprehensive watershed management principles and its suggested use on a project.

301 West Preston Street • Baltimore, Maryland 21201-2365  
State Clearinghouse: (410) 767-4490 Fax: 767-4480



Ms. Barbara Grey

January 28, 1997

pg 2

Anne Arundel County expressed the need for environmentally-sensitive site design. The County reviewer invited the Applicant's project manager to continue to discuss the project.

This Office suggests that the Signal Branch and the associated flood plain be protected in the event that Alternative Four is chosen as the project site.

Any statement of consideration given to the comments should be submitted to the approving authority, with a copy to the State Clearinghouse. Additionally, the State Application Identifier Number must be placed on any correspondence pertaining to this project. The State Clearinghouse must be kept informed if the recommendation cannot be accommodated by the approving authority.

**Summary of Comments:**

\* the archeological investigations sponsored by the Applicant should be completed and forwarded to the Maryland Historical Trust.

\* the Final Environmental Assessment should address "single event analysis" and mitigation options as related to the noise impacts.

\* the Applicant should identify the closest operating landfill with a current refusal disposal permit and substitute that facility for the Annapolis Sanitary Landfill in the Final Environmental Assessment.

\* before a preferred alternative is selected, the layout for Alternatives 1,3, and 4 should be redrawn. The objective of the changed layouts is to minimize potential impacts to wetlands, streams, and woodlands. The Final Environmental Assessment should mention the past water quality problems experienced in the Sawmill Creek Watershed drainage area. The Final E.A. should answer how past water quality problems will not be repeated if Alternative 2 is chosen as the preferred alternative. The Final E.A. should state what construction materials will be stockpiled in the area between Hawkins and Clack Branches; how long the construction materials will remain there; and what protective measures will be used to contain the stockpile?


\* the Final Environmental Assessment should identify the three receiving streams on the site as Use I waterways (not Use IV Trout Waters and/or Public Water Supply). The Applicant should use comprehensive watershed management principles in the completion of the Final E.A. The cumulative impact of treatment of wetlands, stream channels, forests and riparian corridors should be treated as a whole (not as separated, unrelated landscape elements). The Final E.A. should reflect a balanced discussion about the most appropriate locations for wetlands mitigation activities.

\* if Alternative 4 is chosen as the preferred alternative in the Final E.A., then a revised layout for the project should avoid filling of the Signal Branch and the paving or grading of its associated flood plain.

Ms. Barbara Grey  
January 28, 1997  
Page 3

Please remember, you must comply with all applicable state and local laws and regulations. If you have any questions about the comments contained in this letter or how to proceed; please contact the State Clearinghouse at (410) 767-4490. Also please complete the attached form and return it to the State Clearinghouse as soon as the status of the project is known. Any substitutions of this form must include the State Application Identifier Number. This will ensure that our files are complete.

We appreciate your attention to the intergovernmental review process and look forward to your continued cooperation.

Sincerely,  
  
William C. Carroll  
Manager, Plan and Project Review

WGC:BR:mds  
Enclosures

(\* indicates with attachments)

- cc: DBED - Roger Drechsler
- \*DHCD - Sue Hartman
- BMC - Jack Anderson
- \*MDOT - Henry Kay

- \*MDE - Steve Bisber
- \*DNR - Ray Dintzman
- \*ANAR - Robert Coffey

- \*OPC - Mary Abrams
- \*OPC - Chris Wells
- OPL - Bill Carroll

301 West Preston Street • Baltimore, Maryland 21201-2965  
State Clearinghouse: (410) 767-4490 Fax: 767-4480



William G. Carroll  
 Manager, Plan and Project Review  
 Maryland Office of Planning  
 301 West Preston Street, Room 1104  
 Baltimore, Maryland 21201-2365

State Application Identifier:	MD961211-1111	Clearinghouse Contact Person:	Bob Rosenbush
Location:	ANAR	Clearinghouse Telephone:	(410) 767-4490
Applicant:	Maryland Department of Transportation Maryland Aviation Administration		
Description:	Draft Environmental Assessment for the Proposed Expansion of Air Cargo Facilities for expanded domestic & international cargo		

Based on a Review of the Information Provided, We Have  Checked the Appropriate Determination Below

**CONSISTENT RESPONSES - FOR USE BY STATE AGENCIES ONLY**

C1	It is consistent with our plans, programs, and objectives.
C2	It is consistent with the policies contained in Executive Order <u>01.01.1992.27</u> (Maryland Economic Growth, Resource Protection, and Planning Act of 1992) and our plans, programs, and objectives.
C3	(MHT ONLY) It has been determined that the project will have "no effect" on historic properties and that the federal and/or state historic preservation requirements have been met.
C4	(DNR ONLY) It has been determined that this project is in the Coastal Zone and is not inconsistent with the Maryland Coastal Zone Management Program.

**CONSISTENT RESPONSES - FOR USE BY COUNTY & LOCAL AGENCIES ONLY**

C5	It is consistent with our plans, programs, and objectives.
C6	It is consistent with the Economic Growth, Resource Protection, and Planning Visions (Planning Act of 1992) and our plans, programs, and objectives.

**OTHER RESPONSES - FOR USE BY ALL AGENCIES**

R1	GENERALLY CONSISTENT WITH QUALIFYING COMMENTS: It is generally consistent with our plans, programs and objectives, <u>but</u> the attached qualifying comment is submitted for consideration.
<input checked="" type="checkbox"/> R2	CONTINGENT UPON CERTAIN ACTIONS: It is generally consistent with our plans, programs and objectives <u>contingent upon</u> certain actions being taken as noted in the attached comment.
R3	NOT CONSISTENT: It raises problems concerning compatibility with our plans, programs, objectives, or Planning Act visions/policies; or it may duplicate existing program activities, as indicated in the attached comment. If a meeting with the applicant is requested, please check here. <input type="checkbox"/>
R4	ADDITIONAL INFORMATION REQUESTED: Additional information is required to complete the review. The information needed is identified below. If an extension of the review period is requested, please check here. <input type="checkbox"/>

Attach additional comments if necessary OR use the spaces below for brief comments.

*MHT sends the results of archeological investigations sponsored by MHT, as FAA Complies with Section 106 of NHPA*

Name: Elizabeth Harnock  
 Organization: DHCD/MHT  
 Address: 100 Community Place  
Crownsville, MD

Signature: Elizabeth Harnock  
 Phone: 410, 514-7636  
 Date Completed: 1/6/97

Check here if additional comments attached.

William G. Carroll  
 Manager, Plan and Project Review  
 Maryland Office of Planning  
 301 West Preston Street, Room 1104  
 Baltimore, Maryland 21201-2365

<b>State Application Identifier:</b>	MD981211-1111	<b>Clearinghouse Contact Person:</b>	Bob Rosenbush
<b>Location:</b>	ANAR	<b>Clearinghouse Telephone:</b>	(410) 767-4490
<b>Applicant:</b>	Maryland Department of Transportation Maryland Aviation Administration		
<b>Description:</b>	Draft Environmental Assessment for the Proposed Expansion of Air Cargo Facilities for expanded domestic & international cargo		

Based on a Review of the Information Provided. We Have  Checked the Appropriate Determination Below

**CONSISTENT RESPONSES - FOR USE BY STATE AGENCIES ONLY**

C1	It is consistent with our plans, programs, and objectives.
C2	It is consistent with the policies contained in Executive Order <u>01.01.1992.27</u> (Maryland Economic Growth, Resource Protection, and Planning Act of 1992) and our plans, programs, and objectives.
C3	(MHT ONLY) It has been determined that the project will have "no effect" on historic properties and that the federal and/or state historic preservation requirements have been met.
C4	(DNR ONLY) It has been determined that this project is in the Coastal Zone and is not inconsistent with the Maryland Coastal Zone Management Program.

**CONSISTENT RESPONSES - FOR USE BY COUNTY & LOCAL AGENCIES ONLY**

C5	It is consistent with our plans, programs, and objectives.
C6	It is consistent with the Economic Growth, Resource Protection, and Planning Visions (Planning Act of 1992) and our plans, programs, and objectives.

**OTHER RESPONSES - FOR USE BY ALL AGENCIES**

<input checked="" type="checkbox"/>	R1	<b>GENERALLY CONSISTENT WITH QUALIFYING COMMENTS:</b> It is generally consistent with our plans, programs and objectives, but the attached qualifying comment is submitted for consideration.
<input type="checkbox"/>	R2	<b>CONTINGENT UPON CERTAIN ACTIONS:</b> It is generally consistent with our plans, programs and objectives contingent upon certain actions being taken as noted in the attached comment.
<input type="checkbox"/>	R3	<b>NOT CONSISTENT:</b> It raises problems concerning compatibility with our plans, programs, objectives, or Planning Act visions/policies; or it may duplicate existing program activities, as indicated in the attached comment. If a meeting with the applicant is requested, please check here. <input type="checkbox"/>
<input type="checkbox"/>	R4	<b>ADDITIONAL INFORMATION REQUESTED:</b> Additional information is required to complete the review. The information needed is identified below. If an extension of the review period is requested, please check here. <input type="checkbox"/>

Attach additional comments if necessary OR use the spaces below for brief comments.

Name: \_\_\_\_\_  
 Organization: \_\_\_\_\_  
 Address: Steve Bieber  
 TARSA/IDE  
 2300 Broening Highway  
 Baltimore MD 21226  
 (410) 631-3656

RECEIVED

JAN 22 1997

MARYLAND OFFICE OF PLANNING STATE CLEARINGHOUSE

Signature: Steve Bieber  
 Phone: \_\_\_\_\_  
 Date Completed: 01/21/97

Check here if additional comments attached.

**State Application Identifier: MD961211-1111**

**Comments from the Water Management Administration:**

This project is consistent with our plans, programs, and objectives.

**Comments from the Air and Radiation Management Administration:**

This project is consistent with our plans, programs, and objectives.

**Comments from the Waste Management Administration:**

Comments attached.

**Comments from the Technical and Regulatory Services Administration:**

- The draft environmental assessment does not address disturbance caused by additional cargo flights generated by the increased cargo capacity planned for BWI (based on the statement on page IV-7 that nighttime departures are projected to increase from 30 to 36 operations). There is no single event analysis in the draft EA, even though single events may cause greater disruption than the day-night average sound level (Ldn). The EA should address potential awakening since more cargo flights occur at night and some cargo carriers use older, noisier airplanes than the commercial carriers due. There should be a discussion of mitigation options, especially for nighttime cargo operations.
- The issue of noise should be raised during public participation.



JAN 23 11 21 AM '97 410 633 3440 1.0 10

## WASTE MANAGEMENT RESPONSE TO CLEARINGHOUSE PROJECTS AND SECRETARY'S REFERRAL DOCUMENTS

**Project Review SAI #/Location:** MD 96 1211-1111 Anne Arundel County

**Received in WAS:** 1/7/97

**Due Date to OSPP:** 1/13/97

**Date Sent to OSPP:** 1/10/97

**Referral from Secretary:**

It is generally consistent with our plans, programs, and objectives but the attached qualifying comments are submitted for consideration.

In Section IV Environmental Consequences on page 38 and again on page 39 the document states that solid wastes generated from construction and demolition will be taken to the closest operating landfill, which is stated as the Annapolis Sanitary Landfill. The Annapolis Sanitary Landfill does not have a current refuse disposal permit from the Waste Management Administration. Solid waste, including construction, demolition and land clearing debris, which may be generated from the subject project, must be properly disposed of at a permitted solid waste acceptance facility or recycled if possible. Contact the Solid Waste Program at (410) 631-3318 for additional information.

Above ground or underground petroleum storage tanks which may be utilized must be installed and maintained in accordance with applicable State and federal laws and regulations. Contact the Oil Control Program at (410) 631-3442 for additional information.

MDE requests that efforts be made to prevent contamination of the surface and groundwaters of the State of Maryland during the proposed construction activities for the expansion of the air cargo facilities at the Baltimore/Washington International Airport. In the event that spills or other releases of petroleum or hazardous materials occur from the proposed operations which may impact State waters, MDE request prompt notification at (410) 974-3551.

**RETURN YOUR COMPLETED RESPONSE FORM TO:**



William G. Carroll  
 Manager, Plan and Project Review  
 Maryland Office of Planning  
 301 West Preston Street, Room 1104  
 Baltimore, Maryland 21201-2365

State Application Identifier: Location:	MD961211-1111 ANAR	Clearinghouse Contact Person: Clearinghouse Telephone:	Bob Rosentush (410) 767-4490
Applicant:	Maryland Department of Transportation Maryland Aviation Administration		
Description:	Draft Environmental Assessment for the Proposed Expansion of Air Cargo Facilities for expanded domestic & international cargo		

Based on a Review of the Information Provided, We Have  Checked the Appropriate Determination Below

**CONSISTENT RESPONSES - FOR USE BY STATE AGENCIES ONLY**

C1	It is consistent with our plans, programs, and objectives.
C2	It is consistent with the policies contained in Executive Order 01.01.1992.27 (Maryland Economic Growth, Resource Protection, and Planning Act of 1992) and our plans, programs, and objectives.
C3	(MHT ONLY) It has been determined that the project will have "no effect" on historic properties and that the federal and/or state historic preservation requirements have been met.
C4	(DNR ONLY) It has been determined that this project is in the Coastal Zone and is not inconsistent with the Maryland Coastal Zone Management Program.

**CONSISTENT RESPONSES - FOR USE BY COUNTY & LOCAL AGENCIES ONLY**

C5	It is consistent with our plans, programs, and objectives.
C6	It is consistent with the Economic Growth, Resource Protection, and Planning Vision (Planning Act of 1992) and our plans, programs, and objectives.

**OTHER RESPONSES - FOR USE BY ALL AGENCIES**

R1	GENERALLY CONSISTENT WITH QUALIFYING COMMENTS: It is generally consistent with our plans, programs and objectives, but the attached qualifying comment is submitted for consideration.
X R2	CONTINGENT UPON CERTAIN ACTIONS: It is generally consistent with our plans, programs and objectives contingent upon certain actions being taken as noted in the attached comment.
R3	NOT CONSISTENT: It raises problems concerning compatibility with our plans, programs, objectives, or Planning Act visions/policies; or it may duplicate existing program activities, as indicated in the attached comment. If a meeting with the applicant is requested, please check here. <input type="checkbox"/>
R4	ADDITIONAL INFORMATION REQUESTED: Additional information is required to complete the review. The information needed is identified below. If an extension of the review period is requested, please check here. <input type="checkbox"/>

Attach additional comments if necessary OR use the spaces below for brief comments.

Name: Robert Caffrey  
 P. A. C. E.  
 Organization: Anne Arundel County  
 2664 Riva Road  
 Annapolis, MD 21404

Signature: Robert Caffrey  
 Phone: 410.222.7431  
 Date Completed: 12/19/96

MARYLAND  Check here if additional comments attached.



ANNE  
ARUNDEL  
COUNTY,  
MARYLAND

2664 RIVA ROAD, P.O. BOX 6675, MS 6401  
ANNAPOLIS, MARYLAND 21401

DEPARTMENT OF PLANNING AND CODE ENFORCEMENT

December 28, 1995

William G. Carroll  
Manager, Plan and Project Review  
Maryland Office of Planning  
301 West Praston Street, Room 1104  
Baltimore, Maryland 21201-2365

Dear Mr. Carroll:

On behalf of Anne Arundel County, I have been asked to review the Maryland Aviation Administration report describing the Environmental Assessment for the proposed air cargo expansion at BWI airport. This office supports and understands the economic significance of airport expansion at BWI. We are also as interested in seeing that expansion efforts are done with a degree of common sense with regard to environmental stability within this area.

Of the four build out alternatives presented in the report nothing was presented as to how these layouts were derived or the analysis which identified the constraints the facility faces as to why these are the only viable scenarios. Because of this it is hard to conceptualize why alternatives 1, 3 and 4 must be constructed in such a way to impact the most sensitive environmental areas on the property while leaving the majority of open space intact.

It is easy to see that the footprints of alternative's 1, 3 and 4 appear to be practical from a physical layout perspective, when considering the instillation of runway 10R-28L; however, the layout of these scenarios are seriously flawed for it is not apparent that minimizing impacts on dwindling environmental resources were considered.

I suggest that all three of these scenarios could be redrawn to optimize more of the available open space in the South West corner of the property. In support of alternative's 1 and 4, if the designated area described as the "Support Facility" were relocated south of the "Vehicular Access Road" behind the cargo buildings instead to the west of the cargo buildings you could significantly reduce wetland, stream and woodland impacts.

The alternative 2 build out conception, which is completely within the Sawmill Creek Watershed drainage, appears to be the most consistent with minimizing construction impacts to woodlands, wetlands and freshwater streams. It still remains to be seen whether this cargo facility will significantly degrade stormwater runoff into the drainage system. In the past Sawmill Creek has experienced significant water quality problems from the airport facility. The water quality problems of the past have been addressed by the facility however, this report does not seem to take into account past problems nor does it attempt to address how such problems will not be repeated.

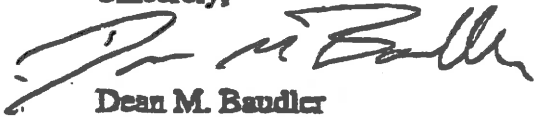


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Additionally, the area between Hawkins Branch and Clack Branch designated as the stockpile area is ill conceived. There is no description as to what is to be stockpiled, for how long and what protections will be in place to minimize deposition of graded materials to the air and surrounding waterways. The best place to hold relatively unprotected byproducts of construction for prolonged periods of time is not adjacent to wetlands and perennial streams draining into one of the last trout streams left in the county.

In closing, I invite you to contact this office with regards to my comments at (410) 222-7441.

Sincerely,



Dean M. Baudler  
Environmental Planner



William G. Carroll  
 Manager, Plan and Project Review  
 Maryland Office of Planning  
 301 West Preston Street, Room 1104  
 Baltimore, Maryland 21201-2365

Application Identifier:	MD961211-1111	Clearinghouse Contact Person:	Bob Rosenbush
Location:	ANAR	Clearinghouse Telephone:	(410) 767-4490
Applicant:	Maryland Department of Transportation Maryland Aviation Administration		
Description:	Draft Environmental Assessment for the Proposed Expansion of Air Cargo Facilities for expanded domestic & international cargo		

Based on a Review of the Information Provided, We Have  Checked the Appropriate Determination Below

**CONSISTENT RESPONSES - FOR USE BY STATE AGENCIES ONLY**

C1	It is consistent with our plans, programs, and objectives.
C2	It is consistent with the policies contained in Executive Order 01.01.1992.27 (Maryland Economic Growth, Resource Protection, and Planning Act of 1992) and our plans, programs, and objectives.
C3	(MHT ONLY) It has been determined that the project will have "no effect" on historic properties and that the federal and/or state historic preservation requirements have been met.
C4	(DNR ONLY) It has been determined that this project is in the Coastal Zone and is not inconsistent with the Maryland Coastal Zone Management Program.

**CONSISTENT RESPONSES - FOR USE BY COUNTY & LOCAL AGENCIES ONLY**

C5	It is consistent with our plans, programs, and objectives.
C6	It is consistent with the Economic Growth, Resource Protection, and Planning Visions (Planning Act of 1992) and our plans, programs, and objectives.

**OTHER RESPONSES - FOR USE BY ALL AGENCIES**

X	R1	GENERALLY CONSISTENT WITH QUALIFYING COMMENTS: It is generally consistent with our plans, programs and objectives, but the attached qualifying comment is submitted for consideration.
	R2	CONTINGENT UPON CERTAIN ACTIONS: It is generally consistent with our plans, programs and objectives contingent upon certain actions being taken as noted in the attached comment.
	R3	NOT CONSISTENT: It raises problems concerning compatibility with our plans, programs, objectives, or Planning Act visions/policies; or it may duplicate existing program activities, as indicated in the attached comment. If a meeting with the applicant is requested, please check here. <input type="checkbox"/>
	R4	ADDITIONAL INFORMATION REQUESTED: Additional information is required to complete the review. The information needed is identified below. If an extension of the review period is requested, please check here. <input type="checkbox"/>

Attach additional comments if necessary OR use the spaces below for brief comments.

**RECEIVED**

Name: KATE MERRICK Signature: [Signature]

Organization: DWR Phone: (410) 974-2996

Address: Annapolis, MD Date Completed: 15 JAN 96

21401 MARYLAND OFFICE OF PLANNING STATE CLEARINGHOUSE

Check here if additional comments attached.

ORP-1A



Fatita N. Glendonig  
Governor

**Maryland Department of Natural Resources**  
**ENVIRONMENTAL REVIEW**  
Towers State Office Building  
Annapolis, Maryland 21401

John R. Griffin  
Secretary

Carolyn D. Davis  
Deputy Secretary

January 24, 1997

Mr. Robert Rosenbush  
Maryland Office of Planning  
301 West Preston Street  
Baltimore, Maryland 21201

RE: MD961211-1111 - Draft Environmental Assessment for the Proposed Expansion of Air Cargo Facilities at Baltimore/Washington International Airport

Dear Mr. Rosenbush:

The above referenced project has been reviewed by the Department of Natural Resources (DNR) for consistency with Department plans, programs, and objectives. Activities proposed include the expansion of air cargo facilities at Baltimore/Washington International Airport (BWI). The following comments are offered for your consideration in the review of the proposed activity:

With one technical exception, we support the December 28, 1996 comments submitted through the Anne Arundel County Department of Planning and Code Enforcement. The Environmental Assessment (EA) does not clearly explain why the alternative locations described will impact the more sensitive environmental areas while leaving the majority of the open space intact. Our cursory knowledge of the long range build out plans at BWI would lead us to speculate that there may be additional development projects that are influencing the design of the present layouts. If this is true, then the use of a 2015 planning window may not be appropriate for rationalizing the environmental impacts described in the EA.

The technical exception mentioned above refers to statements in the EA that indicate that the three receiving streams are Use IV Trout Waters and/or Public Water Supply. In fact, all three streams are Use I waterways. This does not diminish their ecological importance to DNR or the Patuxent watershed, and this is reinforced by the continued commitment to the restoration and protection efforts of the interagency Sawmill Creek Targeted Watershed Project. It should

Telephone: (410) 974-2288  
DNR TTY for the Deaf: (410) 974-3683

Robert Rosenbush  
January 24, 1997  
Page 2

also be pointed out that the Tributary Teams have recently focused on the Targeted Watershed Projects as case studies for Bay restoration and examples of environmentally sound growth management. This fact leads to several other comments concerning the subject EA.

There are several points in the EA that do not agree well with enlightened watershed management perspective that has been demonstrated in previous land management plans produced for BWI. One concern is the treatment of wetlands, stream channels, forests, and riparian corridors as separate, unrelated landscape elements. Within any of the build alternatives described, the cumulative impacts to the specific set of features within a sub-watershed should be treated as a whole. The environmental assessment and future minimization or mitigation alternatives should also include downstream hydrologic and habitat impacts as well.

This leads to our final comment which concerns the reference to wetlands mitigation site selection and Federal Aviation Administration (FAA) guidance (IV-35). Safety is a concern of all the agencies involved in land management, but we believe it may be premature to dictate future environmental management plans on general statements of "potential incompatibility of waterfowl habitat" and airport operations. The FAA should not limit their input to generic policy statements that may not be relevant to local concerns. Comprehensive watershed management plans should include an objective assessment of the specific habitat, water quality and quantity, safety, and land use issues for each drainage basin. The location, type, and functioning value of wetlands mitigation should not be established in advance by any one agency.

Thank you for the opportunity to comment on this project. If you have any further questions, please contact Kate Meade of my staff at (410) 974-2788.

Sincerely,



Ray C. Distamen, Jr., Director  
Environmental Review Unit

RCD:CDM

**RETURN YOUR COMPLETED RESPONSE FORM TO:**

William G. Carroll  
 Manager, Plan and Project Review  
 Maryland Office of Planning  
 301 West Preston Street, Room 1104  
 Baltimore, Maryland 21201-2365

State Application Identifier: Location:	MD981211-1111 ANAR	Clearinghouse Contact Person: Clearinghouse Telephone:	Bob Rosenbush (410) 767-4480
Applicant:	Maryland Department of Transportation Maryland Aviation Administration		
Description:	Draft Environmental Assessment for the Proposed Expansion of Air Cargo Facilities for expanded domestic & international cargo		

Based on a Review of the Information Provided, We Have  Checked the Appropriate Determination Below

**CONSISTENT RESPONSES - FOR USE BY STATE AGENCIES ONLY**

- C1 It is consistent with our plans, programs, and objectives.
- C2 It is consistent with the policies contained in Executive Order 01.01.1992.27 (Maryland Economic Growth, Resource Protection, and Planning Act of 1992) and our plans, programs, and objectives.
- C3 (MHT ONLY) It has been determined that the project will have "no effect" on historic properties and that the federal and/or state historic preservation requirements have been met.
- C4 (DNR ONLY) It has been determined that this project is in the Coastal Zone and is not inconsistent with the Maryland Coastal Zone Management Program.

**CONSISTENT RESPONSES - FOR USE BY COUNTY & LOCAL AGENCIES ONLY**

- C5 It is consistent with our plans, programs, and objectives.
- C6 It is consistent with the Economic Growth, Resource Protection, and Planning Visions (Planning Act of 1992) and our plans, programs, and objectives.

**OTHER RESPONSES - FOR USE BY ALL AGENCIES**

- R1 **GENERALLY CONSISTENT WITH QUALIFYING COMMENTS:** It is generally consistent with our plans, programs and objectives. But the attached qualifying comment is submitted for consideration.
- R2 **CONTINGENT UPON CERTAIN ACTIONS:** It is generally consistent with our plans, programs and objectives contingent upon certain actions being taken as noted in the attached comment.
- R3 **NOT CONSISTENT:** It raises problems concerning compatibility with our plans, programs, objectives, or Planning Act visions/policies; or it may duplicate existing program activities, as indicated in the attached comment. If a meeting with the applicant is requested, please check here.
- R4 **ADDITIONAL INFORMATION REQUESTED:** Additional information is required to complete the review. The information needed is identified below. If an extension of the review period is requested, please check here.

Attach additional comments if necessary OR use the spaces below for brief comments.

Name: RA Rosenbush  
 Organization: Maryland Office of Planning  
 Address: \_\_\_\_\_  
 \_\_\_\_\_

Signature: [Signature]  
 Phone: 410 767-4487  
 Date Completed: 1-24-97

Check here if additional comments attached.





MARYLAND Office of Planning

N. Glendening  
Governor

Ronald M. Kreitzer  
Deputy

Clearinghouse No. MD961211-1111

Description: Draft Environmental Assessment for the Proposed Expansion of Air Cargo Facilities: for expanded domestic & international cargo

The Maryland Economic Growth, Resource Protection, and Planning Act of 1992 states that sensitive areas should be protected. If the preferred alternative, Alternative Four, becomes the selected site, is it possible to reconsider plans to fill the Signal Branch and pave or grade its associated flood plain?

The demonstration of concern, by the Applicant, for environmentally-sensitive design would serve as a model for other projects throughout the State.

Submitted by Bob Rosenbush, Maryland Office of Planning, Plan and Project Review Unit..January 24, 1997

(410) 225-4487

301 West Preston Street • Baltimore, Maryland 21201-2465  
State Clearinghouse: (410) 225-1550 Fax: (410) 225-4480

## ***RESPONSE TO WASTE MANAGEMENT***

All solid wastes requiring off-site disposal will be taken to the closest certificated location for such disposal. The MAA intends to fully coordinate this process, as well as the installation of fuel tanks and development of an appropriate spill prevention program, with the Maryland Department of the Environment.

## ***RESPONSE TO OFFICE OF PLANNING***

The Selected Alternative (4R) in this Final EA represents a modification of the Preferred Alternative (4) from the Draft EA. One of the principal reasons for these modifications was the desire to maintain as much of the main stem of Signal Branch as possible.

## ***RESPONSE TO THE TECHNICAL AND REGULATORY SERVICES ADMINISTRATION***

The noise exposure data and associated contours presented in the Draft EA were developed from forecasts developed for the BWI Noise Zone Study in 1995. These forecasts did, in fact, anticipate the growth in air cargo operations stated in the EA. The contours and noise exposure analysis were prepared specifically for this EA by the same firm (HMMH) who developed the current approved BWI Airport Noise Zone. Based on the minimal effect of the increased nighttime operations, no assessment of single events or awakening potential is warranted.



U. S. Department  
of Transportation

Federal Aviation  
Administration

WASHINGTON AIRPORTS DISTRICT OFFICE  
101 West Broad Street, Suite 300  
Falls Church, Virginia 22046  
Telephone: 703/285-2303  
Fax: 703/285-2313

January 29, 1997

Mr. Lynn Bezilla, Director  
Division of Planning  
Maryland Aviation Administration  
P.O. Box 8766  
BWI Airport, MD 21240-0766

RE: Airspace Study No. 96-AEA-0476-NRA, ALP Update, Midfield Cargo Complex  
BWI Airport

Dear Mr. Bezilla:

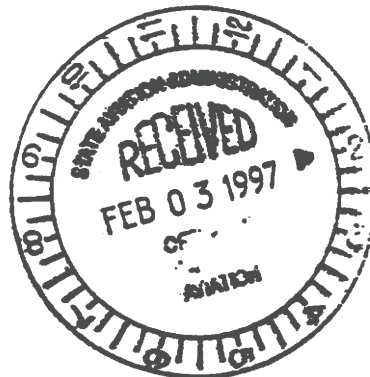
We have reviewed the proposed Midfield Complex layout, submitted with your November 8, 1996, letter and find it satisfactory subject to the following conditions.

- The latitude, longitude and elevation (AMSL) of each cargo building must be submitted for review of IFR impacts to instrument procedures.
- The temporary Modification of Standards for the Runway 10 safety area must be brought up to standard with the construction of the proposed parallel taxiway that will serve the cargo complex.
- No aircraft parking permitted 500' from the runway centerline (parking limit line).

If you have any questions, please do not hesitate to call.

Sincerely,

Kyle H. Goldsmith  
Airport Engineer



*In reply, please refer to: D100795.06*

February 11, 1997

MEMORANDUM

TO: File

FROM: Veronica Piskor

REFERENCE: Contract No. MAA-AE-96-001  
Task No. 6  
Wetland Mitigation Site Search  
Agency Coordination and Pre-Application Meeting  
Midfield Air Cargo Complex  
Baltimore/Washington International Airport (BWI)

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On January 30, 1997, a meeting was held at Maryland Aviation Administration (MAA) offices to discuss environmental issues related to the proposed plans for the Midfield Air Cargo Complex. Attending the meeting were:

Ms. Barbara Grey	-	MAA - Office of Planning and Engineering
Ms. Jennifer Moyer	-	U.S. Army Corps of Engineers
Mr. Wayne Schuster	-	URS Greiner
Mr. Mark Andrews	-	URS Greiner
Mr. Ted Hogan	-	URS Greiner
Ms. Veronica Piskor	-	URS Greiner

Highlights of the meeting are as follows:

The meeting began with Wayne Schuster describing the purpose and need for the proposed Midfield Air Cargo Complex, which includes increased demand for belly cargo and all-cargo handling facilities to serve the Baltimore/Washington service area. The MAA has studied industry trends and found that the existing supply of buildings are inadequate to satisfy the demand for cargo facilities, and that some of the existing buildings in the existing Cargo Complex are best suited for belly cargo operations only.

**Alternatives**

Mr. Schuster and Mr. Andrews explained the four alternatives proposed in the draft Environmental Assessment (EA) and summarized the processes for choosing the preferred alternative amid various

constraints placed on the siting of the proposed cargo complex. Constraints noted during the discussion included:

- Height restricted areas due to Federal Aviation Regulations (FAR) Part 77 imaginary surfaces.
- Unimpeded 1,500-foot radius required around Airport Surveillance Radar and 1,000-foot radius around the Baltimore Very High Frequency Omnidirectional Range (VORTAC).
- A minimum of 100 acres is required to meet cargo facility requirements.
- Decision to retain the airfield maintenance facility at its present location adjacent to te existing Cargo Complex.
- Additional height restrictions associated with the layout of the planned parallel runway and associated taxiways.
- Maintenance of access to Aviation Boulevard for the Aircraft Rescue and Firefighting Facility (ARFF), which serves the airport and neighboring community
- Maintenance of access to the private cemetery adjacent to the ARFF station.

Mr. Andrews continued with details of the preferred alternative layout for the cargo complex. The following issues were discussed:

- Taxiways for the existing Runway 10-28 and planned parallel runway, Aviation Boulevard to the west, the parallel runway to the south and existing Runway 10-28 to the north constrain the footprint of the proposed midfield cargo complex.
- Building orientation must be parallel to runways to meet FAR Part 77 height restrictions, resulting in an elongated project footprint.
- Grading and infrastructure construction for the ultimate build-out would be performed during the first phase.
- The entire site elevation must be lowered to maintain the integrity of the Part 77 surfaces while accommodating aircraft that may have a 60-foot+ tail height.

- Restrictions on vehicles crossing runways and taxiways require certain facilities to be independent of the main terminal, such as vehicle access, aircraft/truck fueling and support vehicle storage.
- Unlicensed support vehicles cannot exit airport property and parking cannot be multilevel due to height restrictions.
- The alternate location for support services was restricted due to the presence of historic structures.
- MAA proposes to maintain a 200-foot wide forested buffer on the periphery of its property.

Ms. Moyer asked for details on the stockpile proposed as part of the cargo complex design. Mr. Andrews described the design of the stockpile as no higher than the adjacent trees to keep it out of view of the community. It will be terraced and will have sediment and erosion control measures in place to protect the neighboring streams and wetlands. The stockpile will remain until fill material is required for future projects.

#### **ARFF Station**

Ms. Moyer requested clarification of the modification to the ARFF wetland permit that was made to include access at Gate 11, as well as Gate 13. Mr. Hogan explained that the modification was needed for this phase of the ARFF construction because the access road from Gate 11 would provide temporary access until the entrance at Gate 13 is constructed for the Air Cargo Complex. Also, access is needed immediately at Gate 13 to supply crossing for the State Highway Administration-sponsored hiker/biker trail. In addition, any access road from Gate 13 to the ARFF station would be temporarily disrupted during construction of the cargo complex, thus requiring additional access from Gate 11. Disruption of service is unacceptable as certain emergency response times must be maintained. Therefore, access at Gate 11 was included in the permit modification. The proposed access road to the ARFF will also serve as access to the private on-site cemetery.

Ms. Moyer asked if a jurisdictional determination (JD) was made on Kitten Branch, which incurred impacts from the design of the ARFF station and will be impacted by the proposed taxiway to the Cargo Complex. Mr. Hogan said that Ms. Michelle Gomez, U.S. Army Corps of Engineers, conducted a JD during her review of the permit application. Ms. Moyer will review the files on the JD made by Ms. Gomez.

## **Comments on the Environmental Assessment (EA)**

### Cultural Issues

Ms. Moyer asked if the proposed programmatic agreement had been signed. Ms. Grey responded that it had not and is currently under review by the Advisory Council on Historic Preservation. Only minor comments are expected. In addition, the archaeological resources field work was recently completed and the report is forthcoming. Ms. Moyer requested a copy of the final report.

### Rare, Threatened and Endangered Species (RTE) Issues

Ms. Moyer commented on the references in the EA to the swamp pink, an RTE that was found within wetlands associated with Stony Run. Mr. Hogan noted that the swamp pink was not found to be within the limits of disturbance of the proposed cargo complex. Field studies were conducted during Fall 1996 to locate additional RTE's, the marsh fern and the giant cane, though none were found within the proposed project area. The presence of swamp pink could not be determined at that time because it could not be positively identified at that time of year.

### Environmental Justice

Ms. Moyer noted that an Environmental Justice section should be included in the EA. Ms. Grey stated that much effort was put forth to involve the community in the project planning and development stages. In addition, MAA officials meet regularly with the neighborhood committee to discuss such issues. Relevant documentation will be included in the Final EA with discussions on impacts to minority communities.

### Wetland Mitigation

Mr. Hogan gave an overview of the current and future needs for wetland mitigation for MAA projects at BWI. By far the largest impact to wetland will occur with the construction of the planned parallel runway, which is estimated to need 44 acres of wetland mitigation, based on current mitigation replacement ratios required by MDE for mitigation banks. Ms. Moyer asked about the functional assessment of the impacted wetlands and was advised that they are included in the BWI - Wetland Management Plan that was given to her at this meeting. The Army Corps of Engineers uses Hydrogeomorphic Wetland Functional Assessment methods to determine function and values. Ms. Moyer suggested that the success of wetland mitigation sites tended to increase proportionally to the size of the site.

Memorandum  
February 11, 1997  
Page 5

Ms. Moyer was given a copy of the January 1997 URS Greiner draft Wetland Mitigation Feasibility Report. The meeting then commenced in the field with Ms. Moyer, Ms. Grey, Mr. Hogan and Ms. Piskor. Ms. Piskor provided an overview of potential wetland mitigation Sites 1-5 as they were viewed in the field. Sites 6, 7 and 8 were deemed unacceptable for wetland mitigation and were not visited. The stream restoration and a large wetland creation project proposed at Site 5 generated discussions including potential for an integrated site that includes Site 4 and upgrades to Race Road. The proposed site for stream restoration, Sach's Branch, was also viewed.

VRP:ss

c: Attendees



*In reply, please refer to: D1000795.06*

February 28, 1997

MEMORANDUM

TO: File

FROM: Veronica Piskor

REFERENCE: Task 6: Wetland Mitigation  
Agency Coordination and Pre-application Meeting  
Baltimore/Washington International Airport (BWI)  
Contract No. MAA-AE-96-001  
Comprehensive Airport Planning Services

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On February 19, 1997, a meeting was held at Maryland Aviation Administration (MAA) offices to discuss environmental issues related to the proposed plans for the Midfield Air Cargo Complex. Attending the meeting were:

Ms. Barbara Grey	-	MAA - Office of Planning and Engineering
Ms. Judy Cole	-	MDE - WMA Nontidal Wetlands and Waterways Division
Mr. Dave Walbeck	-	MDE - WMA Nontidal Wetlands and Waterways Division
Mr. Wayne Schuster	-	URS Greiner
Mr. Mark Andrews	-	URS Greiner
Mr. Ted Hogan	-	URS Greiner
Ms. Veronica Piskor	-	URS Greiner

Highlights of the meeting are as follows:

The meeting began with Wayne Schuster describing the purpose and need for the proposed Midfield Air Cargo Complex, which includes the increased demand for "belly cargo" (cargo transported in the belly of passenger-carrier aircraft) and all-cargo handling facilities to remain competitive with other international airports. URS Greiner has studied industry trends and found that the existing Air Cargo Complex is inadequate to satisfy the existing and expected demand for cargo facilities and that some of the existing buildings are best suited for belly cargo operations only.

1. **Alternatives** - Mr. Schuster and Mr. Andrews explained the four Alternatives included in the Environmental Assessment and summarized the processes for choosing the preferred Alternative amid various constraints placed on the siting of the proposed cargo complex. Constraints noted during the discussion included:

- Height restricted areas due to Federal Aviation Regulation (FAR) Part 77 imaginary surfaces.
  - Unimpeded 1,500-foot radius required around the Airport Surveillance Radar and 1,000-foot radius around the Very High Frequency Omnidirectional Range.
  - A minimum of approximately 100 acres required to meet the cargo facility requirements.
  - Decision to retain the airfield maintenance complex at its present location adjacent to the existing Cargo Complex.
  - Additional height restrictions caused by the layout of the planned parallel runway and associated taxiways.
  - Maintenance of access to Aviation Boulevard for the Aircraft Rescue and Firefighting Facility (ARFF) which serves the Airport and neighboring community.
  - Maintenance of access to the private cemetery adjacent to the ARFF station
2. Mr. Andrews and Mr. Schuster continued with details of the preferred Alternative layout for the cargo complex. The following issues were discussed:
- Taxiways serving existing Runway 10-28 and the planned parallel runway; Aviation Boulevard to the west; the planned parallel runway to the south and existing Runway 10-28 to the north constrain the footprint of the proposed cargo complex.
  - Building orientation must be parallel to runways to meet height restrictions, resulting in an elongated project footprint.
  - Concept refinements lowered the proposed grade of the cargo complex to minimize forest impacts.
  - Grading and infrastructure construction for the ultimate build-out would be performed during the first phase.
  - The entire site elevation must be lowered to maintain the integrity of the Part 77 surfaces while accommodating aircraft that may have a 60-foot+ tail height.

- Restrictions on vehicles crossing runways and taxiways require certain facilities to be constructed independent of the main terminal, such as vehicle access, aircraft/truck fueling and support vehicle storage.
  - Unlicensed support vehicles cannot exit Airport property.
  - MAA has indicated that it desires to maintain a 200-foot wide forested buffer on the periphery of its property.
3. Ms. Cole asked for clarification on why the airfield maintenance facility in Alternative 1 could not be relocated to the area adjacent to the ARFF station. Mr. Schuster explained that the location of an all-cargo handling complex in the area of the relocated maintenance facility would significantly increase truck traffic on Elm Road. This increase in traffic would jeopardize the free flow of traffic in that area that will be additionally restricted due to the light rail crossing of Elm Road. In addition, the vast majority of operations performed by the maintenance staff are within the terminal area. With the maintenance facility adjacent to the ARFF station, the maintenance vehicles and staff would need to cross the taxiways and runways to reach the terminal, as the vehicles are unlicensed and are not permitted to exit the property.
4. **Environmental Assessment Concept for the Midfield Cargo Complex** - Ms. Cole asked for details on the stockpile proposed as part of the cargo complex design. Mr. Andrews explained that the impacts to forests is unavoidable and that the stockpile will remain until fill material is required for future projects. Ms. Cole responded that the Maryland Department of the Environment has no jurisdiction over the proposed stockpiling as it would not impact wetlands, waterways or the 25-foot wetland buffer. Ms. Cole stated that any impacts to MDE regulated resources caused by the stockpile would not be acceptable.
- Mr. Walbeck asked about alternate locations for the stockpile that would not impact forest. Ms. Grey described the efforts of MAA to dispose of fill material on site. As most areas are presently graded to their maximum elevation, there is little opportunity to add fill outside the lower lying forested areas. A portion of the fill is proposed to be distributed in a low, cleared area south of Runway 4 in the runway protection zone. However, this area will only allow a small portion of the material to be located before penetrating FAR Part 77 surfaces.
5. Ms. Cole asked if the proposed cargo complex is an independent utility from the planned parallel runway. Mr. Schuster indicated that the Federal Aviation Administration (FAA) has agreed that the proposed Cargo Complex and planned parallel runway are not connected in

time or function. Mr. Schuster described the proposed use of the facility by all cargo carriers that could land on any runway.

6. Mr. Walbeck inquired about the orientation of the planned parallel runway and the possibility of aligning the runway slightly off-parallel to existing Runway 10-28 to minimize future impacts. Mr. Schuster explained the need to build the future runway parallel to adjacent runways, specifically due to the possibility of overlapping airspace on approaches and departures and the need for these areas to be clear in case of a "missed" or aborted landing. Additionally, the separation between the planned parallel runway and existing Runway 10-28 has yet to be determined. MAA is expecting technological advances in radar to allow the siting of the runways to be closer than the presently required 3,400 feet allowed for simultaneous use. Therefore, impacts for the planned runway cannot be determined at this time.
7. Mr. Schuster requested clarification on whether hydrologic alterations to streams were considered an impact. Specifically, would the elimination of the headwater area of Signal Branch, as proposed in the concept plans, be considered an impact to the entire reach. Ms. Cole responded that stormwater management plans should be designed to compensate for this loss by outfalling to the stream at the nearest upstream location. Ms. Cole continued by saying that MDE would require the use of all available technology to maintain existing hydrology to the stream. Any portion of the stream that is deprived of hydrology is considered a loss by MDE.
8. **Rare, Threatened and Endangered Species (RTE) Issues** - Discussion included the swamp pink (*Helonias bullata*), an endangered specie that was found within wetlands associated with Stony Run. Mr. Hogan noted that the swamp pink was not found to be within the limits of disturbance of the proposed Cargo Complex. Field studies were conducted last fall to locate additional RTE's, the marsh fern and the giant cane, though none were found within the project area. Mr. Walbeck inquired about the habitat required by the swamp pink. Mr. Hogan recalled that the general habitat for both the swamp pink and the bog fern is forested wetlands.
9. **Wetland Permit Application** - Mr. Hogan stated that, because the proposed impacts total less than 5 acres, the proposed project would qualify for a Category III permit review process, under the Maryland State Programmatic General Permit. Ms. Cole concurred and stated that the U.S. Army Corps of Engineers (COE) could increase the level of scrutiny to a Category IV, but that was unlikely to occur. Ms. Cole cautioned that the permit process would take approximately six months to issue once the permit application is determined to be complete.

A joint MDE and COE public notice period would be 30 days after being published, most likely in the Capital and Sunpapers.

Ms. Cole recommended that we notify adjacent property owners and provide MDE with a list of those owners. In addition, a set of mailing labels included with the permit application would expedite the MDE process of notifying adjacent property owners. Ms. Cole will check the regulations to determine adjacency as it relates to ownership notification. The application should also contain details of the proposed stormwater management facilities, including infiltration rates and soil boring data. Stormwater management will be expected to treat the 1-year storm runoff.

- 10. Wetland Mitigation** - Mr. Hogan and Ms. Grey gave an overview of the current and future needs for wetland mitigation for MAA projects at BWI. Approximately 17 acres of impacts to wetlands will occur within the next 10-year planning phase, based on current estimates. It was explained that because the Airport limits are constrained by adjacent highways and development, all future development will be within the present limits of the Airport. Ms. Grey explained that the potential mitigation sites identified in the Wetland Mitigation Feasibility Study are proposed for wetland impacts from the cargo complex and future projects. Ms. Grey also noted that the FAA does not allow wetland mitigation projects within the Airport Operations Area.

Ms. Cole and Mr. Walbeck were given a copy of the Wetland Mitigation Feasibility Study. Ms. Piskor gave a brief overview of the five acceptable wetland mitigation sites identified in the report. It was explained that, except for one site, the proposed mitigation sites are groups of MAA-owned properties purchased as part of an on-going noise abatement program.

- 11.** The meeting then commenced in the field with Mr. Walbeck, Mr. Hogan and Ms. Piskor. Ms. Piskor provided site-specific opportunities and constraints related to the potential wetland mitigation sites as they were viewed in the field. The proposed site for stream restoration, Sach's Branch, was viewed from the I-195/MD 170 interchange. Mr. Walbeck agreed that erosion of the stream was severe. He recommended that the cause of the erosion to the stream be researched, and that any proposed restoration include mitigation of the erosion.
- 12.** Mr. Walbeck concurred that Site 1 has potential for wetland creation and may be considered wetland restoration. He recommended that slopes not exceed a 5:1 ratio with 3:1 ratio being allowable under certain circumstances for a small portion of the slope. He cautioned that the excavation depth considered acceptable generally would be two feet, but MDE would accept limited use of a four-foot cut. MDE would allow for the cutting of a few trees that would lie

within the proposed creation area. Ms. Piskor asked if MDE would consider preservation of existing wetlands as part of a mitigation package. Mr. Walbeck said that he would consider credit for preservation acreage at a 10:1 ratio, especially if the preserved area is considered a Wetland of Special State Concern and contained the habitat of the endangered swamp pink. He will check with DNR-Natural Heritage Program representatives to determine the habitat suitability for the swamp pink. Site 2 was offered for consideration as preservation only and its suitability also will be judged under the criteria mentioned above.

13. Mr. Walbeck concurred that Site 3 was acceptable for wetland creation. However, MDE would consider the proposed work to be wetland restoration, as there was physical evidence of systematic filling of wetlands at the wetland/upland boundaries on site. Wetland restoration is viewed more favorably by MDE and COE. Mr. Walbeck noted the abundance of hydrology adjacent to the proposed site that would indicate sufficient hydrology for a restored wetland. He advised that upland islands needed to retain small stands of pin oak trees would be credited toward the restoration acreage. Generally, the area within the driplines of the trees is the minimum required to maintain continued growth and health of the retained trees. The dripline is the entire area under the tree as measured vertically from the tips of the far most branches to a point on the ground.
14. Discussions relating to the potential of Site 4 as wetland mitigation were generally favorable. Mr. Walbeck cautioned that MDE would not want a created floodplain wetland such as this to have an intake connection with the channel, only an outfall. MDE would prefer that the hydrology be based on groundwater. He believed that MDE would generally accept stream bank stabilization within the property boundaries where Deep Run is eroding its banks on an outer meander.
15. Mr. Walbeck remarked that Site 5 had "excellent" potential when combined with the adjacent privately-owned property. He noted the abundance of hydrology, as saturated soil and a perennial stream are on site. Mr. Walbeck recommended further investigation of the groundwater levels and reiterated that MDE generally would consider a two-foot maximum excavation. MDE would also consider entering into a written agreement that would allow for current replacement ratios for wetland mitigation created in advance of wetland impacts.
16. Mr. Walbeck indicated that a combination of Sites 2 and 3 would be acceptable to MDE for mitigation. He noted that this combination of wetland creation and preservation could provide the needed mitigation acreage, provided that the preservation areas were suitable habitat for the swamp pink.

Memorandum  
February 28, 1997  
Page 7

Please notify me within one week if there are any changes required, otherwise these minutes will stand as written.

VRP:ss

c: Attendees

*In reply, please refer to: D100795.10*

April 7, 1997

Mr. Andy Moser  
U.S. Fish and Wildlife Service  
177 Admiral Cochrane Drive  
Annapolis, Maryland 21401

Reference: Contract No. MAA-AE-96-001  
Comprehensive Airport Planning Services  
Task 10: Environmental Assessment  
Baltimore/Washington International Airport

Dear Mr. Moser:

On behalf of the Maryland Aviation Administration (MAA), URS Greiner, Inc. is pleased to present to you for your review one (1) copy of the Draft Environmental Assessment (EA) for the Proposed Expansion of Air Cargo Facilities for Baltimore/Washington International Airport (BWI) and one (1) copy of the Alternative 4 - Modified layout plans. You may remember the study area from the wetland field review that you attended along with Vance Hobbs of the U.S. Army Corps of Engineers (Corps) and URS Greiner staff on June 20, 1996.

BWI has experienced dramatic growth in facilities and service demand over the past decade and the MAA plans to further develop its facilities to meet both its current and forecasted needs. This Draft EA has been prepared to address potential impacts from much needed expansion of air cargo facilities.

During the Draft EA review and comment period, pre-application meetings were held with both the Corps and the Maryland Department of the Environment (MDE) to discuss environmental issues related to the proposed plans for the Preferred Alternative (Alternative 4). The purpose of the meetings was to elicit comments from the agencies that could be addressed prior to the submittal of the Joint Permit Application. Meanwhile, comments from agencies reviewing the Draft EA were received. Comments from the Corps and MDE, in addition to specific comments from the Air Traffic Control Center, led to a partial modification of the Preferred Alternative.

Alternative 4 - Modified includes the relocation of the east/west taxiway from south of Runway 10-28 to north of the runway, which provides a safer ground taxiing movement for crossing the intersecting runways (see attached Exhibit). Based on this new design, the proposed taxiway for the



Mr. Andy Moser  
April 7, 1997  
Page 2

Midfield Cargo Complex will incur minor impacts to State-designated nontidal wetlands, while reducing impacts to the Kitten Branch channel.

In an effort to further reduce wetland and waterway impacts, the proposed Support Facilities were moved to the south of the access road, which reduces the impacts to Signal Branch. However, vegetated wetland impacts within the Signal Branch watershed remain unchanged from impacts originally associated with Alternative 4 in the Draft EA.

The Hawkins Branch impacts, which result from the proposed deceleration lane along MD Route 170 south of the proposed access road, would also remain unchanged in the revised plan. In addition, overall forest impacts were reduced by the modified design.

Please provide any comments that you may have to me or Veronica Piskor of this office at your convenience. Thank you for your attention to this matter.

Sincerely yours,

**URS Greiner, Inc.**



Washington Bowie, 6th, CEP  
Senior Airports Environmental Planner

WB:VRP:ss  
Enclosures

c: Barbara Grey, MAA  
Michael D. Steer  
Theodore J. Hogan

*In reply, please refer to: D100813*

April 17, 1997

**MEMORANDUM**

TO: File

FROM: Ted Hogan *TJH*

REFERENCE: Draft Environmental Assessment  
Air Cargo Terminal Expansion at  
Baltimore/Washington International Airport

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At 2:00 p.m. on April 7, 1997, a meeting was held with the Maryland Department of Natural Resources at the Tawes State Office Building, Annapolis, Maryland. In attendance at the meeting were the following:

Larry Lubbers	-	Maryland Department of Natural Resources
Kate Meade	-	Maryland Department of Natural Resources
Barbara Grey	-	Maryland Aviation Administration
Steve Lucchesi	-	URS Greiner, Inc.
Wat Bowie	-	URS Greiner, Inc.
Ted Hogan	-	URS Greiner, Inc.

Highlights of the meeting follow:

Barbara Grey opened with a brief discussion of the purpose of the meeting. MAA requested the meeting to respond in person to the comments submitted by DNR on January 24, 1997 regarding the Environmental Assessment (EA) for the Air Cargo Terminal Expansion at Baltimore/Washington International Airport (BWI). Ms. Grey then turned the meeting over to Mr. Lucchesi to elaborate on the purpose and need for the project and the alternatives considered in the EA.

Mr. Lucchesi covered the following points in his discussion:

- There is a general growth in the cargo industry nationwide (approximately 8% per year) and historic growth at BWI of 2% per year. Current MAA projections are for growth rates at BWI to average 4% over the next 20 years. The vast majority of this growth is all-cargo, and not belly cargo.

MEMORANDUM

April 17, 1997

Page 2

- Much of the growth in the cargo industry is in 2nd and 3rd day delivery, and consequently there is an increased need for on-site storage of cargo. In addition, much of this cargo is strictly transported by truck.
- Mr. Lucchesi then described the existing cargo facilities at BWI. He advised that the existing facilities are at capacity. Any new cargo facility constructed at BWI needs to have expansion capabilities to accommodate potential demand should the conservative growth rates be exceeded. Alternative 1 would expand the existing facility by one building. Additional expansion would involve a new facility within the midfield area.
- Three other locations on BWI property were considered for the Air Cargo Terminal. One of these sites was in the southeastern quadrant of the airport (Alternative 2). This site is constrained by the future 10R-28L parallel runway, the midfield area formed between the two runways, and the existing VOR. These constraints would result in no room for future expansion of cargo facilities. In addition, a groundwater recharge area exists in this area that could be adversely affected by the impervious area required for the facility.
- The alternative in the southwest quadrant of the airport was then discussed (Alternative 3). The severe impacts to both Hawkins Branch and Clark Branch that would result by this alternative were described.
- The locations of the streams on the BWI property were then described, specifically, Clark Branch, Hawkins Branch, and Signal Branch.
- The location of the Harmans archaeological site was then described. Also discussed was the archaeological site in the vicinity of the proposed stockpile.
- The need for the removal of trees such that the air traffic control tower can see the facility was discussed. In addition, tree clearing will be required for truck parking, a truck wash, fueling facilities, and a fuel farm. The requirement that fuel trucks not be driven on public roads was mentioned.
- Based on feedback from potential tenants of the facility and from the Federal Aviation Administration (FAA), Alternative 4 was revised and is now referred to as Alternative 4R. Alternative 4R provides for 480-foot long buildings with an expansion capability to 700 feet. Parking can be provided between the buildings. The cargo carriers require a certain ramp to building size ratio which can be accommodated by Alternative 4R.

MEMORANDUM

April 17, 1997

Page 3

- The taxiway to the facility has been revised from south of the facility to north of the facility. This reduced the length of impact to Signal Branch from 1,500 feet to 780 feet. Stormwater management will be provided by two dry ponds north and south of the entrance road and a pond east of the cargo terminal. A wooded buffer will be maintained adjacent to the stormwater management ponds.
- Approximately 2 million cubic yards of excess soil will need to be stockpiled on-site. This material will be used in the construction of the parallel runway if it is built. Insufficient area exists elsewhere on the airport for stockpiling the material. The proposed stockpile area has recently been made larger so that the archaeological site could be avoided. Two hundred (200)-foot buffers are to be maintained adjacent to Hawkins Branch and Clark Branch.

Mr. Lubbers and Ms. Meade advised that the presentation provided the needed response to most of DNR's January 24, 1997 comments. Mr. Bowie requested that a follow-up letter be prepared by DNR to clarify its previous comments, in light of the matters discussed at this meeting. Mr. Lubbers agreed to prepare such a letter.

The meeting adjourned at approximately 4:00 p.m.

cc: Attendees  
Lynn Bezilla, MAA  
Ali Logmanni, MAA



# Maryland Aviation Administration

*"Striving to do our best in everything we do - dedicated to providing outstanding airport facilities and services"*

Theodore E. Mathison    Executive Director

May 1, 1997

Ms. Andi Cunabaugh, Chief  
Regulatory Services Coordination Office  
Maryland Department of the Environment  
Water Management Administration  
2500 Broening Highway  
Baltimore MD 21224

Re:    Contract No. MAA-AE-96-003  
      Midfield Cargo Complex  
      Joint Permit Application  
      Baltimore/Washington International Airport

Dear Ms. Cunabaugh:

On behalf of the Maryland Aviation Administration (MAA), enclosed are one original and four (4) copies of our completed Joint Permit Application for the proposed expansion of air cargo facilities at the Baltimore/Washington International Airport (BWI) for review and processing. This application is submitted in compliance with the requirements of the U.S. Corps of Engineers (ACOE) and the Maryland Department of the Environment (MDE).

The proposed Midfield Cargo Complex project entails the construction of cargo buildings, taxiway, aircraft parking aprons, support facilities, stormwater management facilities and roadways. The proposed project will permanently impact 48,421 square feet of vegetated wetlands, 47,954 square feet of wetland buffer, and 1,329 linear feet of stream. In addition, 12,600 square feet of wetland buffer will be temporarily impacted by the proposed work.

Also enclosed are copies of the Avoidance, Minimization and Mitigation Report (AMMR), detailing the effort put forth to avoid, minimize and mitigate wetlands and waterways impacts. The Mitigation section of the AMMR includes stream restoration projects as mitigation for anticipated stream impacts. Mitigation is proposed for stream impacts incurred by the proposed cargo complex and the construction of the Aircraft Rescue and Firefighting Facility (ARFF). This was requested by the ACOE as a condition of the ARFF permit (CENAB-OP-RX 95-68267-9).



Ms. Andi Cunabaugh  
May 1, 1997  
Page Two

A jurisdictional determination on wetlands associated with Signal, Hawkins and Clark Branches was made by Vance Hobbs of the ACOE and Andy Moser of the U.S. Fish and Wildlife Service on June 20, 1996. Michelle Gomez, also with ACOE, conducted a jurisdictional determination on portions of Kitten Branch as part of the wetland permit process for the ARFF.

Your prompt attention to this matter would be most appreciated. Please call me at 410-859-7090, if you have any questions.

Sincerely,



Barbara Grey, Manager  
Environmental Plans and Programs

BEG:jar

cc: Steve Lucchesi  
Veronica Piskor

JOINT FEDERAL/STATE APPLICATION FOR THE ALTERATION OF ANY FLOODPLAIN, WATERWAY, TIDAL OR NONTIDAL WETLAND IN MARYLAND

FOR AGENCY USE ONLY

Application number \_\_\_\_\_ Date Determined Complete \_\_\_\_\_  
Date received by State \_\_\_\_\_ Date(s) Returned \_\_\_\_\_  
Date received by Corps \_\_\_\_\_  
Type of State permit needed \_\_\_\_\_ Date of Field Review \_\_\_\_\_  
Type of Corps permit needed \_\_\_\_\_ Agency Performed Field Review \_\_\_\_\_

- \* Please submit 1 original and 4 copies of this form required maps and plans to the Wetlands and Waterway Program as noted on the last page of this form.
- \* Any application which is not completed in full or is accompanied by poor quality drawings may be considered incomplete and result in time delay to the applicant.

Please check one of the following:

RESUBMITTAL: \_\_\_\_\_ APPLICATION AMENDMENT: \_\_\_\_\_ MODIFICATION TO AN EXISTING PERMIT: \_\_\_\_\_ JURISDICTIONAL DETERMINATION ONLY: \_\_\_\_\_ APPLYING FOR AUTHORIZATION: X

PREVIOUSLY ASSIGNED NUMBER (RESUBMITTALS AND AMENDMENTS): 96-00447-11

DATE April 30, 1997

1. APPLICANT INFORMATION:

APPLICANT NAME:

A. Name: Michael C. West, Associate Administrator Daytime Telephone: 410-859-7068  
C. Company: Maryland Aviation Administration, Office of Planning and Engineering  
Address: P. O. Box 8766  
City: BWI Airport State: Maryland Zip: 21240-0766

AGENT/ENGINEER INFORMATION:

A. Name: Steve M. Lucchesi Daytime Telephone: 410-561-0100  
C. Company: URS Greiner, Inc.  
D. Address: 2219 York Road, Suite 200  
E. City: Timonium State: Maryland Zip: 21093-3111

ENVIRONMENTAL CONSULTANT:

A. Name: Veronica R. Piskor Daytime Telephone: 410-561-0100  
C. Company: URS Greiner, Inc.  
D. Address: 2219 York Road, Suite 200  
E. City: Timonium State: Maryland Zip: 21093-3111

CONTRACTOR (If Known): Unknown

A. Name: \_\_\_\_\_ Daytime Telephone: \_\_\_\_\_  
C. Company: \_\_\_\_\_  
D. Address: \_\_\_\_\_  
E. City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

PRINCIPAL CONTACT:

Name: Barbara E. Grey Daytime Telephone: 410-561-0100  
Company: Maryland Aviation Administration, Office of Planning and Engineering  
D. Address: P. O. Box 8766  
E. City: BWI Airport State: Maryland Zip: 21240-00766

2. PROJECT DESCRIPTION

A. GIVE WRITTEN DESCRIPTION OF PROJECT:

See the attached report.

Has any portion of the project been completed?  Yes  No If yes, explain  
 The access road crossing over Signal Branch was permitted with the ARFF (CENAB-RX 68267-9).

B. ACTIVITY:

Check all activities that are proposed in the wetland, waterway, floodplain, and nontidal wetland buffer as appropriate.

- |  |  |  |
|--|--|--|
| A. <input checked="" type="checkbox"/> Filling | D. <input type="checkbox"/> Flooding or impounding water | G. <input checked="" type="checkbox"/> Removing or destroying vegetation |
| B. <input type="checkbox"/> Dredging           | E. <input type="checkbox"/> Draining                     | H. <input checked="" type="checkbox"/> Building structures               |
| C. <input type="checkbox"/> Excavating         | F. <input checked="" type="checkbox"/> Grading           |  |

Area for item(s) checked: Wetland 48,421 (sq.ft.) Buffer (Nontidal Wetland Only) 60,554 (sq.ft.)  
 Expanded Buffer (Nontidal Wetland Only) N/A (sq.ft.)

Length of stream affected 1,329 (linear feet)

C. TYPE OF PROJECTS: Project Dimensions

For each activity, give all overall length and width (in feet), in columns 1 and 2. For multiple activities, give total area of disturbance in square feet in column 3. For activities in tidal waters, give maximum distance channelward (in feet) in column 4. For dam or small ponds, give average depth (in feet) for the completed project in column 5. Give the volume of fill or dredged material in column 6

	Length (Ft.)	Width (Ft.)	Area Sq. Ft	Maximum/Average Channelward Enchoachment	Pond Depth	Volume of fill/dredge material (cubic yards) below MHW or OHW
	1	2	3	4	5	6
A. <input type="checkbox"/> Bulkhead*						
B. <input type="checkbox"/> Revetment*						
C. <input type="checkbox"/> Vegetative Stabilization						
D. <input type="checkbox"/> Gabions						
E. <input type="checkbox"/> Groins						
F. <input type="checkbox"/> Jetties						
G. <input type="checkbox"/> Boat Ramp						
H. <input type="checkbox"/> Pier*						
I. <input type="checkbox"/> Breakwater						
J. <input type="checkbox"/> Repair & Maintenance						
K. <input type="checkbox"/> Road Crossing						
L. <input type="checkbox"/> Utility Line						
M. <input type="checkbox"/> Outfall Construction						
N. <input type="checkbox"/> Small Pond						
O. <input type="checkbox"/> Dam						
P. <input type="checkbox"/> Lot Fill						
Q. <input type="checkbox"/> Building Structures						
R. <input type="checkbox"/> Culvert						
S. <input type="checkbox"/> Bridge						
T. <input type="checkbox"/> Stream Channelization						
U. <input type="checkbox"/> Parking Area						
V. <input type="checkbox"/> Dredging*						
1 <input type="checkbox"/> New	2 <input type="checkbox"/> Maintenance	3 <input type="checkbox"/> Hydraulic	4 <input type="checkbox"/> Mechanical			

W.  Other (explain) See Attachment A.

For projects indicated with an asterisk refer to the sample plans and checklists found in the January, 1988 Joint Application booklet.



D. PROJECT PURPOSE: Give brief written description of the project purpose:

See the attached report.

PROJECT LOCATION:

a. LOCATION INFORMATION

A. County: Anne Arundel B. City: C. Name of waterway or closest waterway: Stony Run
D. State stream use class designations: Use I
E. Site Address or Location: BWI Airport

F. Directions from nearest intersection of two state roads: Proceed south on MD 170 from the intersection with I-195 for approximately 1 1/4 miles, turn left at Gate 13.

G. Is your project located in the Chesapeake Bay Critical Area (generally within 1000 feet of tidal waters or tidal wetlands)?: Yes [X] No

H. County Book Map Coordinate (Alexandria Drafting Co.); Excluding Garrett and Somerset Counties:

Page: 1 Letter: B Number: 2 (to the nearest tenth)

I. FEMA Floodplain Map Panel Number (If Known):

J. 1 39 11' 00" Latitude 2 76 40' 00" Longitude

b. ACTIVITY LOCATION: Check one or more of the following as appropriate for the type of wetland/waterway where you are proposing an activity:

- A. Tidal Waters
B. Tidal Wetlands
C. Special Aquatic Site (e.g. mudflat, vegetated shallow)
D. Nontidal Wetland
E. 25-Foot buffer (nontidal) wetlands only
F. 100-foot buffer (nontidal wetland of special State concern)
G. In stream channel
H. 100-year floodplain (outside stream channel)
I. River, lake, pond
J. Other (Explain)

c. LAND USE:

A. Current Use of Parcel Is: 1. Agriculture: Has SCS designated project site as a prior converted cropland? Yes No
2. X Wooded 3. X Marsh/Swamp 4. Developed 5. Other (explain)

B. Present Zoning Is: 1. Residential 2. Commercial/Industrial 3. Agriculture 4. Marina 5. X Other

C. Project complies with current zoning X Yes No

THE FOLLOWING INFORMATION IS REQUIRED BY THE STATE (blocks 4-7):

Note: If you are proposing activities in nontidal wetlands, their buffers, or expanded buffers in the Chesapeake Bay Critical Area do not complete these blocks.

4. REDUCTION OF IMPACTS: Explain measures taken or considered to avoid or minimize wetlands losses in F. also check items A-E if any of these apply to your project.

- A. X Reduced the area of disturbance
B. Reduced size/scope of project
C. Relocated structures
D. X Redesigned project
E. Other

F. Explanation: See the attached report.

Describe reasons why impacts were not avoided or reduced in Q. Also check items G-P that apply to your project.

- Cost
- Extensive wetlands on site
- I.  Engineering/design Constraints
- J.  Other natural features
- K.  Parcel size
- L.  Other regulatory requirements
- M.  Failure to accomplish project purpose
- N.  Safety/public welfare issue
- O.  Inadequate zoning
- P.  Other

Q. Description See the attached report.

5. LETTER OF EXEMPTION: If you are applying for a letter of exemption for activities in nontidal wetlands and/or their buffers, explain why the project qualifies:

- A.  No significant plant or wildlife value and wetland impacts:
  - 1  Less than 5,000 square feet
  - 2  In an isolated nontidal wetland less than 1 acre in size
- B.  Repair existing structure/fill
- C.  Mitigation Project
- D.  Utility Line
  - 1  overhead
  - 2  underground
- E.  Other (explain)
- F.  Check here if you are not applying for a letter of exemption

IF YOU ARE APPLYING FOR A LETTER OF EXEMPTION, PROCEED TO BLOCK 11

6. ALTERNATIVE SITE ANALYSIS: Explain why other sites that were considered for this project were rejected in M. Also check any items in E-M if they apply to your project. (If you are applying for a letter of exemption, do not complete this block):

- 1 site
- B.  2-4 sites
- C.  5 or more sites

Alternative sites were rejected/not considered for the following reason(s):

- D.  Cost
- E.  Lack of availability
- F.  Failure to meet project purpose
- G.  Located outside general/market area
- H.  Greater wetlands impact
- I.  Water dependency
- J.  Inadequate zoning
- K.  Engineering/design constraints
- L.  Other

M. Explanation See the attached report.

7. PUBLIC NEED: Describe the public need or benefits that the project will provide in F. Also check items in A-E that apply to your project. (If you are applying for a letter of exemption, do not complete this block):

- A.  Economic
- B.  Safety
- C.  Health/welfare
- D.  Does not provide public benefits
- E.  Other

F. Description See the attached report.

**8. OTHER APPROVALS NEEDED/GRANTED:**

A. Agency	B. Date Sought	C. Decision		D. Decision Date	E. Other Status
		1. Granted	2. Denied		
MDE- Stormwater Mgmt	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

**9. MITIGATION PLAN:** Please provide the following information:

a. Description of a monetary compensation proposal, if applicable (For State requirements only). Attach another sheet if necessary.  
N/A

b. Give a brief description of the proposed mitigation project See the attached report.

c. Describe why you selected your proposed mitigation site, including what other areas were considered and why they were rejected.  
See the attached report.

d. Describe how the mitigation site will be protected in the future. See the attached report.

**10. HAVE ADJACENT PROPERTY OWNERS BEEN NOTIFIED?:** A. \_\_\_\_\_ Yes B. X No

Provide names and mailing addresses below (Use separate sheet if necessary):

- a. See Attachment B.
- b. \_\_\_\_\_
- c. \_\_\_\_\_

**11. HISTORIC PROPERTIES:** Is your project located in the vicinity of historic properties? (For example: structures over 50 years old. Archeological sites, shell mounds, Indian or Colonial artifacts). Provide any supplemental information in section 13.

A. X Yes B. \_\_\_\_\_ No C. \_\_\_\_\_ Unknown

**12. ADDITIONAL INFORMATION:** Use this space for detailed responses to any of the previous items. Attach another sheet if necessary:

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Check box if data is enclosed for any one or more of the following (See checklist for required information):

A.  Soil borings

D.  Field surveys

G.  Site plan

B.  Wetland data sheets

E.  Alternative site analysis

H.  Avoidance and minimization

Photographs

F.  Market analysis

analysis

Other (explain) \_\_\_\_\_

**CERTIFICATION:**

I hereby designate and authorize the agent named above to act on my behalf in the processing of this application and to furnish any information that is requested. I certify that the information on this form and on the attached plans and specifications is true and accurate to the best of my knowledge and belief. I understand that any of the agencies involved in authorizing the proposed works may request information in addition to that set forth herein as may be deemed appropriate in considering this proposal. I certify that all Waters of the United States have been identified and delineated on site, and that all jurisdictional wetlands have been delineated in accordance with the Corps of Engineers Wetland Delineation Manual, 1987. I grant permission to the agencies responsible for authorization of this work, or their duly authorized representative, to enter the project site for inspection purposes during working hours. I will abide by the conditions of the permit or license if issued and will not begin work without the appropriate authorization. I also certify that the proposed works are consistent with Maryland's Coastal Zone Management Plan. I understand that none of the information contained in the application form is confidential and that I may request that additional required information be considered confidential under applicable laws. I further understand that failure of the landowner to sign the application will result in the application being deemed incomplete.

LANDOWNER MUST SIGN:

  
Michael C. West

Date: 4-30-77

ATTACHMENT A

Activity	Wetland Type	Length (feet)	Width (feet)	Area (square feet)	Volume of Fill (cubic yards)
Road Crossing	Wetland	711	12.26	8,317	3.23
Outfall Construction	Stream	94	1.5	141	2.61
Lot Fill	Stream	570	1.5	855	15.83
	Wetland	83.2	450	37,847	14.02
Culvert	Stream	45	1.0	45	0.83
Aircraft Taxiway	Stream	620	2.5	1,550	28.70
	Wetland	46.2	40	1,848	0.68
Total					65.90

**ATTACHMENT B - Mailing labels are attached for your convenience.**

Northrup Grumman Corp.  
C/O Tax Department  
1840 Century Park East  
Los Angeles, CA 90067

Property at 1634 Fort Meade Road, Anne Arundel County, Maryland

Maryland State Highway Administration  
Real Estate Division  
300 West Preston Street  
Baltimore, MD 21203

Property at 7000 Amtrak Way, Anne Arundel County

Westland Investment Co.  
8355 Crestdale Court  
Cincinnati, OH 45236

Property at Elkridge Landing Road, Linthicum, Maryland

Marpac Corp.  
C/O Abraham L. Alder, Esq.  
20 South Charles Street, 10th Floor  
Baltimore, MD 21201

Property at Baltimore/Washington Parkway

National Railroad Passenger Co.  
400 North Capitol Street, NW  
Washington DC 20001

Nicholas B. Mangione  
1205 York Road  
Lutherville, MD 21093

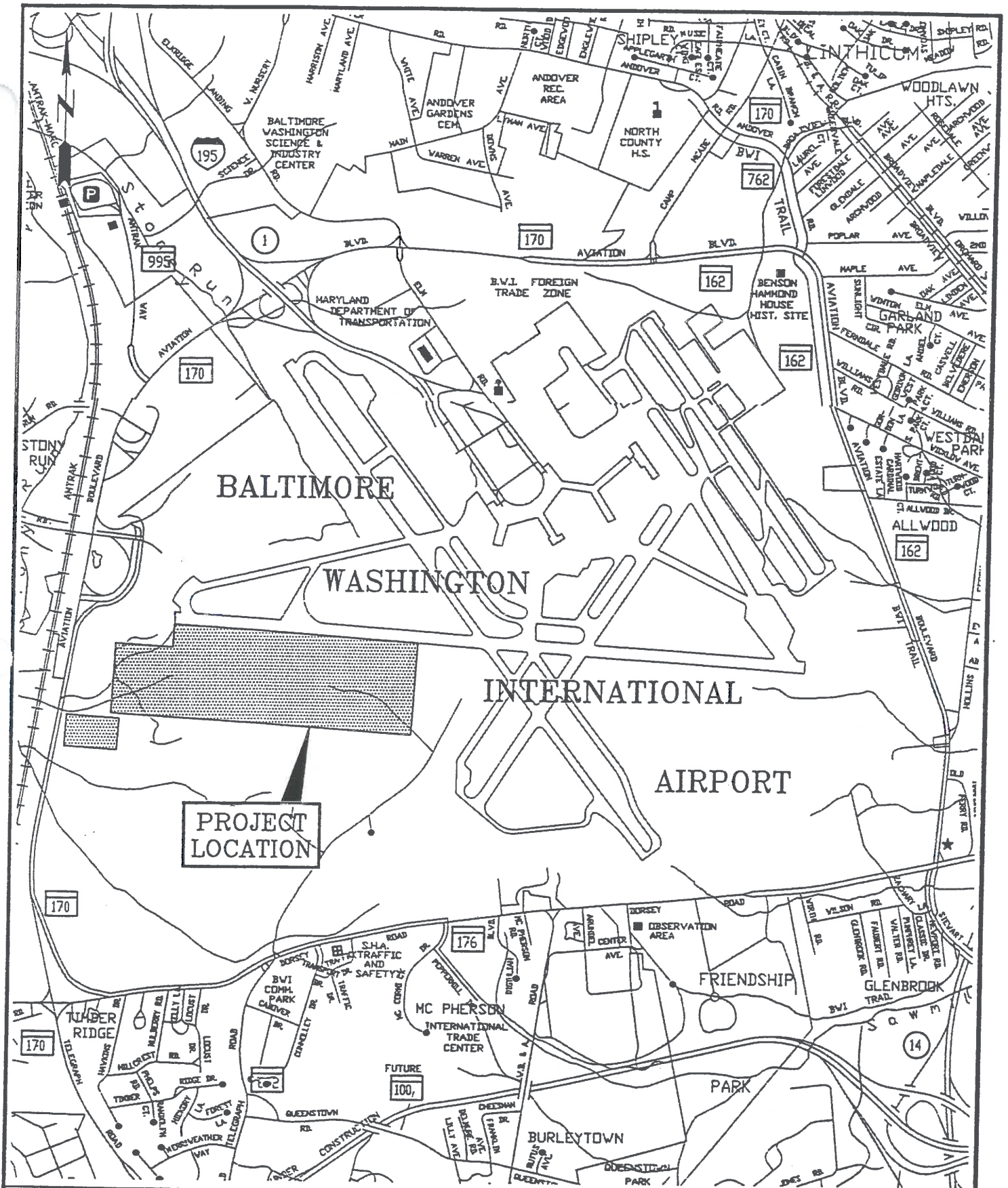
Property at Valley Road, Hanover, Maryland

The Honorable John Gary  
County Executive  
Arundel Center  
PO Box 2700  
Annapolis, MD 21404

Councilman George Bachman  
County Council  
Arundel Center  
PO Box 2700  
Annapolis, MD 21404

Senator Philip C. Jimeno  
House of Representatives  
402A Senate Office Building  
Annapolis, MD 21401

Delegate Joan Cadden  
House of Delegates  
213 Low House Building  
Annapolis, MD 21401



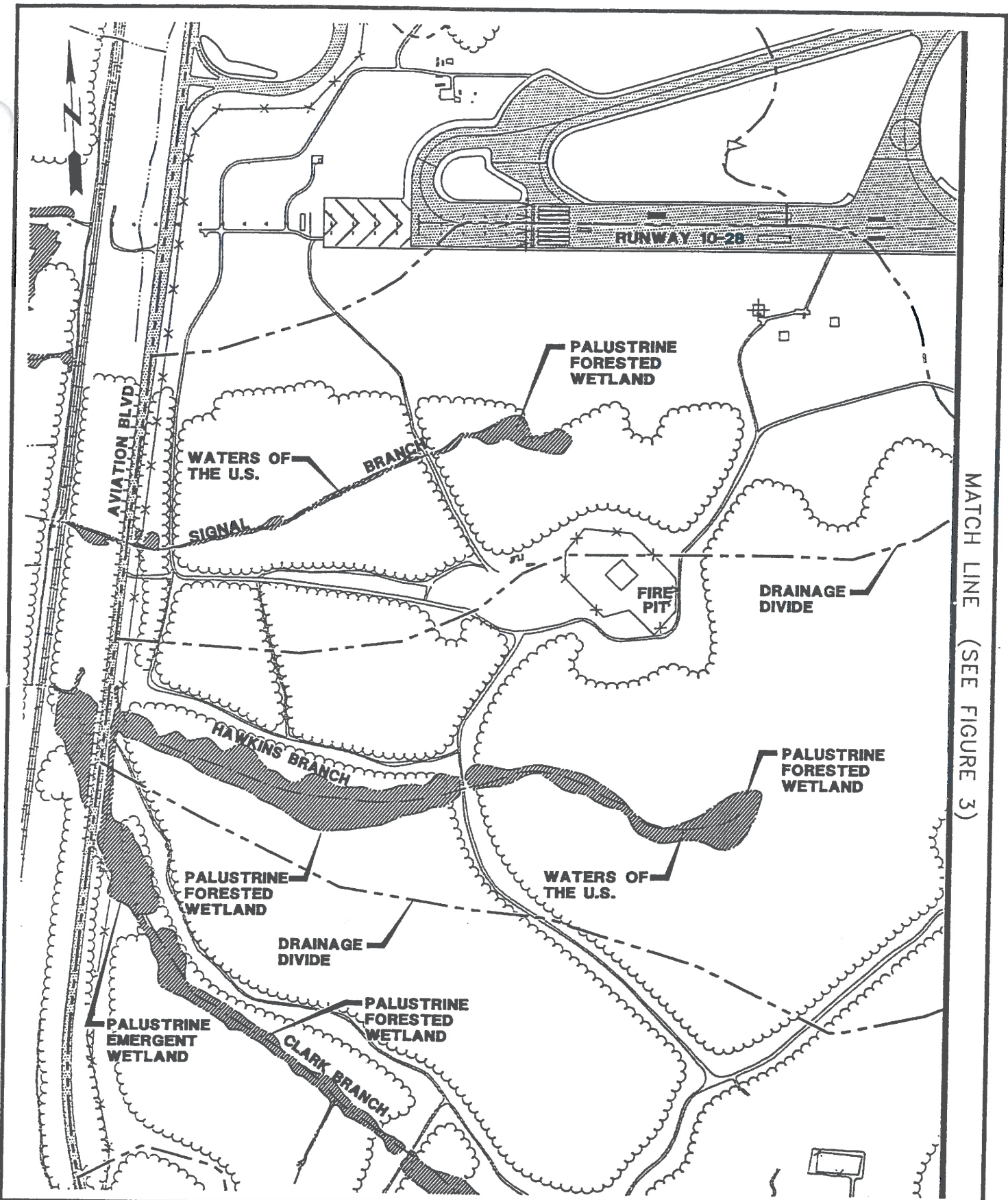
**URS Greiner**  
 CONSULTING ENGINEERING AND PLANNING  
 TIMONIUM, MARYLAND

MARYLAND DEPARTMENT OF TRANSPORTATION  
 MARYLAND AVIATION ADMINISTRATION  
 DIVISION OF ENGINEERING

**BWI** BALTIMORE/WASHINGTON  
 INTERNATIONAL AIRPORT

PROJECT TITLE <b>PROPOSED MIDFIELD CARGO COMPLEX</b>	
SHEET TITLE <b>PROJECT LOCATION MAP</b>	
SCALE 1" = 2000'	FIGURE NO. 1
DATE MAY 1997	






MATCH LINE (SEE FIGURE 3)

**URS Greiner**  
 CONSULTING ENGINEERING AND PLANNING  
 TIMONIUM, MARYLAND

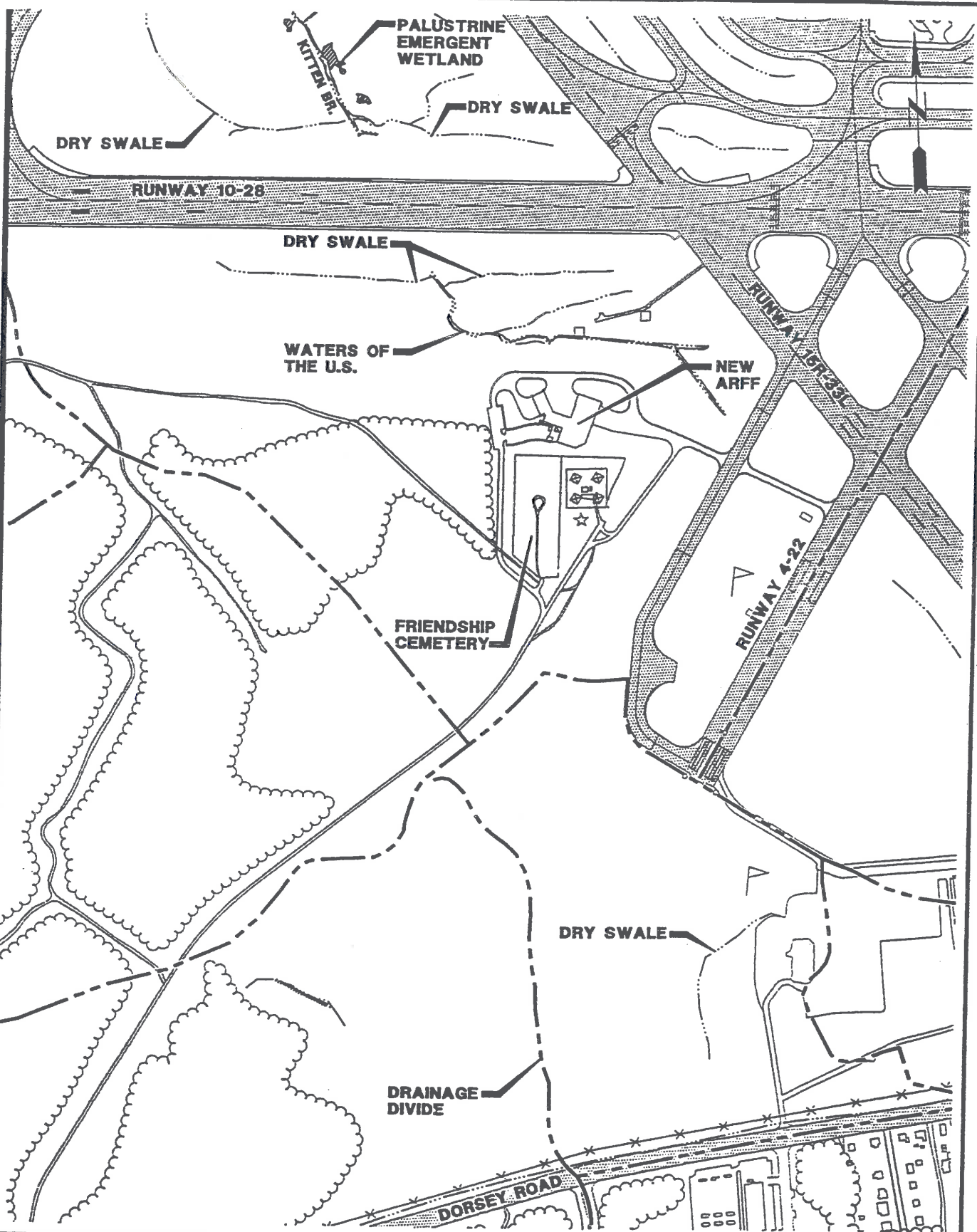
MARYLAND DEPARTMENT OF TRANSPORTATION  
 MARYLAND AVIATION ADMINISTRATION  
 DIVISION OF ENGINEERING



**BWI** BALTIMORE/WASHINGTON  
 INTERNATIONAL AIRPORT

PROJECT TITLE <b>PROPOSED MIDFIELD CARGO COMPLEX</b>	
SHEET TITLE <b>WETLAND LOCATION MAP</b>	
SCALE 1" = 600'	FIGURE NO. 2
DATE MAY 1997	

MATCH LINE (SEE FIGURE 2)



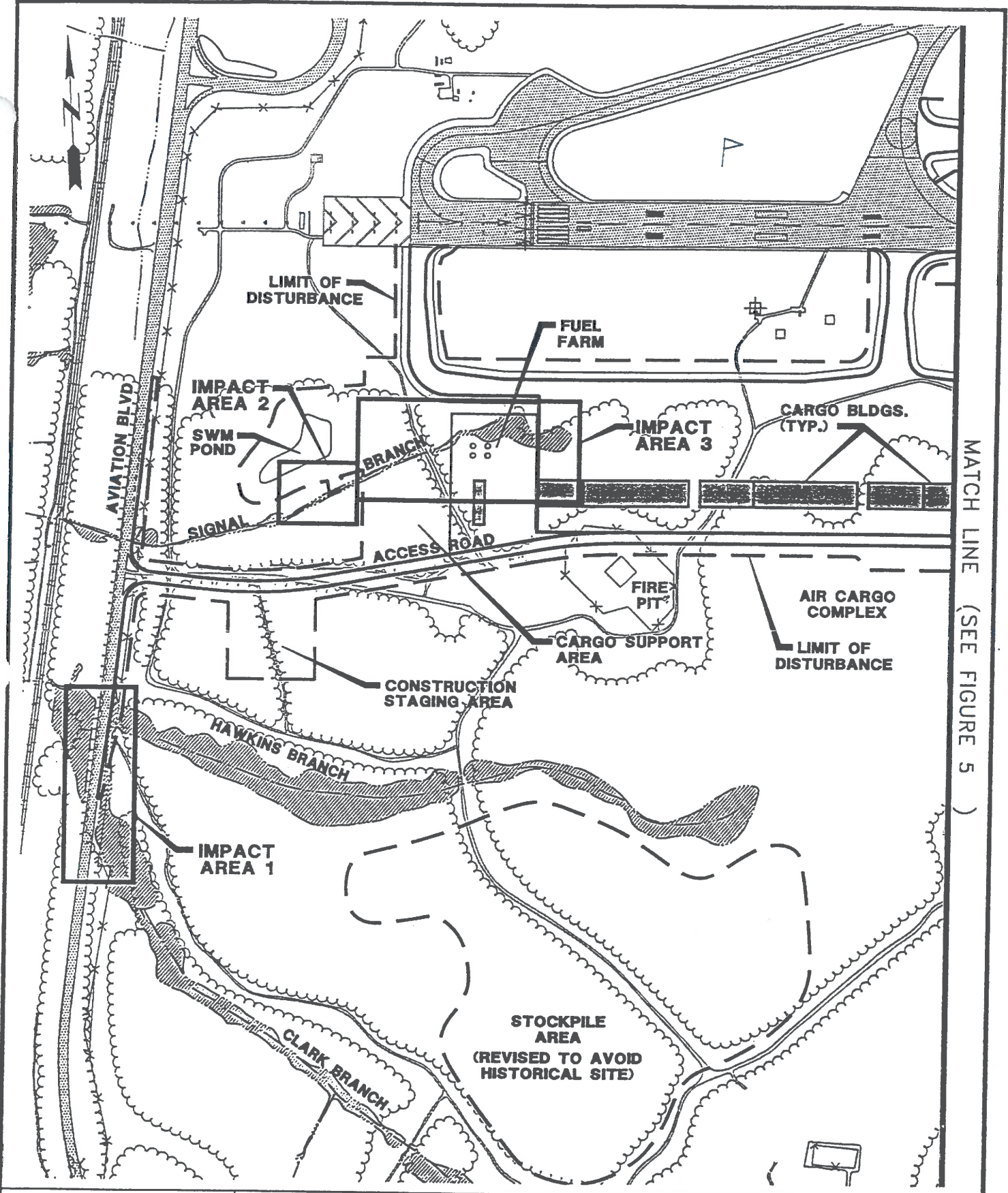
**URS Greiner**  
 CONSULTING ENGINEERING AND PLANNING  
 TIMONIUM, MARYLAND



MARYLAND DEPARTMENT OF TRANSPORTATION  
 MARYLAND AVIATION ADMINISTRATION  
 DIVISION OF ENGINEERING

**BWI** BALTIMORE/WASHINGTON  
 INTERNATIONAL AIRPORT

PROJECT TITLE		FIGURE NO.
PROPOSED MIDFIELD CARGO COMPLEX		
SHEET TITLE		3
WETLAND LOCATION MAP		
SCALE	DATE	
1" = 600'	MAY 1997	



MATCH LINE (SEE FIGURE 5 )

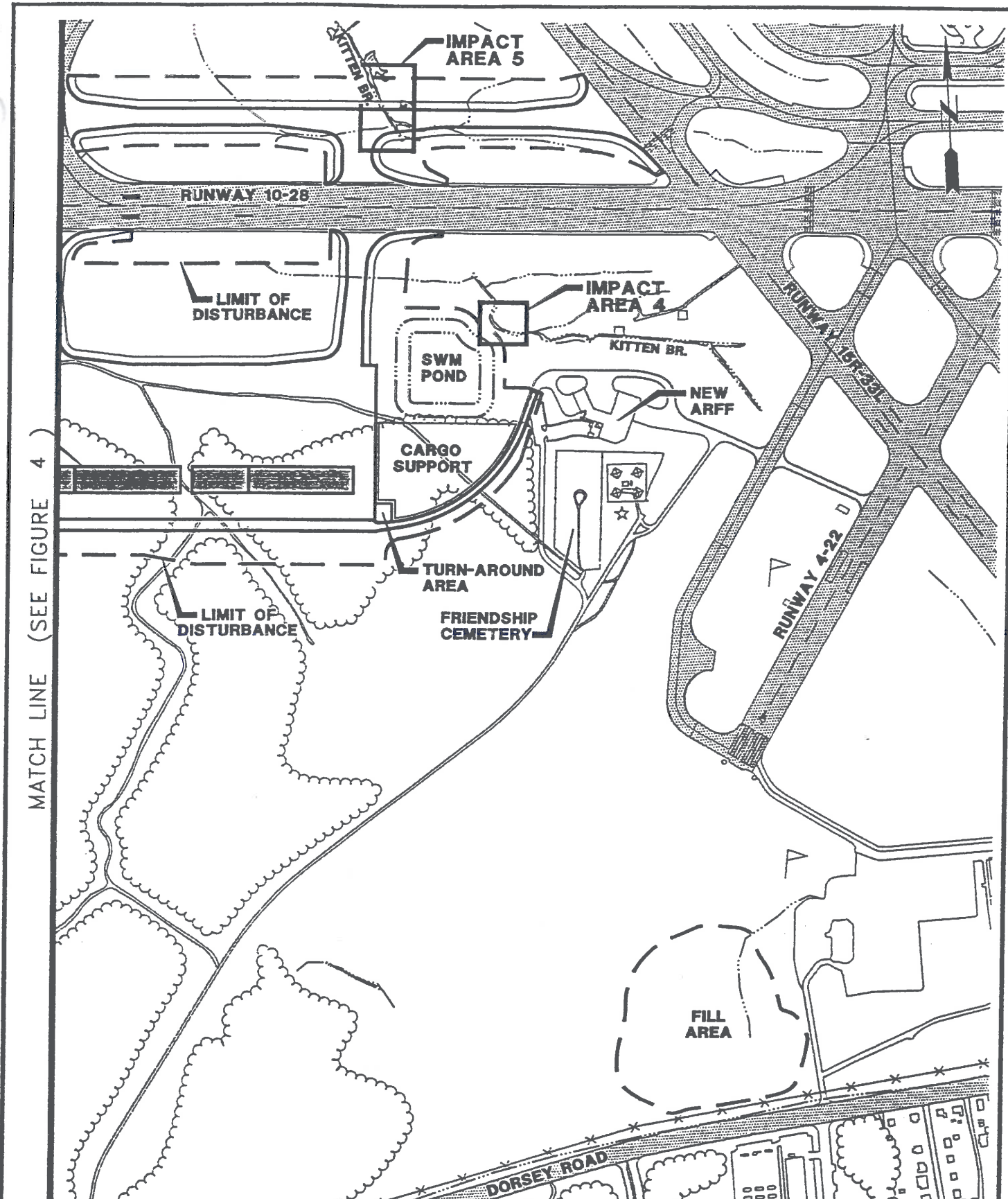
**URS Greiner**  
 CONSULTING ENGINEERING AND PLANNING  
 TIMONIUM, MARYLAND



MARYLAND DEPARTMENT OF TRANSPORTATION  
 MARYLAND AVIATION ADMINISTRATION  
 DIVISION OF ENGINEERING

**BWI** BALTIMORE/WASHINGTON  
 INTERNATIONAL AIRPORT

PROJECT TITLE <b>PROPOSED MIDFIELD CARGO COMPLEX</b>	
SHEET TITLE <b>WETLAND IMPACT LOCATION MAP</b>	
SCALE 1" = 600'	FIGURE NO. 4
DATE MAY 1997	

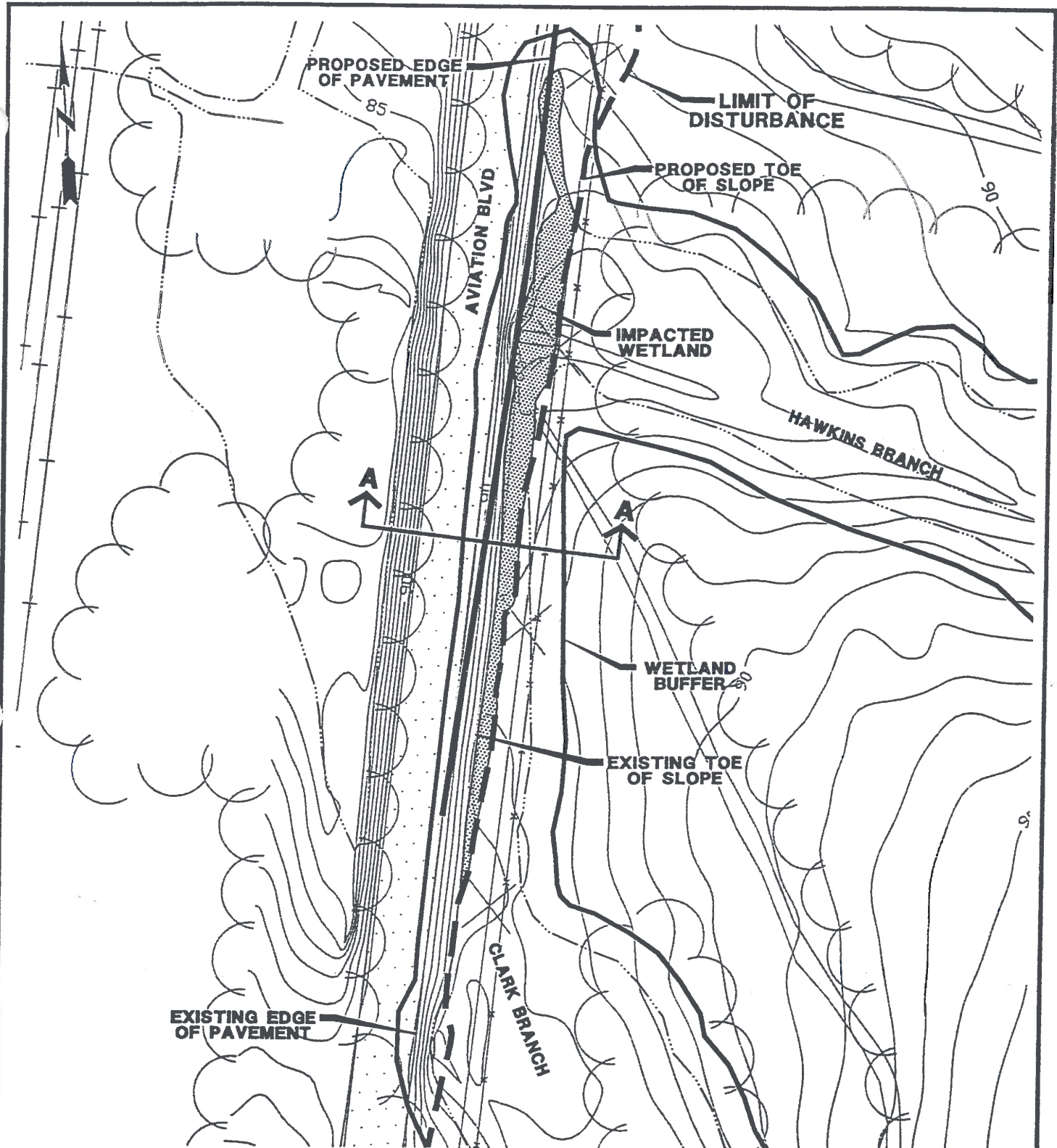


**URS Greiner**  
 CONSULTING ENGINEERING AND PLANNING  
 TIMONIUM, MARYLAND

MARYLAND DEPARTMENT OF TRANSPORTATION  
 MARYLAND AVIATION ADMINISTRATION  
 DIVISION OF ENGINEERING

**BWI** BALTIMORE/WASHINGTON INTERNATIONAL AIRPORT

PROJECT TITLE <b>PROPOSED MIDFIELD CARGO COMPLEX</b>	
SHEET TITLE <b>WETLAND IMPACT LOCATION MAP</b>	
SCALE 1" = 600'	FIGURE NO. <b>5</b>
DATE MAY 1997	



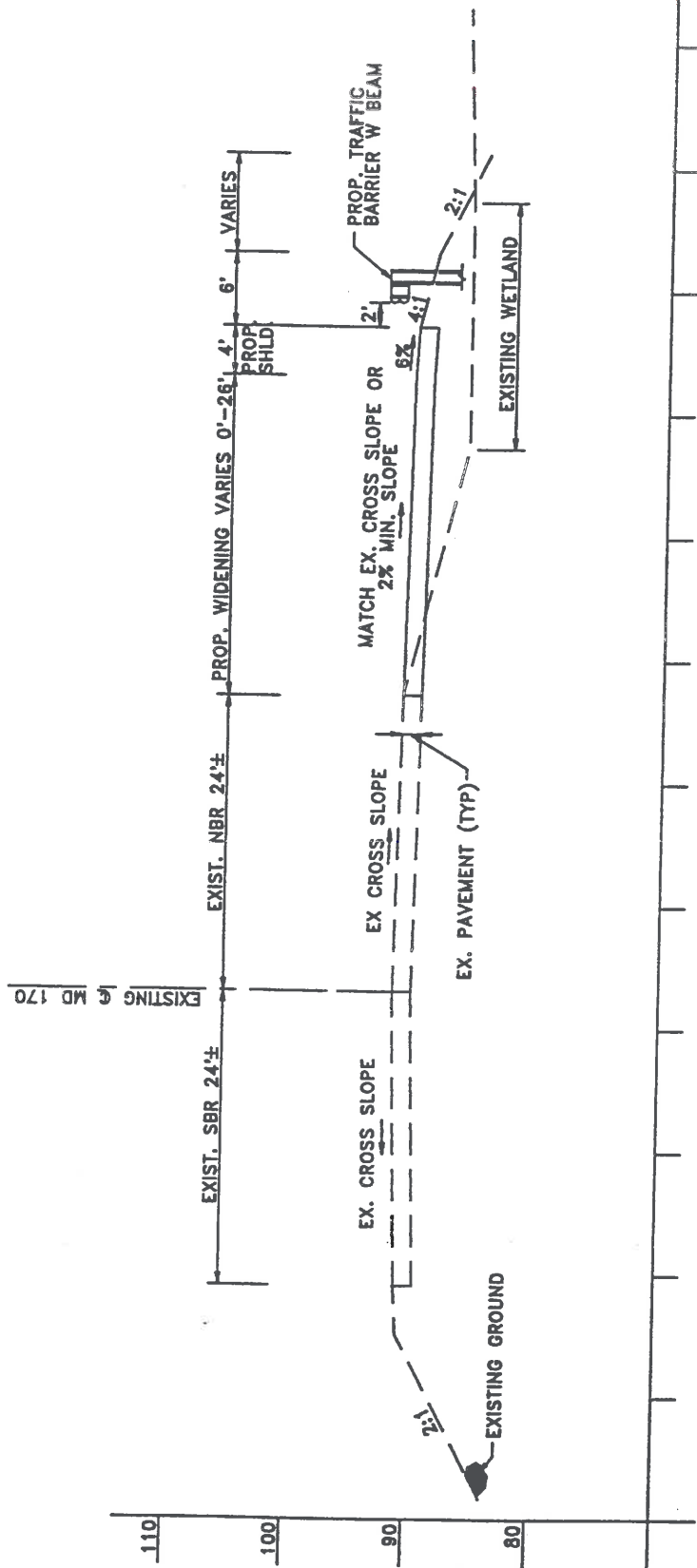
IMPACT AREA 1	
WETLAND AREA	8726 SQ.FT.
25' WETLAND BUFFER AREA	23503 SQ.FT.
WATERS OF THE U.S. AREA	45 L.F.

**URS Greiner**  
 CONSULTING ENGINEERING AND PLANNING  
 TIMONIUM, MARYLAND



MARYLAND DEPARTMENT OF TRANSPORTATION  
 MARYLAND AVIATION ADMINISTRATION  
 DIVISION OF ENGINEERING  
**BWI** BALTIMORE/WASHINGTON  
 INTERNATIONAL AIRPORT

PROJECT TITLE <b>PROPOSED MIDFIELD CARGO COMPLEX</b>	
SHEET TITLE <b>WETLAND IMPACT AREA 1</b>	
SCALE 1" = 100'	FIGURE NO. <b>6</b>
DATE MAY 1997	



**TYPICAL SECTION A-A**  
**AVIATION BOULEVARD (MD 170) WIDENING**

**URS Greiner**

CONSULTING ENGINEERING AND PLANNING  
 TIMONIUM, MARYLAND

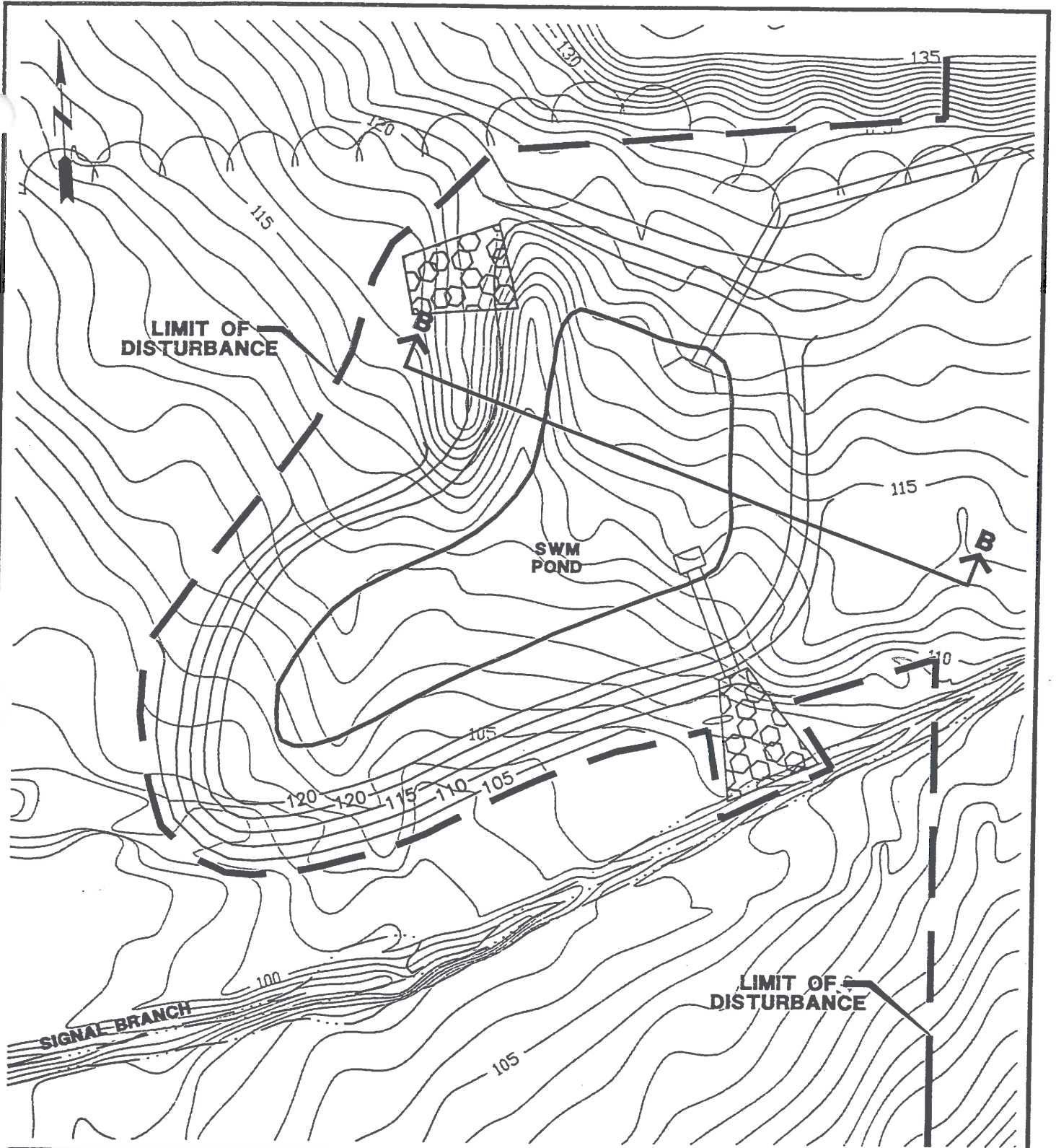


**BWI**

BALTIMORE/WASHINGTON  
 INTERNATIONAL AIRPORT

MARYLAND DEPARTMENT OF TRANSPORTATION  
 MARYLAND AVIATION ADMINISTRATION  
 DIVISION OF ENGINEERING

PROJECT TITLE		FIGURE NO.
PROPOSED MIDFIELD CARGO COMPLEX		7
SHEET TITLE		
IMPACT AREA 1 - TYPICAL SECTION		
SCALE		
HORIZ. 1"=150' VERT. 1"=15'		
DATE		
MAY 1997		



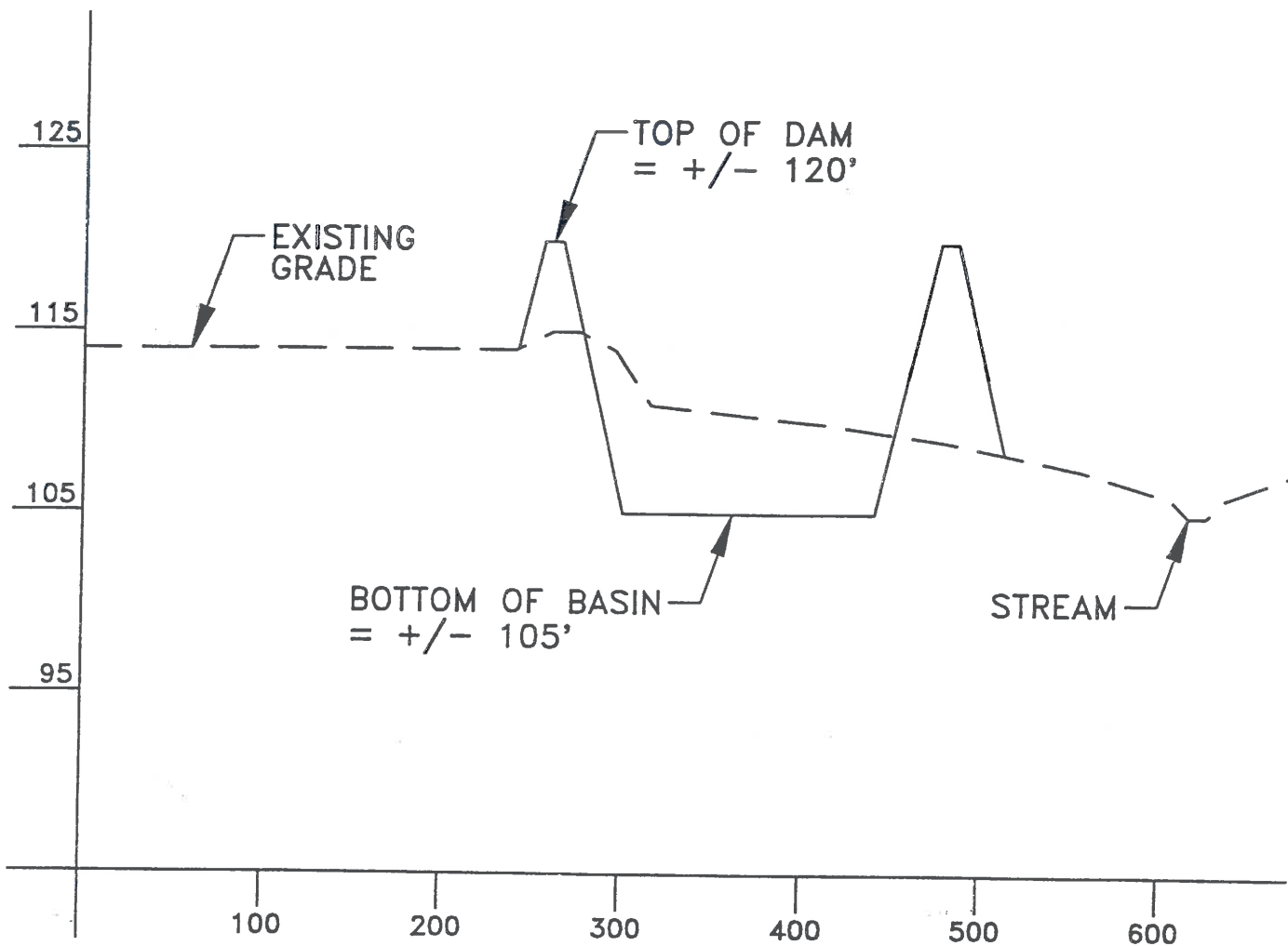
IMPACT AREA 2	
WETLAND AREA	0 SQ.FT.
25' WETLAND BUFFER AREA	0 SQ.FT.
WATERS OF THE U.S. AREA	47 L.F.

**URS Greiner**  
 CONSULTING ENGINEERING AND PLANNING  
 TIMONIUM, MARYLAND



MARYLAND DEPARTMENT OF TRANSPORTATION  
 MARYLAND AVIATION ADMINISTRATION  
 DIVISION OF ENGINEERING  
**BWI** BALTIMORE/WASHINGTON  
 INTERNATIONAL AIRPORT

PROJECT TITLE <b>PROPOSED MIDFIELD CARGO COMPLEX</b>	
SHEET TITLE <b>WETLAND IMPACT AREA 2</b>	
SCALE 1" = 100'	FIGURE NO. <b>8</b>
DATE MAY 1997	



TYPICAL SECTION B-B  
WESTERN POND

**URS Greiner**

CONSULTING ENGINEERING AND PLANNING  
TIMONIUM, MARYLAND



**BWI**

BALTIMORE/WASHINGTON  
INTERNATIONAL AIRPORT

MARYLAND DEPARTMENT OF TRANSPORTATION  
MARYLAND AVIATION ADMINISTRATION  
DIVISION OF ENGINEERING

PROJECT TITLE  
**PROPOSED MIDFIELD CARGO COMPLEX**

SHEET TITLE  
**IMPACT AREA 2 - TYPICAL SECTION**

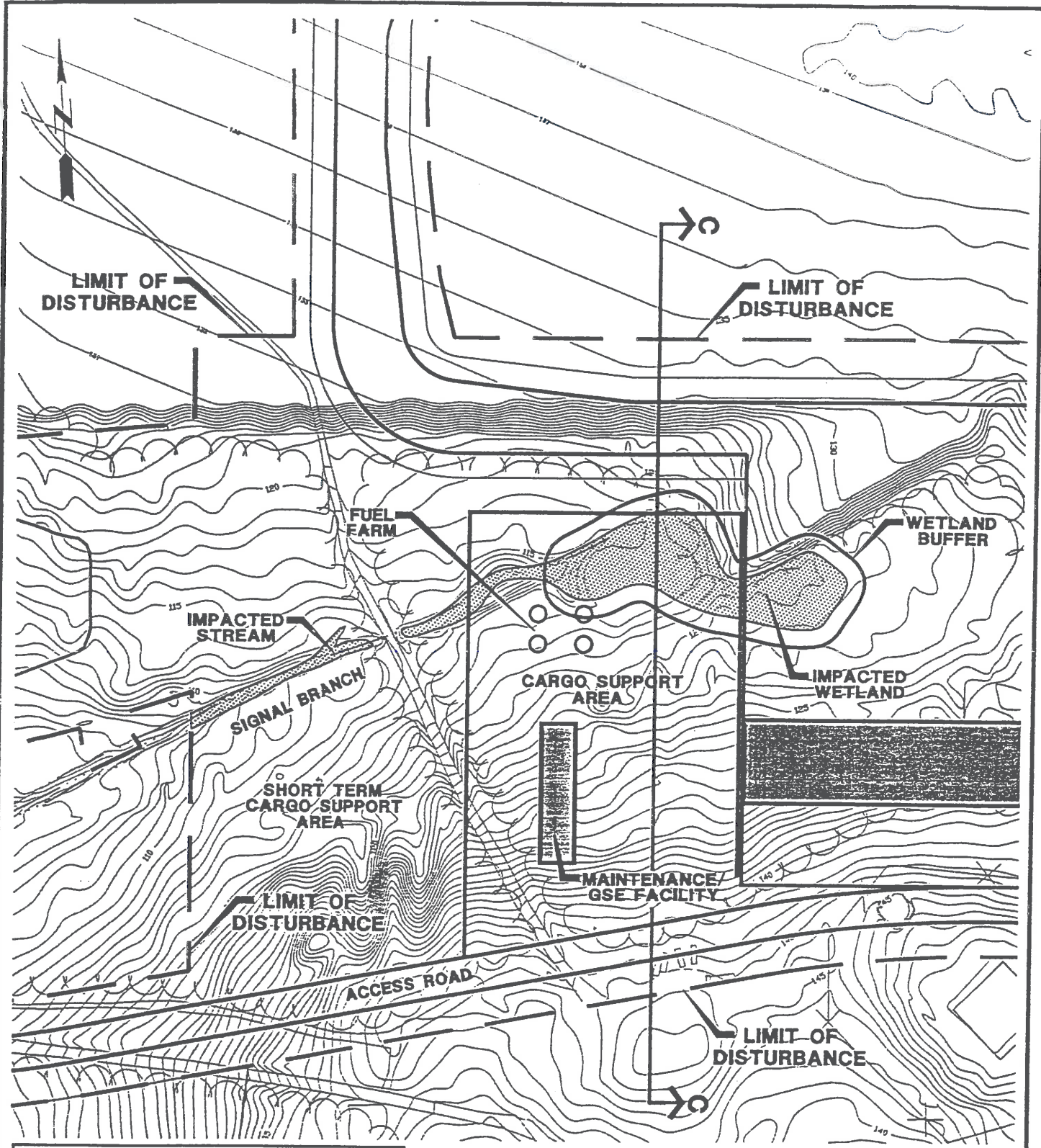
SCALE  
HORIZ. 1"=100' VERT. 1"=10'

DATE  
MAY 1997

FIGURE NO.

9





IMPACT AREA 3	
WETLAND AREA	37847 SQ.FT.
25' WETLAND BUFFER AREA	26589 SQ.FT.
WATERS OF THE U.S. AREA	570 L.F.

**URS Greiner**  
 CONSULTING ENGINEERING AND PLANNING  
 TIMONIUM, MARYLAND

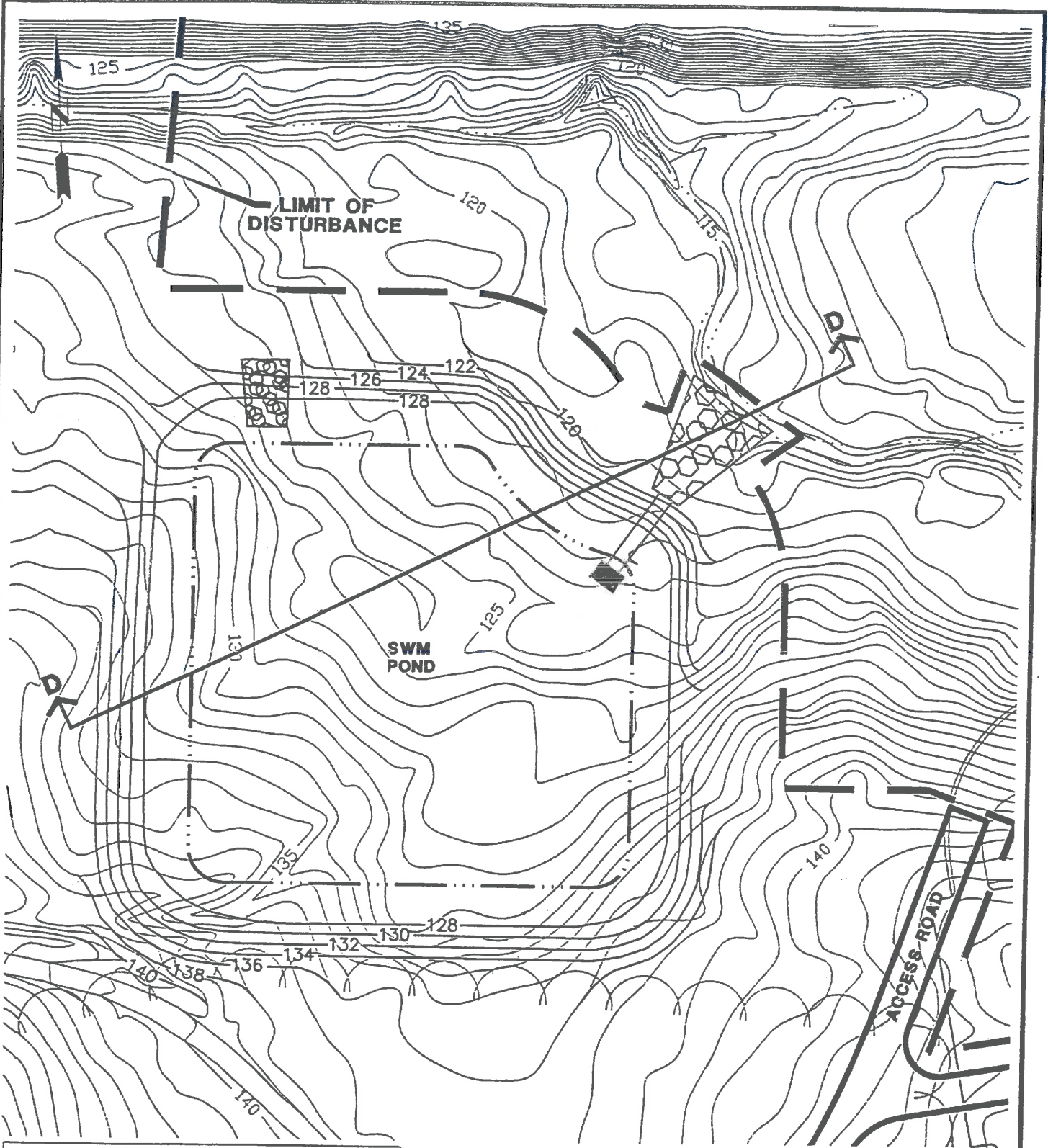


MARYLAND DEPARTMENT OF TRANSPORTATION  
 MARYLAND AVIATION ADMINISTRATION  
 DIVISION OF ENGINEERING

**BWI** BALTIMORE/WASHINGTON  
 INTERNATIONAL AIRPORT

PROJECT TITLE <b>PROPOSED MIDFIELD CARGO COMPLEX</b>	
SHEET TITLE <b>WETLAND IMPACT AREA 3</b>	
SCALE 1" = 200'	FIGURE NO. 10
DATE MAY 1997	





IMPACT AREA 4	
WETLAND AREA	0 SQ.FT.
25' WETLAND BUFFER AREA	0 SQ.FT.
WATERS OF THE U.S. AREA	47 L.F.

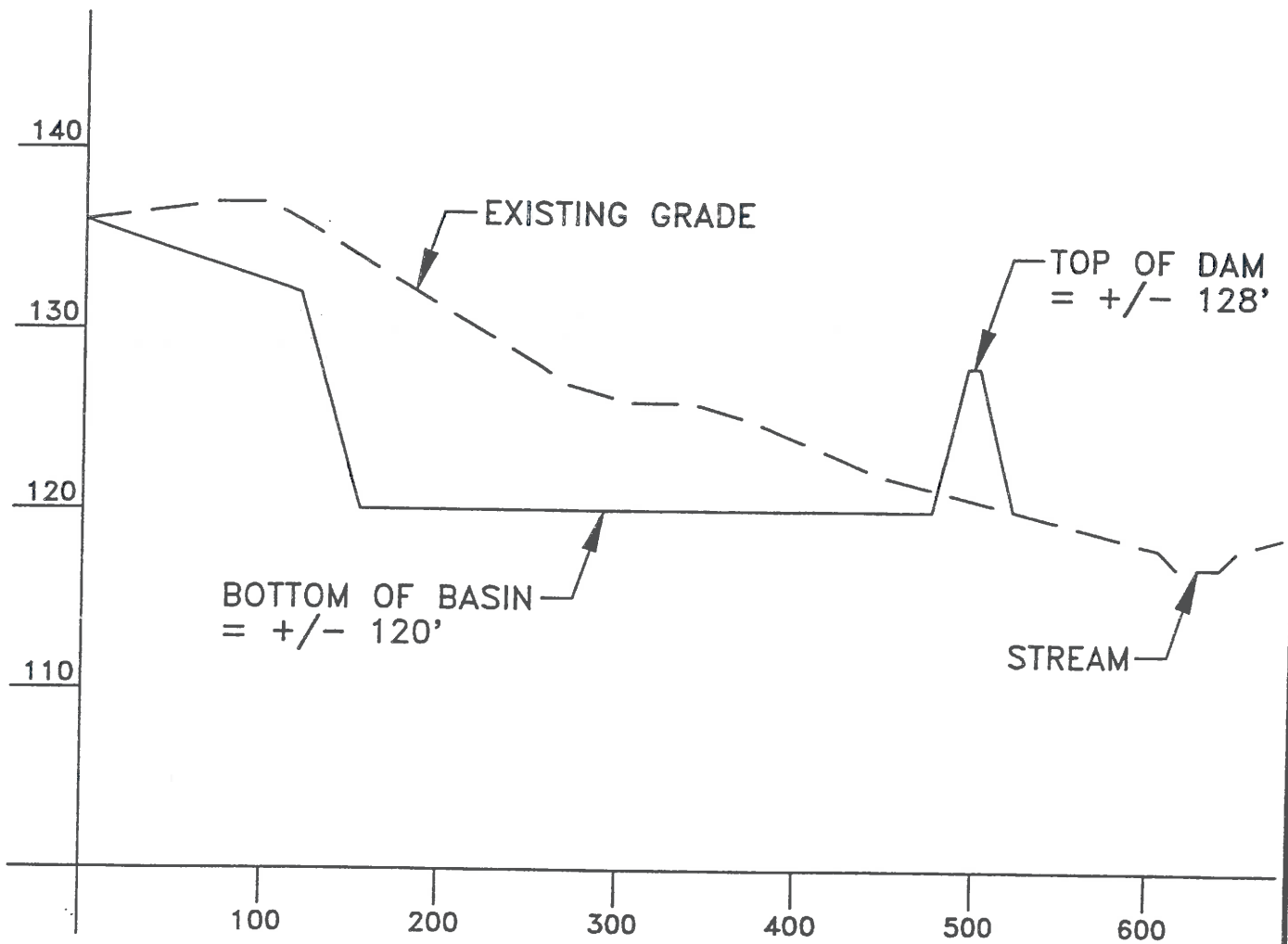
**URS Greiner**  
 CONSULTING ENGINEERING AND PLANNING  
 TIMONIUM, MARYLAND



MARYLAND DEPARTMENT OF TRANSPORTATION  
 MARYLAND AVIATION ADMINISTRATION  
 DIVISION OF ENGINEERING

**BWI** BALTIMORE/WASHINGTON  
 INTERNATIONAL AIRPORT

PROJECT TITLE <b>PROPOSED MIDFIELD CARGO COMPLEX</b>	
SHEET TITLE <b>WETLAND IMPACT AREA 4</b>	
SCALE 1" = 100'	FIGURE NO. 12
DATE MAY 1997	



TYPICAL SECTION D-D  
EASTERN POND

**URS Greiner**

CONSULTING ENGINEERING AND PLANNING  
TIMONIUM, MARYLAND



**BWI**

BALTIMORE/WASHINGTON  
INTERNATIONAL AIRPORT

MARYLAND DEPARTMENT OF TRANSPORTATION  
MARYLAND AVIATION ADMINISTRATION  
DIVISION OF ENGINEERING

PROJECT TITLE  
**PROPOSED MIDFIELD CARGO COMPLEX**

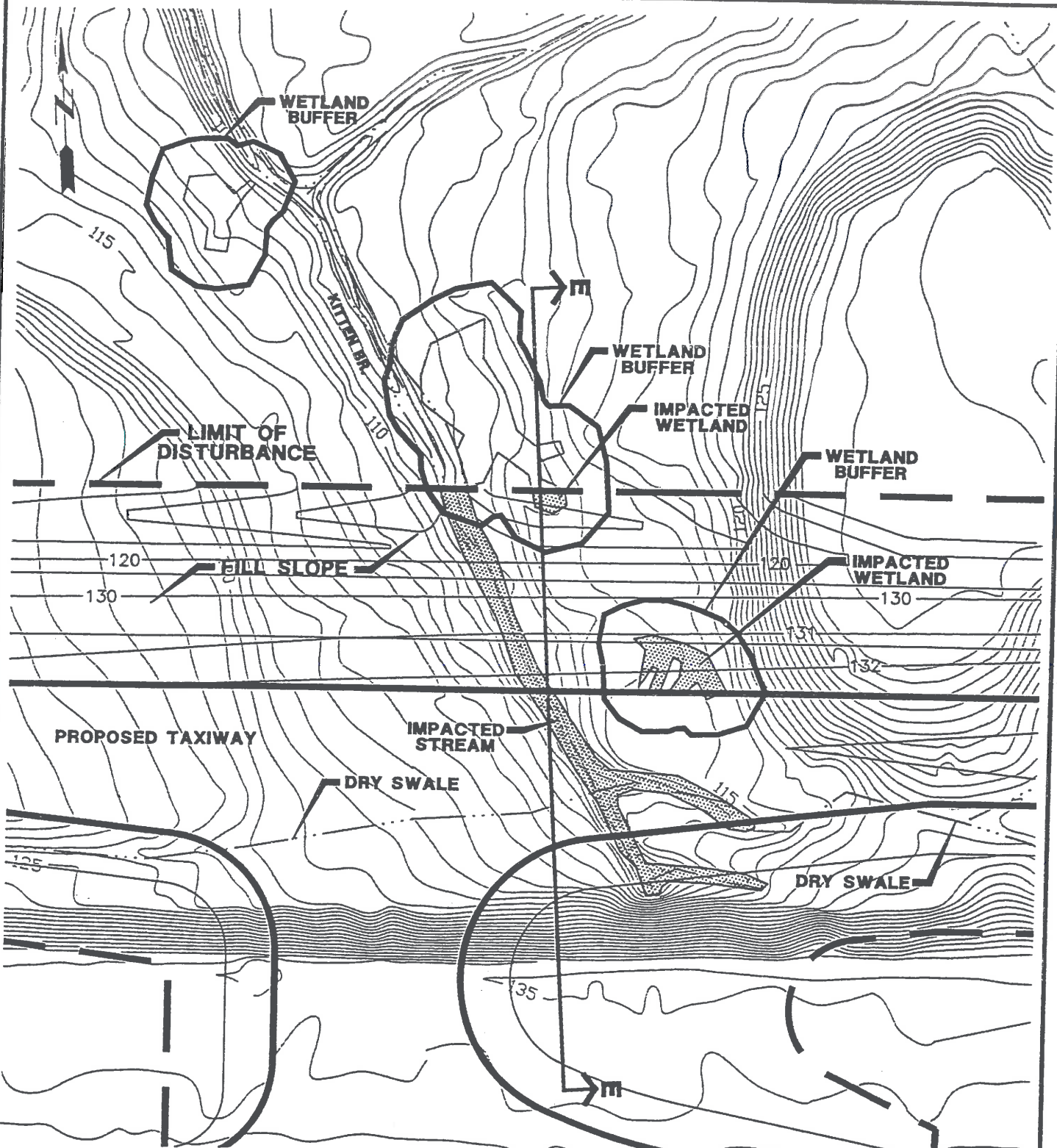
SHEET TITLE  
**IMPACT AREA 4 - TYPICAL SECTION**

SCALE  
HORIZ. 1"=100' VERT. 1"=10'

DATE  
MAY 1997

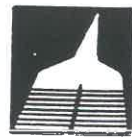
FIGURE NO.

13



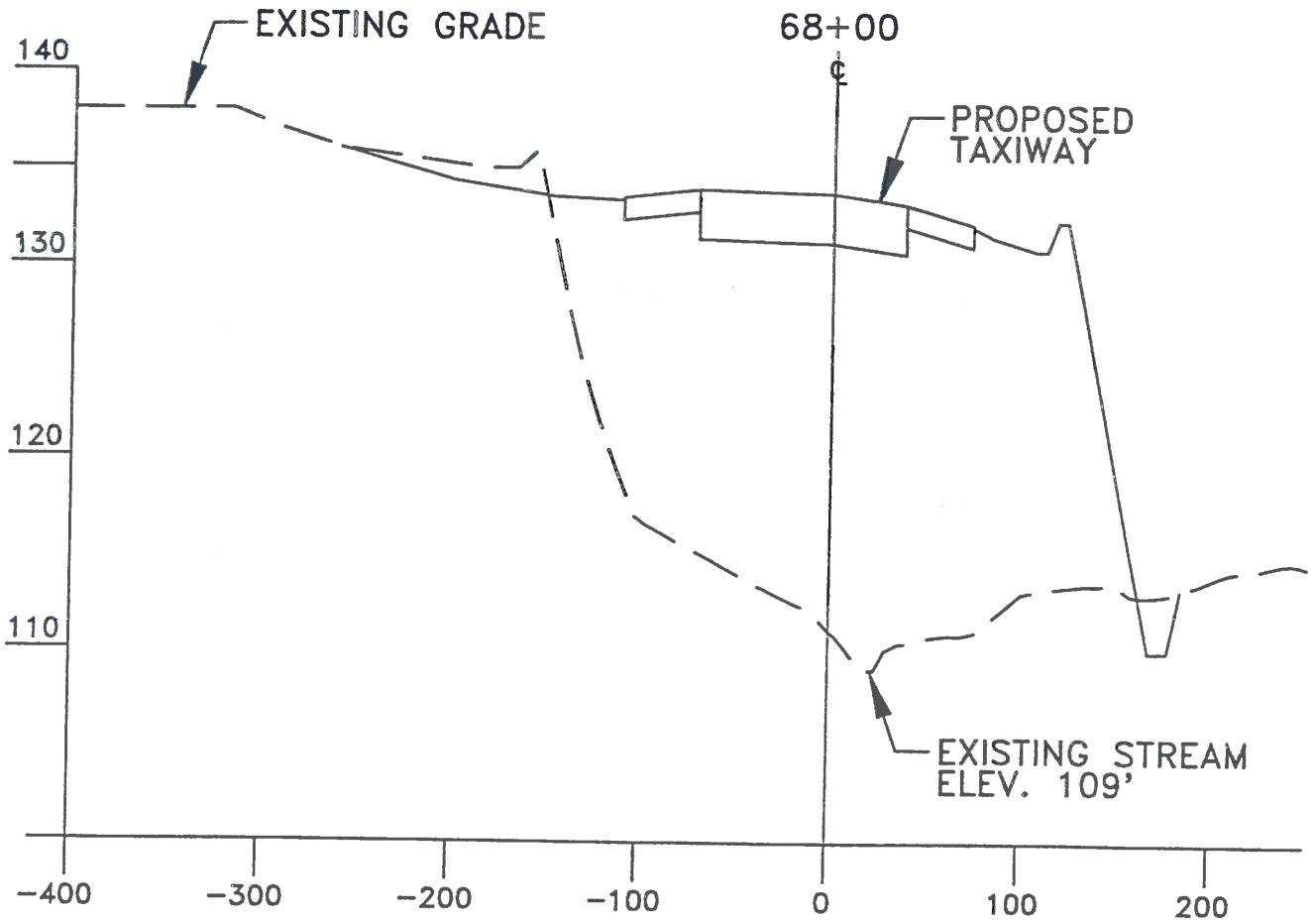
IMPACT AREA 5	
WETLAND AREA	1848 SQ.FT.
25' WETLAND BUFFER AREA	10462 SQ.FT.
WATERS OF THE U.S. AREA	620.0 L.F.

**URS Greiner**  
 CONSULTING ENGINEERING AND PLANNING  
 TIMONIUM, MARYLAND



MARYLAND DEPARTMENT OF TRANSPORTATION  
 MARYLAND AVIATION ADMINISTRATION  
 DIVISION OF ENGINEERING  
**BWI** BALTIMORE/WASHINGTON  
 INTERNATIONAL AIRPORT

PROJECT TITLE <b>PROPOSED MIDFIELD CARGO COMPLEX</b>	
SHEET TITLE <b>WETLAND IMPACT AREA 5</b>	
SCALE 1" = 100'	FIGURE NO. 14
DATE MAY 1997	



TYPICAL SECTION E-E  
PROPOSED TAXIWAY

**URS Greiner**

CONSULTING ENGINEERING AND PLANNING  
TIMONIUM, MARYLAND



**BWI**

BALTIMORE/WASHINGTON  
INTERNATIONAL AIRPORT

MARYLAND DEPARTMENT OF TRANSPORTATION  
MARYLAND AVIATION ADMINISTRATION  
DIVISION OF ENGINEERING

PROJECT TITLE  
**PROPOSED MIDFIELD CARGO COMPLEX**

SHEET TITLE  
**IMPACT AREA 5 - TYPICAL SECTION**

SCALE  
HORIZ. 1"=100' VERT. 1"=10'

DATE  
MAY 1997

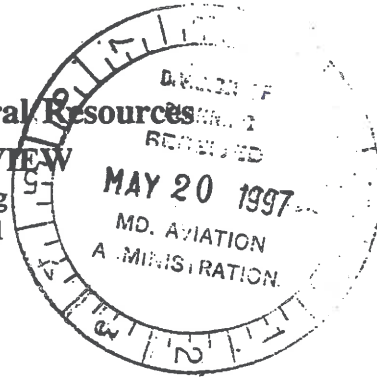
FIGURE NO.  
**15**

Parris N. Glendening  
Governor



Maryland Department of Natural Resources  
ENVIRONMENTAL REVIEW

Tawes State Office Building  
Annapolis, Maryland 21401  
May 9, 1997



John R. Griffin  
Secretary

Carolyn D. Davis  
Deputy Secretary

Ms. Barbara Grey  
Manager, Environmental Planning  
Maryland Aviation Administration  
Maryland Department of Transportation  
P.O. Box 8766  
BWI Airport, Maryland 21240-0766

RE: Draft EA, BWI Air Cargo Terminal Expansion

Dear Ms. Grey:

This is in follow up to our meeting of April 7, 1997 regarding Department of Natural Resources concerns about information provided in the Draft Environmental Assessment for the Air Cargo Terminal Expansion at Baltimore/Washington International Airport. Most of Department of Natural Resources concerns were addressed at this meeting.

At our meeting your consultant, URI Greiner, provided information on the recent changes in the air cargo industry and associated truck delivery systems; a detailed explanation of the limitations of the four alternate site locations; and an overview of the revised Alternative 4R.

This presentation described reduced stream impacts, stormwater and deicer management plans, and wooded buffers around streams and stormwater management facilities. You also indicated that you are working on a status report on the regional stormwater management plan which relays heavily on the use of bioretention designs for both quantity and quality control. We request that a copy of this report be sent to us as soon as it is finished. We encourage you to publicize your innovations in stormwater management so that they can provide a model for other commercial developments.

Thank you for addressing our concerns about this project. We look forward to receiving your stormwater management plan update. If you have any further questions about our review process, please contact Kate Meade of my staff at (410) 974-2788.

Sincerely,

A handwritten signature in cursive script, appearing to read "Ray C. Dintaman, Jr.".

Ray C. Dintaman, Jr., Director  
Environmental Review Unit

RCD:CDM



U.S. Department  
of Transportation

Federal Aviation  
Administration

# Memorandum

Subject: **INFORMATION:** BWI Airport Midfield Cargo Complex

Date: **MAY 15 1997**

From: Air Traffic Manager, Baltimore Tower

Reply to  
Attn of: L. Rex Chase  
(410) 859-7255

To: Manager, Airport District Office, Washington, D.C.

At a recent meeting with the Maryland Aviation Administration and the URS Greiner, Inc., to discuss the preliminary plans for the Midfield Cargo Complex at the BWI Airport, it became obvious there were potential safety problems associated with the location of the proposed parallel taxiway to be used by the Midfield Cargo Complex tenants. After a thorough review of the original plan, we recommend that the proposed parallel taxiway be constructed on the north side of Runway 10/28 instead of its original location on the south side of Runway 10/28.

Construction of the proposed south parallel taxiway would add to an already confusing intersection at the convergence of three runways (Runway 10/28, Runway 15R/33L, and Runway 4/22) and two taxiways (Taxiway E and D). The addition of a third taxiway at this intersection would add to already congested location.

The condition is further aggravated by the fact that Runway 4/22, although used primarily as a taxiway, is marked, lighted and signed as a runway. The configuration results in a difficult pavement marking, including the placement of two runway holding positions in close proximity to each other on the proposed taxiway. Another hold line for Runway 4/22 would be required. We believe this situation only adds to an intersection which has already been designated as a sensitive intersection. The intersection of Runway 10/28 and Taxiway E outbound from the main terminal area has been the scene of numerous incursions and near incursions. Baltimore Tower and the Maryland Aviation Administration (MAA) have been working on this problem continually to ensure all potential problems are addressed and corrected. The addition of the proposed south side parallel would only create another potential safety situation in the future.

The current Airport Layout Plan for BWI shows future construction of a parallel taxiway on the north side of Runway 10/28. Based on our safety concerns, we strongly recommend that the parallel taxiway for initial development of the Midfield Cargo Complex be constructed on the north side of Runway 10/28.

In addition, we also recommend the parallel taxiway begin at the approach end of Runway 10/28 and not at Taxiway G.



We also recommend that there be no runway closures during construction. Runway 10/28 is proposed to be closed for 25 midnight shifts of 8 hours each night. This will not include the weekend evenings. These closures are to accommodate the crossing of the runway to bring fill dirt from the Midfield Cargo Complex (south side of Runway 10/28) to the north side parallel taxiway.

Due to safety of personnel and aircraft, we strongly urge these proposals be considered.

  
Barbara J. Cogliandro

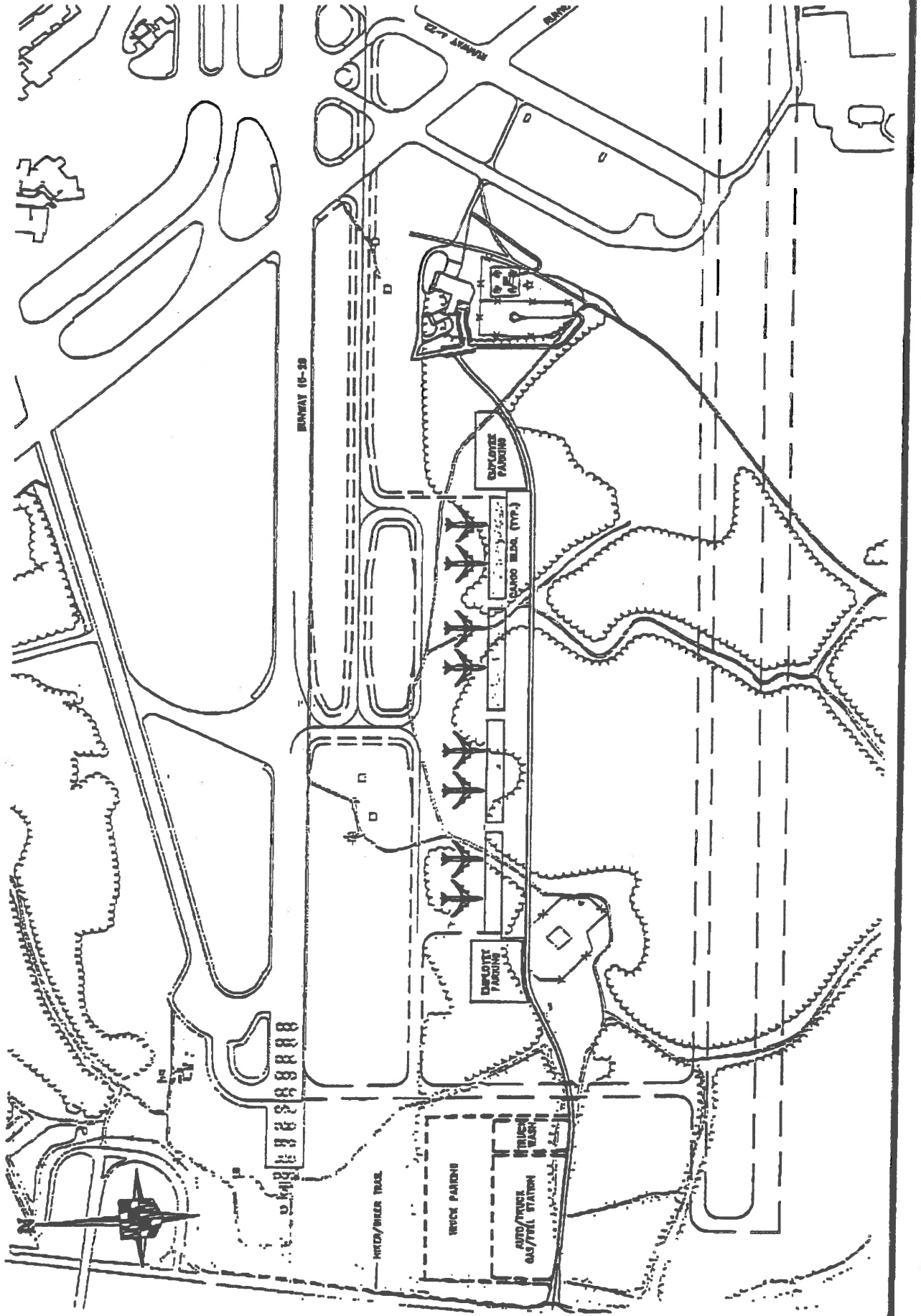
Attachments (2)



BALTIMORE/WASHINGTON  
INTERNATIONAL AIRPORT

Attachment A

# MIDFIELD CARGO COMPLEX





**ANNE  
ARUNDEL  
COUNTY,  
MARYLAND**

**2664 RIVA ROAD, P.O. BOX 6675, MS 6401  
ANNAPOLIS, MARYLAND 21401**

**DEPARTMENT OF PLANNING AND CODE ENFORCEMENT**

May 30, 1997

**Ms. Barbara Grey  
Manager Environmental Plan & Program  
Maryland Aviation Administration  
P.O. Box 8766  
Lower Level Pier A  
BWI Airport, Maryland 21240**

Dear Ms. Grey:

After giving consideration to those topics we discussed regarding airport expansion and your offices efforts to safeguard the environment, this office feels that your efforts are adequately addressing our concerns.

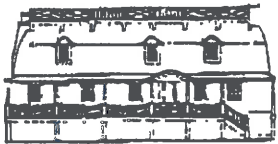
In closing, please direct all future correspondence to Mrs. Ginger Ellis of this office at (410) 222-7441.

Sincerely,

**Dean M. Baudler  
Environmental Planner**



MARYLAND  
HISTORICAL



TRUST

Office of Preservation Services

Parris N. Glendening, Governor  
Patricia J. Payne, Secretary



June 9, 1997

Ms. Barbara Grey, Manager  
Environmental Plans and Programs  
Maryland Aviation Administration  
P.O. Box 8766  
BWI Airport, MD 21240-0766

Re: Proposed Midfield Cargo  
Complex, Baltimore/  
Washington International  
Airport; 199763850;  
MD961211-1111

Dear Ms. Grey:

Thank you for your letters of 16 and 27 May 1997, and for the review copy of the following report: Phase I Archeological Survey, Midfield Cargo Complex, Baltimore/Washington International Airport, Anne Arundel County, Maryland. (April 1997). URS Greiner, Inc., prepared the document.

The report comprehensively describes the project's goals, methods, and results. It contains relatively thorough discussions of site function and research potential and addresses the Standards and Guidelines for Archeological Investigations in Maryland (Shaffer and Cole 1994). In our opinion, the level of background research and fieldwork was sufficient to identify the full range of archeological properties in the area of potential effects and to evaluate their eligibility for the National Register of Historic Places.

The project identified six new and previously inventoried archeological sites, as well as isolated and scattered prehistoric and historic artifacts. The latter isolated and scattered objects lack important research potential, are ineligible for the National Register, and warrant no further work.

With regard to the archeological sites, previous investigators had determined that the portion of Harmans A site (18AN29A) in the area of potential effects is ineligible for the National Register.

Division of Historical and Cultural Programs

100 Community Place • Crownsville, Maryland 21032 • (410) 514-7638

*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.*



EQUAL HOUSING  
OPPORTUNITY

Ms. Barbara Grey  
June 9, 1997  
Page 2

It needs no additional study for this undertaking. The consultant reidentified 18AN362. Surveyors found only one piece of quartz debitage and two fire-cracked rocks during the current project. The lack of cultural material indicates a lack of important research potential for this hunting station. Therefore, the site is ineligible for the National Register and warrants no further investigation.

Among the newly discovered sites are 18AN1048, 18AN1049, and 18AN1050. These properties evidenced low densities of prehistoric lithic debitage and fire-cracked rocks. The only temporally diagnostic artifact was a late Middle Archaic Brewerton projectile point from 18AN1048. None of the sites have important research potential. Therefore, sites 18AN1048, 18AN1049, and 1050 are ineligible for the National Register and need no additional study.

The final newly identified site is 18AN1051. Shovel test pits, excavation units, and exploratory trenches found it to represent a late nineteenth century farmstead. Surveying and testing yielded approximately 1,000 artifacts; ceramics, glass, architectural debris, personal items, and various metal objects. The site includes a brick-lined well and several other features. Trenching discovered a large refuse pit, two irregular stains with artifacts, and over 30 postmolds. The postmolds might be from a fence. According to the consultant, the site may represent a seasonal, agricultural pickers' camp. The site has intact artifact bearing features and the potential to provide important historical information on the physical layout of nineteenth century farms and the socioeconomic relationship between Baltimore City and agricultural northern Anne Arundel County. For these reasons, we concur that 18AN1051 is eligible for the National Register.

Your letter of 27 May 1997 states that the design of the proposed spoil area at 18AN1051 has been changed. Now, ground disturbance will not occur at this archeological property. Further, MAA shall erect a permanent fence around 18AN1051 to protect it during and after construction. Given these conditions (project redesign and fencing) and our earlier architectural review, we agree that the undertaking will have no effect on historic properties.

Finally, we have several editorial comments on the draft report itself. The consultant should address the following issues in a revised document:

- 1) The report's title should refer to Phase I and Phase II archeological investigations.
- 2) The project area dot in Figure 1.1 should be farther west.

Ms. Barbara Grey

June 9, 1997

Page 3

3) Editing is needed on pages 3.1 (site situated; may have led), 3.5 (outbuildings), 4.9 ((10YR 6/8)), 4.19 (locus), 5.3 (Friedlander), 5.5 (effect), 5.7 (xx; xx; yy; Artifacts), 5.10 ("hunk" [colloquial]; no space between "measured" and "160"), 5.12 (brick-lined), 5.13 (xx; yy), 5.14 (from a point), 5.15 (of brass tokens), 5.16 (acidic. entire), as well as on the third page of the bibliography (Bienenfeld) and the second page of Barse's resume (Monongahela [twice]).

4) Figure 1.2 needs to show the boundaries of the area of potential effects.

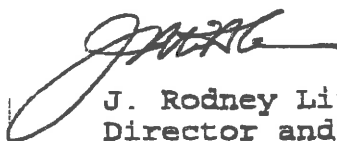
5) Figure 5.3 needs a key for the symbols in Feature 1.

6) The third paragraph on page 5.14 should more clearly discuss site occupation and "actual" abandonment.

7) Page 5.17 needs to refer to National Register Criterion D and to discuss project effects.

We look forward to receiving the final report. If you have any questions or require further information, please contact Dr. Gary Shaffer at 410-514-7638.

Sincerely,



J. Rodney Little  
Director and State Historic  
Preservation Officer

JRL/GDS  
9701337

cc: Mr. Terry Klein (URS Greiner)  
Mrs. Linda Morrison (COE)  
Mr. Terry Clark (MDE)  
Mr. Bob Rosenbush (State Clearinghouse)  
Mr. Harrison Wetherill, Jr.  
Ms. Donna Ware  
Ms. Donna Hole  
Dr. Al Luckenbach

*file - Midfield Cargo Terminal  
Environmental*



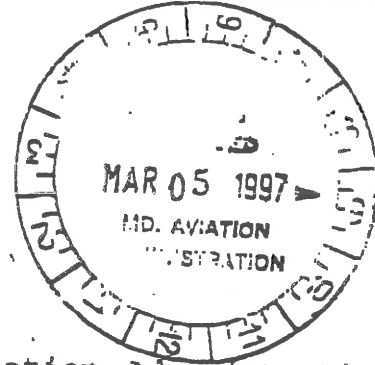
U.S. Department  
of Transportation  
**Federal Aviation  
Administration**

Eastern Region

Fitzgerald Federal Building  
John F. Kennedy  
International Airport  
Jamaica, New York 11430

MAR - 2 1998

Ms. Barbara Grey, Manager  
Environmental Plans & Programs  
Maryland Aviation Administration  
P.O. Box 8766  
BWI Airport, Maryland 21240-0766



Dear Ms. Gray:

On November 24, 1997, the Federal Aviation Administration (FAA) provided to your office, comments on the Environmental Assessment for the proposed Expansion of Air Cargo Facilities at the BWI Airport, Baltimore, Maryland. The comments provided in this letter were a result of a coordinated effort with other Divisions within FAA. On January 13, 1998 your office provided a response to our comments of November 24, 1997. We have coordinated your response with the other Divisions having comments.

Based on the review of your response by the Airports Division, as well as the other Divisions within FAA, we have determined that you have adequately addressed each of our comments. We will begin preparing our Federal Environmental Finding shortly, and we will keep you informed as to the progress of our Finding.

If you should have any questions, please feel free to contact Steven Urlass at 718-553-3353.

Sincerely,

Thomas Felix  
Manager, Planning & Programming



# Maryland Aviation Administration

"Striving to do our best in everything we do - dedicated to providing outstanding airport facilities and services"

Theodore E. Mathison Executive Director

July 11, 1997

Ms. Judy Broersma-Cole  
Maryland Department of the Environment  
Water Management Administration  
Wetlands and Waterways Division  
Goldstein Office Building  
200 Duke Street, 2700  
Prince Frederick, Maryland 20678

Reference: Contract No. MAA-AE-96-001  
Application Tracking Number: 199763850  
Nontidal Wetlands Number: 97-NT-0440  
Midfield Cargo Complex  
Baltimore/Washington International Airport

Dear Ms. Broersma-Cole:

The Maryland Aviation Administration (MAA) respectfully submits the following in response to your comments letter dated June 6, 1997. Your comments are listed below in italics, and the MAA's response follows each comment.

*MDE Comment: 1. A list of names and addresses of all contiguous property owners in the watershed(s) to be impacted. In order to expedite the State public notice, you may wish to include pre-printed address labels (at least 2 sets, 3 if a hearing is requested.)*

MAA Response: Enclosed herein are tax maps indicating the properties contiguous to the impacted watersheds, a list of those contiguous property owners, and three sets of address labels for each owner. In addition, the names, addresses and mailing labels for notification of appropriate local officials are included.

*MDE Comment: 2. A completed Billing Approval Notice Form, enclosed.*

MAA Response: The completed Billing Approval Notice Form was mailed to your office on June 10, 1997.





Ms. Judy Broersma-Cole  
July 11, 1997  
Page 2

*MDE Comment: 3. Please be aware that additional plans and information will be required as soon as the agencies have accepted an alternative for the cargo facilities.*

MAA Response: It is our understanding that the Public Notice period may proceed concurrently with the agencies' review and acceptance of a preferred alternative for the cargo complex. Therefore, we respectfully request that this process be initiated at your earliest convenience.

Thank you for the opportunity to respond to your comments. MAA appreciates your continued assistance with these matters. Should you have any questions or require additional information, please contact me on 410-859-7090.

Sincerely,

  
Barbara Grey  
Manager of Environmental Services

BG:VRP:ss  
Enclosures

cc: Lynn Bezilla  
Wat Bowie  
Veronica Piskor





**PROPOSED BWI MIDFIELD CARGO COMPLEX**  
**Contiguous Property Owners or**  
**Appropriate Local Officials**

MAP/GRID/PARCEL(S): 3/24/70, 3/24/212 and 8/6/179  
PROPERTY: 1634 Fort Meade Road, Anne Arundel County, Maryland  
OWNER: Northrup Grumman Corp.  
C/O Tax Department  
1840 Century Park East  
Los Angeles, CA 90067

MAP/GRID/PARCEL(S): 3/17/34  
PROPERTY: 7000 Amtrak Way, Anne Arundel County  
OWNER: Maryland State Highway Administration  
Real Estate Division  
300 West Preston Street  
Baltimore, MD 21203

MAP/GRID/PARCEL(S): 3/18/67  
PROPERTY: Elkridge Landing Road, Linthicum, Maryland  
OWNER: Westland Investment Co.  
8355 Crestdale Court  
Cincinnati, OH 45236

MAP/GRID/PARCEL(S): 3/18/87  
PROPERTY: Baltimore/Washington Parkway  
OWNER: Marpat Corp.  
C/O Abraham L. Alder, Esq.  
20 South Charles Street, 10th Floor  
Baltimore, MD 21201

MAP/GRID/PARCEL(S): 8/17/269  
PROPERTY: n/a  
OWNER: National Railroad Passenger Co.  
400 North Capitol Street, NW  
Washington DC 20001

MAP/GRID/PARCEL(S): 8/11/503  
PROPERTY: Valley Road, Hanover, Maryland  
OWNER: Nicholas B. Mangione  
1205 York Road  
Lutherville, MD 21093

APPROPRIATE LOCAL OFFICIALS:

The Honorable John Gary  
County Executive  
Arundel Center  
PO Box 2700  
Annapolis, MD 21404

Councilman George Bachman  
County Council  
Arundel Center  
PO Box 2700  
Annapolis, MD 21404

Senator Philip C. Jimeno  
House of Representatives  
402A Senate Office Building  
Annapolis, MD 21401

Delegate Joan Cadden  
House of Delegates  
213 Low House Building  
Annapolis, MD 21401

**PROPOSED BWI MIDFIELD CARGO COMPLEX**  
**Contiguous Property Owners or**  
**Appropriate Local Officials**

MAP/GRID/PARCEL(S): 3/24/70, 3/24/212 and 8/6/179  
PROPERTY: 1634 Fort Meade Road, Anne Arundel County, Maryland  
OWNER: Northrup Grumman Corp.  
C/O Tax Department  
1840 Century Park East  
Los Angeles, CA 90067

MAP/GRID/PARCEL(S): 3/17/34  
PROPERTY: 7000 Amtrak Way, Anne Arundel County  
OWNER: Maryland State Highway Administration  
Real Estate Division  
300 West Preston Street  
Baltimore, MD 21203

MAP/GRID/PARCEL(S): 3/18/67  
PROPERTY: Elkridge Landing Road, Linthicum, Maryland  
OWNER: Westland Investment Co.  
8355 Crestdale Court  
Cincinnati, OH 45236

MAP/GRID/PARCEL(S): 3/18/87  
PROPERTY: Baltimore/Washington Parkway  
OWNER: Marpat Corp.  
C/O Abraham L. Alder, Esq.  
20 South Charles Street, 10th Floor  
Baltimore, MD 21201

MAP/GRID/PARCEL(S): 8/17/269  
PROPERTY: n/a  
OWNER: National Railroad Passenger Co.  
400 North Capitol Street, NW  
Washington DC 20001

MAP/GRID/PARCEL(S): 8/11/503  
PROPERTY: Valley Road, Hanover, Maryland  
OWNER: Nicholas B. Mangione  
1205 York Road  
Lutherville, MD 21093

**APPROPRIATE LOCAL OFFICIALS:**

**The Honorable John Gary  
County Executive  
Arundel Center  
PO Box 2700  
Annapolis, MD 21404**

**Councilman George Bachman  
County Council  
Arundel Center  
PO Box 2700  
Annapolis, MD 21404**

**Senator Philip C. Jimeno  
House of Representatives  
402A Senate Office Building  
Annapolis, MD 21401**

**Delegate Joan Cadden  
House of Delegates  
213 Low House Building  
Annapolis, MD 21401**



MARYLAND DEPARTMENT OF THE ENVIRONMENT  
2500 Broening Highway • Baltimore  
(410) 631-3000

Post-it® Fax Note	7671	Date	9.9.97	# of pages	2
To	Veronica Piskor		From	Judy Cole	
Co./Dept.			Co.		
Phone #			Phone #	410 414 3400	
Fax #	410 561 1150		Fax #		

Parris N. Glendening  
Governor

Nontidal Wetlands and  
Southern Maryland Re-  
Goldstein State  
200 Duke Street, Suite 2700 -  
Prince Frederick, Maryland 20678  
Phone: (410) 414-3400 Fax: (410) 414-3410

00110111

September 9, 1997

Ms. Barbara Grey  
MAA, Office of Planning and Engineering  
P.O. Box 8766  
BWI Airport, MD 21240-00766

Application Tracking Number: 199763850  
Nontidal Wetlands Number: 97-NT-0440  
Project: Midfield Cargo Complex, Anne  
Arundel County  
Contact Person: Judy Cole  
(410) 414-3400  
ext. # 305

Dear Ms. Grey:

The Nontidal Wetlands and Waterways Division has reviewed your resubmittal of information for the above referenced project. I spoke with Veronica Piskor, on this day, and we discussed the following:

1. Based on the alternatives analysis for future needs and the avoidance and minimization of impacts to jurisdictional areas, revised Alternative # 4 is appears acceptable to this Division. However, BWI prefers this alternative over Alternative # 2 because the acreage available here will not allow cargo handling expansion past 2015. (pg 16 of avoidance and minimization report) If revised alternative # 4 is authorized by the agencies, where, specifically, will future expansion, past 2015, occur?
2. Mr. Dave Walbeck is still reviewing the Phase I mitigation documents. He will contact Ms. Veronica Piskor directly with any comments. Ms. Piskor has stated that Phase II plans will be submitted for review very soon. Please be aware that we may require additional mitigation for the LOA issued for the ARFF Station and stream restoration as part of the WQC in addition to mitigation proposed for losses at the cargo complex.

"Together We Can Clean Up"



3. Please provide two copies of the construction plans for the entire project as soon as they are available. These plans should clearly show the wetland, buffer, and floodplain boundaries; the limits of disturbance; sediment controls; the location(s) of SWM facilities and their discharge points; proposed structures; access; and utilities. The plans should include representational cross section(s) of the activities in regulated areas.
4. As soon as the Division has reviewed the construction plans and has approved the Phase I mitigation, we will advertise the project on public notice.
5. Please be aware that this Division have not received any comments from the Corps and we are proceeding with the processing of your application as an MDSPGP Cat. III/B.

Be sure to reference all tracking numbers on your resubmittal. As soon as this information is provided, review of your application will promptly be continued. If you have any questions regarding the information needed, please call the contact person at the above number.

Please note that if the Division does not hear from you within 120 days from the date of this letter, we will suspend processing of your application and return your application to you. Should you desire to reapply in the future, you must resubmit the application, referencing all previous tracking numbers, with five copies of all pertinent information to the Permit Service Center.

Sincerely,

*Judy Broersma-Cole*

Judy Broersma-Cole  
Project Manager  
Nontidal Wetlands and Waterways Division

cc: U.S. Army Corps of Engineers - Meg Gaffney-Smith  
Engineering - Imtiaz Choudry  
Mitigation - Dave Walbeck  
MDE SWM - Jim Tracy

5100 115.00

GML  
V. Pielli  
TJH  
File



MARYLAND DEPARTMENT OF THE ENVIRONMENT  
2500 Broening Highway • Baltimore, Maryland 21224  
(410) 631-3000

Parris N. Glendening  
Governor

Nontidal Wetlands and Waterways Division  
Southern Maryland Regional Field Office  
Goldstein State Office Building  
200 Duke Street, Suite 2700  
Prince Frederick, Maryland 20678  
Phone: (410)414-3400 Fax: (410)414-3410

Jane T. Nishida  
Secretary

October 8, 1997

Ms. Veronica Piskor  
URS Greiner  
2219 York Road, Suite 200  
Timonium, MD 21093-3111

Application Tracking Number: 199568267  
Nontidal Wetlands Number: 95-NT-0792  
Project: ARFF Station Access Road, BWI,  
AA County  
Contact Person: Judy Cole  
(410) 414-3400  
ext. # 305

Dear Ms. Piskor:

As per our previous telephone conversation of October 7, 1997, this letter is to clarify the mitigation requirements for the Midfield Cargo Complex (97-NT-0440/199763850). Because the road to the ARFF Station will also be used to access the proposed cargo complex, all of the permanent losses to regulated areas associated with the access road only, must be mitigated for by the applicant.

The current authorized total impacts for the access road, per your letter of August 19, 1997, are 1,531 square feet of emergent nontidal wetlands; 731 square feet of forested nontidal wetlands; and 430 linear feet of stream channel. These authorized impacts should be added into the mitigation proposal, at the appropriate ratios, for the cargo complex.

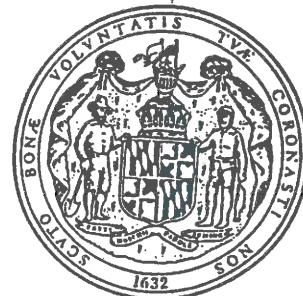
Sincerely,

*Judy B. Cole*

Judy Broersma-Cole  
Project Manager  
Nontidal Wetlands and Waterways Division

cc: U.S. Army Corps of Engineers - Special Projects  
Mitigation - Dave Walbeck

STATE OF MARYLAND  
DEPARTMENT OF THE ENVIRONMENT  
WATER MANAGEMENT ADMINISTRATION



MODIFICATION OF AUTHORIZATION

AUTHORIZATION NUMBER: 95-NT-0792/199568267

EFFECTIVE DATE: October 7, 1997

EXPIRATION DATE: October 7, 2000

AUTHORIZED PERSON: Mr. Ali Logmanni  
MD Aviation Administration  
Lower Level, Pier A  
BWI Airport, Maryland 21240

IN ACCORDANCE WITH ENVIRONMENT ARTICLE §5-503(A) AND §5-906(B), ANNOTATED CODE OF MARYLAND (1993 REPLACEMENT VOLUME), COMAR 08.05.03.12E AND 08.05.04.11, NONTIDAL WETLANDS & WATERWAYS LETTER OF AUTHORIZATION NUMBER 95-NT-0792/199568267, ISSUED TO MD Aviation Administration, ("AUTHORIZED PERSON"), IS HEREBY MODIFIED BY THE WATER MANAGEMENT ADMINISTRATION ("ADMINISTRATION") AS DESCRIBED BELOW:

Modification # 2: Widening of the access road to accommodate planned vehicular traffic to the Mid-field Cargo Complex as well as the ARFF Station. The increased impacts are: 20 linear feet of stream channel; 311 square feet of emergent and 291 square feet of forested nontidal wetland; and 1,529 square feet of regulated buffer as per the attached plan.

THIS MODIFICATION SHALL BE CONSIDERED AS PART OF, NONTIDAL WETLANDS & WATERWAYS LETTER OF AUTHORIZATION NUMBER 95-NT-0792/199568267. ALL OTHER CONDITIONS AND ELEMENTS OF THE AUTHORIZATION REMAIN IN EFFECT.

Judy Broersma - Cole For  
Terrance Clark, Chief  
Wetlands & Waterways Division

cc: U.S. Army Corps of Engineers (Michele Gomez)  
URS Greiner (Veronica Piskor)  
WRA Compliance Program w/ file  
Mitigation (Dave Walbeck)



# Maryland Aviation Administration

*"Striving to do our best in everything we do - dedicated to providing outstanding airport facilities and services"*

Theodore E. Mathison    Executive Director

October 29, 1997

Ms. Marian Honeczy  
Southern Regional Coordinator  
Maryland Department of Natural Resources  
13022 8th Street  
Bowie MD 20720

Reference:    Contract No. MAA-AE-96-001  
                  Comprehensive Airport Planning Services  
                  Task 3: Reforestation Master Plan  
                  Baltimore/Washington International Airport

Dear Ms. Honeczy:

The Maryland Aviation Administration (MAA) is pleased to present to you two (2) copies of the Draft Reforestation Master Plan (RMP) for Baltimore/Washington International Airport (BWI) for your review. BWI has experienced dramatic growth in facilities and service over the past decade and the MAA plans to further develop its facilities to meet projected demands. To adequately address the impacts of planned development projects on existing forest at BWI, a Forest Stand Delineation (FSD) was completed in December 1994 and approved in April 1995. This RMP, coupled with the FSD, will assist MAA in complying with Maryland's Forest Conservation Act (FCA) of 1991.

The RMP presents an inventory of the on-site forest resources and addresses potential forest impacts from planned projects. It also provides a record of existing and proposed reforestation/afforestation projects as mitigation for the proposed impacts.

The MAA, therefore, respectfully requests your comments on the Draft Reforestation Master Plan. Upon completion of your review, MAA would like to meet with you to discuss the implementation of the proposed plan, including additional coordination efforts required to bring the upcoming Midfield Cargo Complex project at BWI Airport into compliance with the FCA. In addition, MAA would request guidance from you on continuing reforestation on off-site properties purchased as part of the Airport's noise abatement program.

P.O. Box 8766, BWI Airport, Maryland 21240-0766 (410) 859-7100

FAX: (410) 850-4729 — TDD for the hearing impaired: (410) 859-7227


The Maryland Aviation Administration is an agency of the Maryland Department of Transportation



Ms. Marian Honecny  
October 29, 1997  
Page Two

On a final note, MAA would like to discuss plans to meet with Mr. Jeff Thompson, with Department of Natural Resources, to develop a Forest Management Plan (FMP) for BWI. This was recommended by Ms. Judy Cole, with the Maryland Department of Environment, in response to MAA's request for the review of concept plans and guidance to enable MAA to control growth to comply with federal safety and security requirements in specific wetland areas along the perimeter of the Airport. This is particularly important at this point in time because MAA has several new managers in the Maintenance Division who are interested in training opportunities, in supporting the RMP, and in the benefits of a FMP. MAA looks forward to meeting with you and working with you to coordinate all of these elements with your office.

Sincerely yours,

  
Barbara Grey, Manager  
Environmental Services

BEG:jar

Enclosures

cc: Lynn Bezilla  
Ali Logmanni  
Michael Steer, URS Greiner  
Ted Hogan, URS Greiner



# Maryland Aviation Administration

"Striving to do our best in everything we do - dedicated to providing outstanding airport facilities and services"

Theodore E. Mathison Executive Director

November 6, 1997

Ms. Judy Broersma-Cole  
Maryland Department of the Environment  
Water Management Administration  
Wetlands and Waterways Division  
Goldstein Office Building  
200 Duke Street, 2700  
Prince Frederick, Maryland 20678

Reference: Contract No. MAA-AE-96-003  
Application Tracking Number: 199763850  
Nontidal Wetlands Number: 97-NT-0440  
Midfield Cargo Complex  
Baltimore/Washington International Airport

Dear Ms. Broersma-Cole:

The Maryland Aviation Administration (MAA) respectfully submits the following in response to your comments letter dated September 9, 1997. Your comments are listed below in italics, and the MAA's response follows each comment.

MDE Comment No. 1

*Based on the alternatives analysis for future needs and the avoidance and minimization of impacts to jurisdictional areas, revised Alternative No. 4 appears acceptable to this Division. However, BWI prefers this alternative over Alternative No. 2 because the acreage available here will not allow cargo handling expansion past 2015. (page 16 of avoidance and minimization report) If revised Alternative No. 4 is authorized by the agencies, where, specifically, will future expansion, past 2015, occur?*

**MAA Response**

Expansion of cargo facilities could be accomplished, if the need arises, in the area south of the proposed Midfield Cargo Complex/ARFF access road. This area between the proposed Midfield Cargo Complex and the planned parallel Runway 10R-28L could be used

P.O. Box 8766, BWI Airport, Maryland 21240-0766 (410) 859-7100  
FAX: (410) 850-4729 — TDD for the hearing impaired: (410) 859-7227

The Maryland Aviation Administration is an agency of the Maryland Department of Transportation



Ms. Judy Broersma-Cole  
November 6, 1997  
Page 2

for future expansion, which would meet the projected future demand for cargo facilities beyond year 2015. Additionally, the available area would be sufficient to expand cargo support facilities and fueling operations at the same location. This would keep cargo support services in one location and avoid the need for duplicate services, which would be required if cargo facilities were expanded elsewhere. The extent of the area available for expansion for both Alternatives 2 and 4 can be seen on Exhibit 6 in the Avoidance, Minimization and Mitigation Report (AMMR).

MDE Comment No. 2

*Mr. Dave Walbeck is still reviewing the Phase I mitigation documents. He will contact Ms. Veronica Piskor directly with any comments. Ms. Piskor has stated that Phase II plans will be submitted for review very soon. Please be aware that we may require additional mitigation for the LOA issued for the ARFF Station and stream restoration as part of the WQC, in addition to mitigation proposed for losses at the cargo complex.*

**MAA Response**

It is our understanding that 430 linear feet of stream and a total of 2,262 square feet of wetland will be mitigated along with that required for the proposed Midfield Cargo Complex, as stated in the ARFF Station authorization. Mr. Walbeck has recently approved the Phase I mitigation plan for Site 3 - Hanover Road in combination with the preservation of Wetlands of Special State Concern within the Stony Run floodplain.

As a result in the refinement of the final design, changes have been made in the amount of wetland and stream impacts that are associated with the Midfield Cargo Complex. A previously unknown impact resulting from the widening of a haul road between the construction site and the stockpile will impact 2,100 square feet of palustrine forested wetland and 1,700 square feet of wetland buffer associated with Hawkins Branch. The work includes the widening of the road and the replacement of the existing corrugated metal pipe with a pipe of the same diameter (see design plan Sheet C12.17 Inset). This impact, in addition to the changes resulting from design modifications, are included in the revised Table 3 and 4 from the AMMR, which are enclosed for your reference.

In anticipation of requirements to be made part of the Water Quality Certification, MAA is proceeding with design drawings for a stream restoration at Sachs Branch. The purpose of the stream restoration is to mitigate stream impacts for both the ARFF entrance road and Midfield Cargo Complex impacts to streams.

Ms. Judy Broersma-Cole  
November 6, 1997  
Page 3

MDE Comment No. 3

*Please provide two copies of the construction plans for the entire project as soon as they are available. These plans should clearly show the wetland, buffer, and floodplain boundaries; the limits of disturbance; sediment controls; the location(s) of SWM facilities and their discharge points; proposed structures; access; and utilities. The plans should include representational cross section(s) of the activities in regulated areas.*

**MAA Response**

Enclosed are two copies of the construction plans containing the items listed above, as requested.

MDE Comment No. 4

*As soon as the Division has reviewed the construction plans and has approved the Phase I mitigation, we will advertise the project on public notice.*

**MAA Response**

Enclosed are the construction plans that include all of the items listed in Comment No. 3 above. Mr. Walbeck has approved the mitigation package which includes wetland restoration and preservation.

MDE Comment No. 5

*Please be aware that this Division has not received any comments from the Corps and we are proceeding with the processing of your application as an MDSPGP Cat. III/B.*

**MAA Response**

Correspondence with the Corps will be forwarded to Keith Harris, Chief of Special Projects, in the absence of an assigned staff reviewer. In a recent conversation, Mr. Harris stated that the Corps expects to have a reviewer assigned to the project in time to submit comments to MDE within the 10 days following the closure of the public notice period.



Ms. Judy Broersma-Cole

November 6, 1997

Page 4

Thank you for the opportunity to respond to your comments. MAA appreciates your continued assistance with these matters. Should you have any questions or require additional information, please contact me at 410-859-7090.

Sincerely,



Barbara Grey  
Manager of Environmental Services

BG:ss

Enclosures

cc: Lynn Bezilla, MAA  
Dave Walbeck, MDE  
Keith Harris, US Army Corps of Engineers  
Wat Bowie, URSG  
Gary Luczak, URSG  
Veronica Piskor, URSG

**TABLE 3**  
**Wetland Impacts and Required Mitigation**  
**(Revised November, 1997)**

Impact Number	Watershed	Wetland Classification	Wetland Impact (Square Feet)	Mitigation Ratio	Mitigation Required (Square Feet)
1	Hawkins Branch	PFO/SS	3,333	2:1	6,666
		PEM	1,300	1:1	1,300
	Clark Branch	PFO/SS	1,542	2:1	3,084
		PEM	975	1:1	975
3	Signal Branch	PFO	40,500	2:1	81,000
5	Kitten Branch	PEM	1,848	1:1	1,848
6	Hawkins	PFO	2,100	2:1	4,200
Total			51,598		99,073

**TABLE 4**  
**Stream Impacts**  
**(Revised November, 1997)**

Impact Number	Watershed	Stream Impact (Linear Feet)
1	Hawkins Branch	20
	Clark Branch	0
2	Signal Branch	40
3	Signal Branch	579
4	Kitten Branch	40
5	Kitten Branch	594
*	Signal, Clark, Kitten Branches	430
Total		1,703

\* Impacts to Signal Branch from Aircraft Rescue and Firefighting Facility access road.

**ATTACHMENT**  
**(Revised November, 1997)**

Required Wetland Mitigation			
Project	PFO (Square Feet)	PEM (Square Feet)	Totals (Square Feet)
Midfield Cargo	94,950	4,123	99,073
ARFF Station	1,462	1,531	2,993
<b>Total</b>	<b>96,412</b>	<b>5,654</b>	<b>102,066</b>

Proposed Wetland Mitigation			
Property	Restoration (Square Feet)	Preservation (Square Feet)	Total (Square Feet)
Site 1	1,650	4,380 ( 21,900 @ 5:1)	6,030
Site 2	0	40,920 (204,599 @ 5:1)	40,920
Site 3	55,116	1,680 (16,803 @ 10:1)	56,796
<b>Total</b>	<b>56,766</b>	<b>46,980</b>	<b>103,746</b>



MARYLAND DEPARTMENT OF THE ENVIRONMENT  
2500 Broening Highway • Baltimore, Maryland 21224  
(410) 631-3000

Parris N. Glendening  
Governor

Nontidal Wetlands and Waterways Division  
Southern Maryland Regional Field Office  
Goldstein State Office Building  
200 Duke Street, Suite 2700  
Prince Frederick, Maryland 20678  
Phone: (410)414-3400 Fax: (410)414-3410

Jane T. Nishida  
Secretary

November 25, 1997

Ms. Barbara Grey  
MD Aviation Administration  
PO Box 8766  
BWI Airport, MD 21240

Nontidal Wetlands Number: 97-NT-0440  
Application Tracking Number: 199763850  
Project: BWI Midfield Air Cargo  
Complex, Anne Arundel County  
Contact Person: Judy Cole  
(410) 414-3400

Dear Ms. Grey:

The Nontidal Wetlands and Waterways Division has Continued its review of your application. We have determined that we can now advertise the project on public notice for a wetland and waterway construction permit. The project will be advertised on public notice for an opportunity for a public informational hearing in The Capital. Your project will be advertised on Friday, December 5, 1997. The public notice period will end on Friday, December 26, 1997. The applicant will be billed for the cost of the advertisement.

If a hearing is requested you will be notified of the date, time and the place. If no additional adverse comments are received and/or a hearing is not requested, we will issue a decision no later than January 25, 1998.

If you have any additional questions regarding this matter,  
please contact me at 410-414-3400.

Sincerely,

*Judy B. Cole*

Judy Broersma-Cole  
Project Manager  
Nontidal Wetlands and Waterways Division

cc: Corps - Jennifer Moyer  
URS Greiner - Veronica Piskor<sup>f</sup>  
Andrew Der  
Imtiaz Choudry

- 1) Case: 97-NT-0440/199763850
- 2) Applicant: Maryland Aviation Administration  
PO Box 8766  
BWI Airport, MD 21240-0766  
Attention: Ms. Barbara Grey  
Phone #: 410-859-7100
- 3) Notice Issued: The Capital, December 5, 1997
- 4) Comments Due: December 26, 1997
- 5) Activity: Construction of a midfield cargo complex and attendant infrastructure
- 6) Location: BWI Airport, Anne Arundel County
- 7) Wetlands Impact: 44,298 square feet of permanent impact to forested nontidal wetland; 4,123 square feet of permanent impact to emergent nontidal wetlands; 60,554 square feet of impact to regulated buffer; and 1,329 linear feet of stream channel impact
- 8) Waterway: Stony Run
- 9) Contact: Judy Broersma-Cole 410-414-3400

Applications Received

Case Number: 97-NT-0440/199763850

The MD Aviation Administration (Department of Transportation), PO Box 8766, BWI Airport, proposes to construct a midfield air cargo handling complex and attendant infrastructure including buildings; a taxiway; aircraft parking aprons; roadways; and support and stormwater management facilities. The purpose of the project is enable BWI to expand to meet its future air cargo handling tonnage projections through 2015. The project would permanently impact 44,298 square feet of forested nontidal wetland; 4,123 square feet of emergent nontidal wetlands; 60,554 square feet regulated buffer; and 1,329 linear feet of stream channel draining to tributaries to Stony Run. The project site is located at BWI Airport, east of MD 170 and south of Runway 10-28 in Anne Arundel County. The applicant proposes to create forested wetlands off site and preserve Nontidal Wetlands of Special State Concern in permanent conservation easements as mitigation for losses. For additional information contact Judy Broersma-Cole at 410-414-3400.



# MARYLAND DEPARTMENT OF THE ENVIRONMENT

2500 Broening Highway • Baltimore Maryland 21224

(410) 631-3000 • 1-800-633-6101 • <http://www.mde.state.md.us>

Glenn N. Glendening  
Governor

Jane T. Nishida  
Secretary

January 6, 1998

Mr. Theodore J. Hogan  
Environmental Group Manager  
URS Greiner, Inc.  
2219 York Road, Suite 200  
Timonium, Maryland 21093-3111

Re: D100795.06/Proposed Expansion of Air Cargo Facilities  
at Baltimore/Washington International Airport (BWI)

Dear Mr. Hogan:

The Environmental Assessment (EA) for the referenced project has been reviewed for consistency with the Maryland Coastal Zone Management Program (CZMP), as required by Section 307 of the Federal Coastal Zone Management Act (CZMA) of 1972, as amended. The EA evaluates various alternatives and potential impacts for the planned expansion of air cargo facilities which will provide BWI with additional domestic and international cargo facilities required to accommodate projected increases in cargo demand.

The EA recommends the selection of Build Alternative 4R consisting of the construction of new cargo facilities in the midfield area of the airport southwest of existing Runway 10-28 and Runway 4-22. In addition, a parallel taxiway will be constructed to the north of Runway 10-28. Alternative 4R affects approximately 1.1 acres of wetlands, 1,330 linear feet of streams, and 105 acres of forest land. There will be no effect on rare, threatened, or endangered species, nor known archaeological sites within the area.

As you are aware, proposed impacts to wetlands and waterways require authorization from MDE. I understand that an application has been submitted and the project has been placed on public notice by the Nontidal Wetlands and Waterways Division. Based on discussions with Ms. Judy Broersma-Cole, the Nontidal Wetlands project manager, the public interest review has not identified any new outstanding issues.

Mr. Theodore J. Hogan

January 6, 1998

Page 2

Based on our review of the EA and our wetlands permit review to date, the proposed activities are consistent with the State's CZMP, as required by Section 307 of the Federal CZMA, as amended. Please note that this concurrence is conditioned on the applicant's receipt of a Nontidal Wetlands and Waterways permit from this Department and adherence to any conditions imposed by such authorization.

If you have any questions, please contact me at (410) 631-8093.

Sincerely,



Elder A. Ghigiaralli, Jr.  
Chief, Coastal Zone Consistency

EAGJr:cma

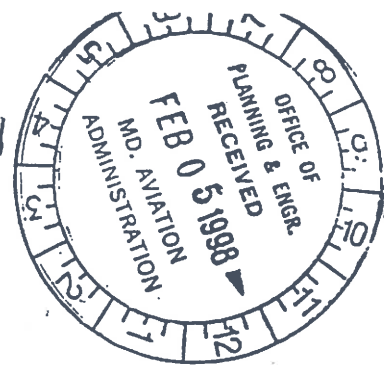
cc: Gary Setzer  
Judy Broersma-Cole





REPLY TO  
ATTENTION OF:

SML → D100813.10  
C: CSH, VRP  
DEPARTMENT OF THE ARMY  
BALTIMORE DISTRICT, CORPS OF ENGINEERS  
POST OFFICE BOX 1715  
BALTIMORE, MARYLAND 21203-1715



JAN 09 1998

Operations Division

Subject: CENAB-OP-RX (MAA/MIDFIELD CARGO COMPLEX/NEW CONST)  
97-63850-11

MD Aviation Administration  
Office of Planning and Engineering  
Attn: Michael C. West  
PO Box 8766  
BWI Airport, Maryland 21240-0766

Dear Mr. West:

I am replying to your subject application dated April 30, 1997, and received by the District on May 14, 1997, for Department of the Army authorization (DA) to construct a midfield air cargo handling complex and attendant infrastructure including buildings, a taxiway, aircraft parking aprons, roadways, support facilities, and stormwater management facilities at Baltimore Washington Airport, Anne Arundel County, Maryland. The construction would permanently impact 44,298 square feet of palustrine forested wetland (PFO), 4,123 square feet of palustrine emergent wetland, and 1,329 linear feet of stream channel.

This waterway has been determined to be within our regulatory jurisdiction and the activity requires DA authorization pursuant to Section 10 of the River and Harbor Act of 1899 and/or Section 404 of the Clean Water Act.

Review of your application indicates that the proposed work is eligible for authorization by the Maryland State Programmatic General Permit (MDSPGP), if accomplished in accordance with the MDSPGP standard conditions and the following special conditions:

1. The permittee shall provide compensatory mitigation for the 44,298 square feet of PFO by restoring 53,922 square feet of PFO, preserving 226,512 square feet of non-tidal Wetlands of Special State Concern in a permanent conservation easement, and preserving 18,158 square feet of PFO adjacent to the restoration site in a permanent conservation easement.

2. The permittee shall provide compensatory mitigation for the 1,329 linear feet of stream impact associated with construction of the Midfield Cargo Complex, and 430 linear feet of stream impact associated with the construction of the access road to the Aircraft Rescue and Firefighting Station (199568267)

as stipulated in the special conditions included in its February 21, 1997 authorization, by restoring at least 1,759 linear feet of stream in Stony Run or its tributaries.

3. The permittee must submit a compensatory mitigation design plan to meet the requirements in Special Conditions 1 and 2 for approval by the Baltimore District, by March 1, 1998. A Corps approved design plan is required prior to the start of construction of the compensatory mitigation sites and the Midfield Cargo Complex.

4. The permittee must submit a proposed monitoring and performance plan for the compensatory mitigation required in Special Conditions 1 and 2 to the Baltimore District by March 1, 1998. An approved monitoring and performance plan is required prior to the start of construction of the compensatory mitigation sites and the Midfield Cargo Complex.

5. The terms and conditions of the monitoring and performance plan are conditions of this permit.

6. In the event that the compensatory mitigation does not meet the performance standards as outlined in the approved monitoring and performance plan, the applicant will execute a Corps approved remediation plan. If the Corps determines that remediation is not feasible to meet the compensatory mitigation objectives, the applicant will identify a new mitigation site(s) and develop new compensatory mitigation design plans for approval by the Corps of Engineers.

7. The permittee must obtain conservation easements for the mitigation sites to fulfill the compensatory mitigation requirements of this permit. The conservation easement must be in the form of a covenant running with the land and recorded in the land records of Anne Arundel County, Maryland. All prospective purchasers of any or all portions of the mitigation sites must receive notice of this easement and the prohibitions must be referred to in every deed, conveyance, or other transfer of portions or all of the mitigation sites. The covenant must include prohibitions against any filling, flooding, excavation, clear cutting, construction, or removal of vegetation on the mitigation sites, except as required to establish and maintain the mitigation areas required under this permit. The easement must be enforceable by the Corps of Engineers or other Federal agency having authority to do so. Upon submittal of any offers for purchase, transfer, or grant of the mitigation sites, the purchaser, offeror, or grantee must receive notification that a conservation easement is included in the chain of title.

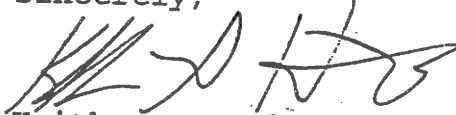
8. The permittee must submit a draft copy of the conservation easement to the Baltimore District within 90 days after receipt of project authorization. Upon approval by the

Baltimore District, this document must be recorded in the land records of Anne Arundel County, Maryland within 60 days. the permittee must submit a copy of the fully executed and recorded easement to the Corps of Engineers within 30 days following recordation.

9. No work will be performed in any stream from March 1 through June 15 of any year.

If you have any questions concerning this matter, please call Ms. Jennifer Moyer of this office at (410) 962-5679.

Sincerely,



Keith A. Harris  
Chief, Special Projects Section

Enclosures  
cc: MDE



# Maryland Aviation Administration

*"Striving to do our best in everything we do - dedicated to providing outstanding airport facilities and services"*

Theodore E. Mathison    Executive Director

February 10, 1998

Ms. Marion Honeczy  
Regional Coordinator  
Forest Conservation Programs  
P.O. Box 116  
West Bowie MD 20719-0116

Subject: Reforestation Master Plan for Baltimore/Washington International Airport

Dear Ms. Honeczy:

I am pleased to submit a final copy of the Reforestation Master Plan for Baltimore/Washington International (BWI) Airport. The comments you provided after your review of the final draft version of this document have been addressed and incorporated into this final document.

I believe this master plan will serve both the Department of Natural Resources (DNR) and the Maryland Aviation Administration (MAA) well for years to come by identifying areas of conservation, reforestation and potential development. It facilitates our project planning, design and maintenance processes as well as providing a long-range plan to guide both agencies in our efforts to comply with, and where possible to exceed, the regulatory requirements of the Maryland Forest Conservation Act. As caretakers of a large area of land, this plan will facilitate the ability of both agencies to quickly and clearly determine the current status of forest resources and level of compliance as we proceed with future reforestation plantings and airport development programs. I believe this plan represents the commitment of both the DNR and the MAA to the consideration and conservation of the forestry resources within our common jurisdictions.

P.O. Box 8766, BWI Airport, Maryland 21240-0766 (410) 859-7100  
FAX: (410) 850-4729 — TDD for the hearing impaired: (410) 859-7227

The Maryland Aviation Administration is an agency of the Maryland Department of Transportation



Ms. Marion Honeczy  
February 10, 1998  
Page Two

I look forward to the upcoming coordination efforts with the regional forestry staff to undertake the development of a BWI Airport Forest Management Plan, intended to document the maintenance practices necessary for both the continued safe operation of the Airport and the sustainability of healthy forest resources in their various stages of growth.

Sincerely,



Barbara E. Grey, Manager  
Environmental Plans and Programs

BEG:jar

Enclosure

cc: Ms. Ginger Howell

bcc: Mr. Lynn Bezilla  
Mr. Ben Chin  
Mr. Joe Corbett  
Mr. Jim Little  
Mr. Ali Logmanni  
Ms. Veronica Piskor  
Mr. Jim Poppinga  
Mr. Claude Samuels



# MARYLAND DEPARTMENT OF THE ENVIRONMENT

2500 Broening Highway • Baltimore Maryland 21224  
(410) 631-3000 • 1-800-633-6101 • <http://www.mde.state.md.us>

Parris N. Glendening  
Governor

Maryland Department of the Environment  
Water Management Administration  
Nontidal Wetlands and Waterways Division  
2500 Broening Highway  
Baltimore, MD 21224  
(410) 631-8094

Jane T. Nishid.  
Secretary

Date: February 13, 1998

Re: Division No. 97-NT-0440/199763850 - Notice of Permit Decision

Dear Property Owner, Public Official, or Interested Person:

Pursuant to Environment Article Sections 5-503(a) and 5-906(a) and COMAR 26.17.04, 26.23.01 and 26.08.02, the Water Management Administration has made a decision and has issued the above referenced Nontidal Wetlands and Waterways Permit to:

Maryland Aviation Administration  
for: construction of a midfield air cargo handling complex and attendant  
infrastructure including buildings, taxiway, aircraft parking aprons,  
roadways and support and stormwater management facilities.

Any person in any way aggrieved by this decision may request a formal contested case (adjudicatory) hearing on the matter. To obtain a contested case hearing a person must write a letter stating:

1. The full name and address of the person requesting the hearing and a telephone number at which the requester may be reached during normal business hours;
2. The name, address and telephone number of any attorney representing the requester, or a statement that the requester intends to proceed without counsel;
3. A detailed description of the grounds for the request including the specific legal right, duty, privilege or interest of the requester which may be adversely affected by the permit decision, and which is different from those interests held by the general public;
4. A statement of the specific relief desired as a result of the adjudicatory hearing; and
5. A general outline of the evidence to be presented in support of the desired relief, including the names and addresses of all witnesses to be called by the requester.

The letter requesting the contested case hearing shall be addressed to: Gary T. Setzer, -  
Program Administrator, Wetlands & Waterways Program, Maryland Department of the  
Environment, Water Management Administration, 2500 Broening Highway, Baltimore, MD  
21224 and must be received by: March 2, 1998

Division No. 97-NT-0440/199763850

Notice of Permit Decision

Page two

A party to a contested case hearing may request a temporary stay of activity under the permit pending final decision in the contested case, provided that:

1. The person requesting the temporary stay shows that there is a substantial likelihood of prevailing on the merits of the final determination of the contested case proceeding;
2. The temporary stay will not adversely affect the public health or safety or cause significant imminent environmental harm to land, air, or water resources; and
3. The conditions and criteria for granting a temporary stay as provided in regulations for contested case hearings have been met.

Requests for a temporary stay of the issuance of a permit may be sent to Mr. J. L. Hearn, Director, Water Management Administration, Maryland Department of the Environment, 2500 Broening Highway, Baltimore, MD 21224.

If you have any questions or need any additional information, please do not hesitate to contact me at (410) 631-8094.

Sincerely,



Terrance W. Clark, Chief  
Nontidal Wetlands and Waterways Division

TWC:sgn



STATE OF MARYLAND  
DEPARTMENT OF THE ENVIRONMENT  
WATER MANAGEMENT ADMINISTRATION

NONTIDAL WETLANDS AND WATERWAYS PERMIT

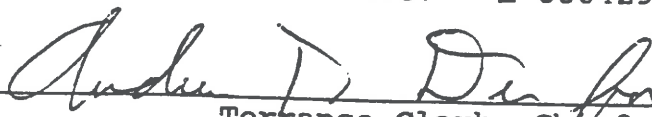
PERMIT NUMBER: 97-NT-0440/199763850  
EFFECTIVE DATE: February 16, 1998  
EXPIRATION DATE: February 16, 2003  
PERMITTEE: State of Maryland / Aviation Administration  
P.O. Box 8766  
BWI Airport, Maryland 21240-0766  
Attention: Mr. Michael C. West



IN ACCORDANCE WITH ENVIRONMENT ARTICLE §5-503(A) AND §5-906(B), ANNOTATED CODE OF MARYLAND (1996 REPLACEMENT VOLUME), COMAR 26.17.04.03A AND 26.23.02.01A, AND THE ATTACHED GENERAL AND SPECIFIC CONDITIONS, MD Aviation Administration, ("PERMITTEE"), IS HEREBY AUTHORIZED BY THE WATER MANAGEMENT ADMINISTRATION ("ADMINISTRATION") TO CONDUCT A REGULATED ACTIVITY IN A NONTIDAL WETLAND, BUFFER, OR EXPANDED BUFFER, AND/OR TO CHANGE THE COURSE, CURRENT OR CROSS-SECTION OF WATERS OF THE STATE, IN ACCORDANCE WITH THE ATTACHED PLANS APPROVED BY THE ADMINISTRATION ON February 11, 1998, ("APPROVED PLAN") AND PREPARED BY URS Greiner AND INCORPORATED HEREIN, AS DESCRIBED BELOW:

Construction of a midfield air cargo handling complex and attendant infrastructure including buildings; a taxiway; aircraft parking aprons; roadways; and support and stormwater management facilities. The project permanently impacts 44,298 square feet of forested and 4,123 square feet of emergent nontidal wetlands; 60,554 square of regulated buffer; and 1,329 linear feet of stream channel draining to tributaries to Stony Run. The project site is located at BWI Airport, east of MD 170 and south of Runway 10-28 in Anne Arundel County.

MD Grid Coordinates: N 486357 - E 886429



Terrance Clark, Chief  
Nontidal Wetlands & Waterways Division

Attachments: MDSPGP

cc: U.S. Army Corps of Engineers (Jennifer Moyer)  
URS Greiner (Veronica Piskor)  
WMA Compliance Program w/ file  
Mitigation Manager (Dave Walbeck)

CONDITIONS

THE FOLLOWING CONDITIONS APPLY TO ALL ACTIVITIES AUTHORIZED BY PERMIT NO. 97-NT-0440/199763850:

1. Validity: Permit is valid only for use by Permittee. Permit may be transferred only with prior written approval of the Administration. In the event of transfer, transferee agrees to comply with all terms and conditions of Permit.
  2. Initiation of Work, Modifications, and Extension of Term: Permittee shall initiate authorized activities within two (2) years of the Effective Date of this Permit or the Permit shall expire. Permittee may submit written requests to the Administration for (a) extension of the period for initiation of work, (b) modification of Permit, including the Approved Plan or, (c) not later than 45 days prior to Expiration Date, an extension of the term. Requests for modifications shall be in accordance with applicable regulations and shall state reasons for changes, and shall indicate the impacts on nontidal wetlands, streams, and the floodplain, as applicable. The Administration may extend the Expiration Date at its sole discretion.
  3. Responsibility and Compliance: Permittee is fully responsible for all work performed, and activities authorized by Permit shall be performed in compliance with Permit and Approved Plan. Permittee agrees that a copy of the Permit and Approved Plan shall be kept at the construction site and provided to its employees, agents and contractors. A person (including Permittee, its employees, agents or contractors) who violates or fails to comply with the terms and conditions of Permit, Approved Plan or an administrative order may be subject to penalties in accordance with §5-514 and §5-911, Environment Article, Annotated Code of Maryland (1996 Replacement Volume).
  4. Failure to Comply: If Permittee, its employees, agents or contractors fail to comply with Permit or Approved Plan, the Administration may, in its discretion, issue an administrative order requiring Permittee, its employees, agents and contractors to cease and desist any activities which violate Permit, or the Administration may take any other enforcement action available to it by law, including filing civil or criminal charges.
  5. Suspension or Revocation: Permit may be suspended or revoked by the Administration, after notice of opportunity for a hearing, if Permittee: (a) submits false or inaccurate information in Permit application or subsequently required submittals; (b) deviates from the Approved Plan, specifications, terms and conditions; (c) violates, or is about to violate terms and conditions of Permit; (d) violates, or is about to violate, any regulation promulgated pursuant to Title 5, Environment Article, Annotated Code of Maryland as amended; (e) fails to post a bond if required pursuant to COMAR 26.23.04.04B; (f) fails to allow authorized representatives of the Administration to enter the site of authorized activities at any reasonable time to conduct inspections and evaluations; (g) fails to comply with the requirements of an administrative action or order issued by the Administration; or (h) does not have vested rights under Permit and new information, changes in site conditions, or amended regulatory requirements necessitate revocation or suspension.
- Other Approvals: Permit does not authorize any injury to private property, any invasion of rights, or any infringement of federal, State or local laws or regulations, nor does it obviate the need to obtain required authorization or approvals from other State, federal or local agencies as required by law.

7. Site Access: Permittee shall allow authorized representatives of the Administration access to the site of authorized activities during normal business hours to conduct inspections and evaluations necessary to assure compliance with Permit. Permittee shall provide necessary assistance to effectively and safely conduct such inspections and evaluations.
8. Inspection Notification: Permittee shall notify the Administration's Compliance Program at least five (5) days before starting activities authorized by Permit and five (5) days after completion. For Frederick, Washington, Allegany and Garrett counties, Permittee shall call the Frostburg office at (301) 689-8494. For all other counties, call the Baltimore office at (410) 631-3510.
9. Sediment Control: Permittee shall obtain approval from the Department of the Environment for a sediment and erosion control plan specifying soil erosion control measures. The approved sediment and erosion control plan shall be included in the contract specifications and the Approved Plan, and shall be available at the construction site.
10. Federally Mandated State Authorizations:
  - Water Quality Certification: Authorized activities shall be performed in accordance with Maryland Department of the Environment Individual Water Quality Certification.
  - Coastal Zone Consistency: This Permit constitutes official notification that authorized activities are consistent with the Maryland Coastal Zone Management Program, as required by Section 307 of the Federal Coastal Zone Management Act of 1972, as amended. Activities within the following counties are not subject to this requirement: Allegany, Carroll, Frederick, Garrett, Howard, Montgomery, and Washington.
1. Best Management Practices During Construction: Permittee, its employees, agents and contractors shall conduct authorized activities in a manner consistent with the Best Management Practices specified on the Approved Plan.
2. Disposal of Excess: Unless otherwise shown on the Approved Plan, all excess fill, spoil material, debris, and construction material shall be disposed of outside of nontidal wetlands, nontidal wetlands buffers, and the 100-year floodplain, and in a location and manner which does not adversely impact surface or subsurface water flow into or out of nontidal wetlands.
3. Temporary Staging Areas: Temporary construction trailers or structures, staging areas and stockpiles shall not be located within nontidal wetlands, nontidal wetlands buffers, or the 100-year floodplain unless specifically included on the Approved Plan.
4. Temporary Stream Access Crossings: Temporary stream access crossings shall not be constructed or utilized unless shown on the Approved Plan. If temporary stream access crossings are determined necessary prior to initiation of work or at any time during construction, Permittee, its employees, agents or contractors shall submit a written request to the Administration and secure the necessary permits or approvals for such crossings before installation of the crossings. Temporary stream access crossings shall be removed and the disturbance stabilized prior to completion of authorized activities or with one (1) year of installation.
- charge: Runoff or accumulated water containing sediment or other suspended materials shall not be discharged into waters of the State unless treated by an approved sediment control device or structure.

16. Instream Construction Prohibition: To protect important aquatic species, activities within stream channels are prohibited as determined by the classification of the stream (COMAR 26.08.02.08): tributaries to Stony Run are Use I waterways; in-stream work may not be conducted from March 1 through June 15, inclusive, of any year.
17. Disturbance of Stream Channels: Motor driven construction equipment shall not be allowed within the stream channel unless shown on Approved Plan or specifically authorized in writing by the Administration.
18. Instream Blasting: Permittee shall obtain prior written approval from the Administration before blasting or using explosives in the stream channel.
19. Minimum Disturbance: Any disturbance of stream banks, channel bottom, wetlands, and wetlands buffer authorized by Permit or Approved Plan shall be the minimum necessary to conduct permitted activities. All disturbed areas shall be stabilized vegetatively no later than seven (7) days after construction is completed or in accordance with the approved grading and sediment control plan.
20. Restoration of Construction Site: Permittee shall restore the construction site upon completion of authorized activities. Undercutting, meandering or degradation of the stream banks or channel bottom, any deposition of sediment or other materials, and any alteration of wetland vegetation, soils, or hydrology, resulting directly or indirectly from construction or authorized activities, shall be corrected by Permittee as directed by the Administration.
21. Nontidal Wetland Mitigation Requirement: Permittee shall mitigate for 44,298 square feet of forested and 4,123 square feet of emergent nontidal wetland loss by for this permit and for LOA 95-NT-0792 in accordance with the approved Phase I conceptual mitigation plan, as may be modified by a Phase II Mitigation Plan approved by the Administration pursuant to COMAR 26.23.04.05C, within a time frame specified by the Administration. The Phase II Mitigation Plan shall be submitted to the Administration by May 11, 1998 unless an extension has been granted by the Administration. The Phase II Mitigation Plan shall govern in the event of discrepancy with the mitigation requirements in Permit.

WATER QUALITY CERTIFICATION

PERMIT NUMBER: 97-NT-0440/199763850  
EFFECTIVE DATE: February 16, 1998  
EXPIRATION DATE: February 16, 2003

PERMITTEE: State of Maryland / Aviation Administration  
P.O. Box 8766  
BWI Airport, Maryland 21240-0766  
Attention: Mr. Michael C. West

Description of Certified Project:

Construction of a midfield air cargo handling complex and attendant infrastructure including buildings; a taxiway; aircraft parking aprons; runways; and support and stormwater management facilities. The project permanently impacts 44,298 square feet of forested and 4,123 square feet of emergent nontidal wetlands; 60,554 square of regulated buffer; and 1,329 linear feet of stream channel draining to tributaries to Stony Run. The project site is located at BWI Airport, east of MD 170 and south of Runway 10-28 in Anne Arundel County.

This water quality certification is issued under authority of Section 401 of the Federal Water Pollution Control Act and its Amendments and the Environment Article, Sections 9-313 - 9-323, inclusive, Annotated Code of Maryland. A copy of this required certification has been sent to the Corps of Engineers. This certification does not relieve the applicant of responsibility for obtaining any other approvals, licenses or permits in accordance with federal, State, or local requirements and does not authorize commencement of the proposed project. The Maryland Department of the Environment has determined from a review of the plans that the construction of this facility and its subsequent operation as noted herein will not violate Maryland's water quality standards, provided that the following conditions are satisfied.

The certification holder shall comply with the conditions listed below:

GENERAL CONDITIONS

1. The proposed project shall be constructed in a manner which will not violate Maryland's Water Quality Standards as set forth in COMAR 26.08.02. The applicant is to notify this department ten (10) days prior to commencing work. Verbal notification is to be followed by written notice within ten (10) days.
2. The proposed project shall be constructed in accordance with the plan and its revisions.
3. All fill and construction materials not used in the project shall be removed and disposed of in a manner which will prevent their entry into waters of this State.
4. The certification holder shall notify the Water Management Administration, Nontidal Wetlands Division, in writing, upon transferring this ownership or responsibility for compliance with these conditions to another person. The new owner/operator shall request, in writing, transfer of this water quality certification to his/her name.
5. The certification holder shall allow the Maryland Department of the Environment or its representative to inspect the project area at reasonable times and to inspect records regarding this project.

SPECIAL CONDITIONS

6. The disturbance of the bottom of the water and sediment transport into the adjacent State waters shall be minimized. The applicant shall obtain and certify compliance with a grading and sediment control plan which has been approved by the:
  - (a) \_\_\_\_\_ Soil Conservation District or
  - (b) Erosion and Control Representative, Division of Environmental Services, Bureau of Highways, Department of Public Works of the City of Baltimore or
  - (c) The Department of the Environment, Water Management Administration or
  - (d) Montgomery County Department of Environmental Protection.

The approved plan shall be available at the project site during all phases of construction.


7.  Work in waters and wetlands shall NOT occur in the period March 1 through June 15 inclusive, of any year.
8.  Stormwater runoff from impervious surfaces shall be controlled to prevent the washing of debris into the waterway. The natural vegetation shall be maintained and restored when disturbed or eroded. Stormwater drainage facilities shall be designed, implemented, operated and maintained in accordance with the requirements of the applicable approving authority.

9. \_\_\_\_\_ Stormwater Management Plan: The certification holder shall provide to the Administration a stormwater management plan including cross-sections and other applicable drawings which incorporates effective pollutant removal strategies in uplands to treat the required volume of runoff from impervious surfaces prior to the release of stormwater into State waters, tidal wetlands, or nontidal wetlands. There shall be no discharge of untreated stormwater to State waters and tidal and nontidal wetlands. The plan shall be provided by \_\_\_\_\_ and shall be implemented by \_\_\_\_\_.
10. X The certification holder shall provide a stream restoration plan for review and approval by June 11, 1998. The plan shall restore and/or improve a minimum of 1,759 linear feet of stream channel. The approved plan shall be implemented as approved by a date specified in the approval.
11. X At least one culvert in every stream crossing shall be depressed at least one foot below existing stream bottom under the low flow condition. A low flow channel shall be provided through any riprap structures. The culvert shall be constructed and any riprap placed so as not to obstruct the movement of aquatic species.
12. X Stormwater Discharges: Stormwater discharges from ponds, stormwater management outfalls, and stormwater facilities shall have a velocity no greater than four feet per second for the two year storm in order to prevent erosion in the receiving waterway or wetland.
13. X Future Stormwater Discharges: Future stormwater discharges to certified pond(s) are prohibited unless the required volume of stormwater runoff from impervious surfaces is managed in uplands for effective pollutant removal.
14. \_\_\_\_\_ Stormwater Detention Ponds: Authorized stormwater detention or extended detention ponds shall have a maximum detention time of \_\_\_\_\_ hours for temporarily impounded stormwater volumes in excess of any permanent pool elevations or pond bottom.
15. \_\_\_\_\_ Integrated Pest Management: An Integrated Pest Management plan for any golf course shall be developed in accordance with the \_\_\_\_\_ . This plan shall be provided to the Administration for review and approval by \_\_\_\_\_ and implemented by \_\_\_\_\_.
16. X Stormwater Management Facilities: Stormwater management and drainage facilities shall be maintained in accordance with the requirements of the local applicable approving authority. If the stormwater management facility will be owned by a community or homeowners association, then the permittee shall, by appropriate means, require the association to monitor and maintain the facility according to the applicable approving authority.
17. X Use of Stormwater Management Facilities: Stormwater management facilities may not be put into service until all stabilization is completed and all temporary sediment control devices have been removed.

PERMIT # 97-NT-0440/199763850 CONDITIONS  
PAGE 8 of 8

Failure to comply with these conditions shall constitute reason for suspension or revocation of the Water Quality Certification and legal proceedings may be instituted against the certification holder in accordance with the Annotated Code of Maryland. In granting this certification, the Department reserves the right to inspect the operations and records regarding this project at anytime.

CERTIFICATION APPROVED

  
\_\_\_\_\_  
Terrance W. Clark, Chief  
Nontidal Wetlands and Waterways Division





REPLY TO  
ATTENTION OF

DEPARTMENT OF THE ARMY  
BALTIMORE DISTRICT, U.S. ARMY CORPS OF ENGINEERS  
P.O. BOX 1715  
BALTIMORE, MD 21203-1715

May 6, 1996

III/B. 18  
Category Number - Activity #  
97-NT 0440/199763850  
Authorization No.

## CENAB-OP-R-MDSPGP (MARYLAND STATE PROGRAMMATIC GENERAL PERMIT)

### TO WHOM IT MAY CONCERN:

Upon the recommendation of the Chief of Engineers, and under the provisions of Section 404 of the Clean Water Act, as amended, and Section 10 of the River and Harbor Act of 1899 (33 U.S.C. 403), the Secretary of the Army hereby authorizes the discharge of dredged, excavated, or fill material or structures into waters of the United States, including jurisdictional wetlands. These discharges and structures must comply with all the terms and conditions identified in this SPGP.

It has been determined that the project as authorized by the Maryland Department of the Environment (MDE) Authorization qualifies for the MDSPGP. Accordingly, you are authorized to undertake the activity pursuant to:

1. Section 10 of the River and Harbor Act of 1899 (33 U.S.C. 403); and/or
2. Section 404 of the Clean Water Act (33 U.S.C. 1344).

You are authorized to perform work in accordance with the terms and conditions specified in Section IV of the MDSPGP issued on May 6, 1996.

#### IV. Programmatic General Permit Conditions

The following conditions apply to all activities authorized under the MDSPGP.

##### A. General Requirements:

1. Other Permits. Authorization under the MDSPGP does not obviate the need to obtain other Federal, State, or local authorizations required by law.
2. Applicability of the MDSPGP shall be evaluated with reference to the Corps definition of waters of the United States, including wetlands and navigable waters of the United States. Applicants are responsible for delineating boundaries of all waters of the United States, including wetland boundaries. The delineation of wetland boundaries shall be accomplished in accordance with the current Federal Manual For Identifying Jurisdictional Wetlands and appropriate guidance issued by the Corps of Engineers.
3. Minimal Effects. Projects authorized by the MDSPGP shall have no more than minimal adverse environmental effects, individually and/or cumulatively.
4. Discretionary Authority. Notwithstanding compliance with the terms and conditions of the MDSPGP, the Corps retains discretionary authority to require individual permit review for any project based on concerns for the aquatic environment or for any other factor of the public interest. This authority is invoked on a case-by-case basis whenever the Corps determines that the potential consequences of the proposal warrant individual review based on the concerns stated above. This authority may be invoked for projects with cumulative environmental impacts that are more than minimal, or if there is a special resource or concern associated with a particular project, that is not already covered by the remaining conditions of the MDSPGP, that warrants greater review.

Whenever the Corps notifies an applicant that an individual permit may be required, authorization under the MDSPGP is voided, and no work may be conducted until the individual Corps permit is obtained, or until the Corps notifies the applicant that further review has demonstrated that the work may proceed under the MDSPGP.

5. Single and Complete Projects. The MDSPGP shall not be used for piecemeal work and shall be applied to single and complete projects, including maintenance activities. All components of a project shall be reviewed together as constituting one single and complete project. All planned phases of multi-phased projects shall be applied for and reviewed together as constituting one single and complete project. The MDSPGP shall not be used for any activity that is part of an overall project for which an Individual Permit is required.

##### B. National Concern:

1. Historic Properties. Any activity authorized by the MDSPGP shall comply with Section 106 of the National Historic Preservation Act. MDE, in cooperation with the Maryland Historic Preservation Office, shall conduct an initial review and notify the Corps if any archaeological or other cultural resources are in the vicinity of the project. The Corps may require permittees to perform a survey of archeological and historical resources in the project area. The Corps shall determine if consultation under Section 106 with the Advisory Council on Historic Preservation is required. If the permittee, during construction of work authorized herein, encounters a previously unidentified archaeological or other cultural resource within the area subject to DA jurisdiction that might be eligible for listing in the National Register of Historic Places, the permittee shall immediately stop work in the permit area and notify the District Engineer. If consultation is required, the applicant, after notification, shall not begin or continue work until notified by the District Engineer that the requirements of the National Historic Preservation Act have been satisfied and that the activity is authorized. Information on the location and existence of historical resources can be obtained from the Maryland Historic Preservation Office and the National Register of Historic Places.

2. National Lands. Activities authorized by the MDSPGP shall not impinge upon the value of any Federal land, including but not limited to, National Wildlife Refuge, National Forest, National Marine Sanctuary or any area administered by the National Park Service (e.g. Assateague Island National Seashore), or wetlands or waters designated under the Ramsar Convention.

3. Endangered Species. No activity is authorized under the MDSPGP which may affect a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act (ESA); or which is likely to destroy or adversely modify the critical habitat of such species. MDE, in cooperation with DNR, shall conduct an initial review and notify the Corps and FWS or NMFS if any Federally listed species or critical habitat is in the vicinity of the project. The Corps shall determine if formal consultation under Section 7 with FWS or NMFS is required. If consultation is required, the applicant, after notification, shall not begin or continue work until notified by the District Engineer that the requirements of the ESA have been satisfied and that the activity is authorized. Information on the location of threatened and endangered species and their critical habitat can be obtained from the FWS and NMFS.

4. Wild and Scenic Rivers. No activity is authorized under the MDSPGP that occurs in a component of the National Wild and Scenic River System, including rivers officially designated by Congress as study rivers for possible inclusion in the system, while such rivers are in an official study status.

5. Federal Projects.

a. Navigation Project. The MDSPGP does not authorize interference with any Corps' navigation project. Authorized projects may be subject to removal at the owner's expense prior to any future dredging or the performance of periodic hydrographic surveys by the Corps.

b. Other Federal Projects (i.e., Flood Control, Dams, Reservoirs). The MDSPGP does not authorize interference with any proposed or existing Federal project.

6. Federal Liability. In issuing this permit, the Federal Government does not assume any liability for the following:

a. damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes;

b. damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public interest;

c. damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit;

d. design or construction deficiencies associated with the permitted work; and

e. damage claims associated with any future modification, suspension, or revocation of the MDSPGP.

7. Navigation. There shall be no interference with navigation by the existence or use of a project authorized herein, and no attempt shall be made by the permittee to prevent the full and free use by the public of all navigable waters at or adjacent to the activity authorized herein. Nothing in the MDSPGP shall in any way restrict the District Engineer, U.S. Army Engineer District, Baltimore, from exercising his legal authority to protect the interest in navigation and Navigation Servitude of the United States.

C. Minimization of Environmental Impacts:

1. Minimization. Discharges of dredged, fill or excavated material into waters of the United States shall be avoided and minimized to the maximum extent practicable on-site.

2. Work in Wetlands. Heavy equipment working in wetlands shall be avoided if possible and, if required, shall minimize soil and vegetation disturbance by using techniques such as timbermats, geotextile fabric, and low pressure tire vehicles. Disturbed areas in wetlands shall be restored to preconstruction contours upon completion of the work.

3. Temporary Fill and Mats. Temporary fill and the use of mats are both considered discharge of fill material and must be included in the quantification of impact area authorized by the MDSPGP. Temporary fill in waters and wetlands authorized by the MDSPGP (e.g. access roads, cofferdams) shall be properly stabilized during use to prevent erosion. Temporary fill in wetlands shall be placed on geotextile fabric laid on existing wetland grade. Temporary fills shall be disposed of at an upland site, suitably contained to prevent erosion and transport to a waterway or wetland. Temporary fill areas shall be restored to their original contours and revegetated with comparable native species.

4. Sediment and Erosion Control. Adequate sedimentation and erosion control management measures, practices and devices, such as vegetated filter strips, geotextile silt fences, phased construction, or other devices, shall be installed and properly maintained to reduce erosion and retain sediment on-site during and after construction. They shall be capable of preventing erosion, of collecting sediment, suspended and floating materials, and of filtering fine sediment. These devices shall be removed upon completion of work and the disturbed areas shall be stabilized. The sediment collected by these devices shall be removed and placed at an upland location, in a manner that will prevent its later erosion into a waterway or wetland. All exposed soil and other fills shall be permanently stabilized at the earliest practicable date.

5. Water Crossings.

a. All temporary and permanent crossings of waterbodies shall be suitably culverted, bridged, or otherwise designed to withstand and to prevent the restriction of high flows. The design shall also prevent the obstruction of movement by aquatic life indigenous to the waterbody.

b. No open trench excavation shall be conducted in-stream without use of State-approved diversion structures.

c. Temporary bridges, culverts, or cofferdams shall be used for equipment access across streams.

d. Temporary structures shall be removed and the area restored. The areas of fill and/or cofferdams must be included in total waterway/wetlands impacts.

6. Discharge of Pollutants. All activities involving any discharge or relocation of pollutants into waters of the United States authorized under the MDSFGP shall be consistent with applicable water quality standards, effluent limitations, standards of performance, prohibitions, and pretreatment standards and management practices established pursuant to the CWA (33 U.S.C. 1251), and applicable State and local laws and regulations.

7. Spawning Areas. Discharge in fish and shellfish spawning or nursery areas during spawning seasons shall be avoided, and impacts to these areas shall be avoided or minimized to the maximum extent practicable during all other times of year.

8. Environmental Value. The permittee shall make every reasonable effort to carry out the construction or operation of the work authorized herein in a manner so as to maintain as much environmental values as is practicable, and to minimize any adverse impacts on existing fish, wildlife and natural environmental values.

**D. Procedural Conditions:**

1. Inspections. The permittee shall permit the District Engineer or his authorized representative(s) to make periodic inspections at any time deemed necessary to ensure that the work is being performed in accordance with the terms and conditions of the MDSFGP. The District Engineer may also require post-construction engineering drawings (as-built plan) for completed work, and post-dredging survey drawings for any dredging work.

2. Maintenance. The permittee shall maintain the work or structures authorized herein in good condition, including maintenance, to ensure public safety.

3. Property Rights. The MDSFGP does not convey any property rights, either in real estate or material, or any exclusive privileges, nor does it authorize any injury to property or invasion of rights or any infringement of Federal, State, or local laws or regulations.

4. Modification, Suspension and Revocation. The MDSFGP may be either modified, suspended, or revoked in whole or in part pursuant to DA policies and procedures and any such action shall not be the basis for any claim for damages against the United States.

5. Restoration. The permittee, upon receipt of a notice of revocation of authorization under this permit, shall restore the wetland or waterway to its former condition, without expense to the United States and as directed by the Secretary of the Army or his authorized representative. If the permittee fails to comply with such a directive, the Secretary or his designee may restore the wetland or waterway to its former condition, by contract or otherwise, and recover the cost from the permittee.

6. Special Conditions. The Corps may impose other special conditions on a project authorized pursuant to the MDSFGP, where it is determined necessary to minimize adverse environmental effects or based on any other factor of the public interest. Failure to comply with all conditions of the authorization, including special conditions, will constitute a permit violation and may subject the permittee to criminal, civil, or administrative penalties, and/or restoration.

7. False or Incomplete Information. If the Corps makes a determination regarding the eligibility of a project under this permit, and subsequently discovers that it has relied on false, incomplete or inaccurate information provided by the permittee, the permit shall not be valid and the Government may institute appropriate legal proceedings.

8. Compliance. Any activity performed in Federally regulated waters, including wetlands, that is not in total compliance with all the terms, conditions, and processing procedures of the MDSFGP constitutes unauthorized work and is subject to an enforcement action by the Department of the Army. Furthermore, the MDSFGP does not delegate any Section 404 enforcement or regulatory authority. When unauthorized work occurs in a Federally regulated wetland or other waters, it is subject to one or more of the following responses by the Secretary of the Army:

a. A Cease and Desist order and/or an administrative compliance order requiring remedial action.

b. Initiation and assessment of Class I administrative penalty orders pursuant to Section 309(g) of the CWA up to \$10,000 per day up to a maximum of \$125,000.

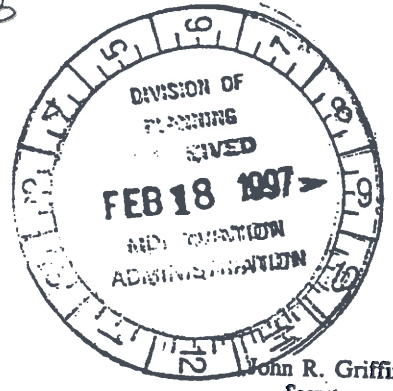
c. Initiation and assessment of a Class II administrative penalty for continuing violation of \$10,000 per day up to a maximum of \$125,000.

d. Referral of the case to the U.S. Attorney with a recommendation for a civil or criminal action.

e. If the Corps determines that an after-the-fact application is appropriate, it will be evaluated following Category III procedures.

9. Enforcement. The MDSFGP does not apply to any existing or proposed activity in Corps jurisdiction associated with an on-going Corps enforcement action, until such time as the enforcement action is resolved or the Corps determines that the activity may proceed independently without compromising the enforcement action.

D100795.03



Parris N. Glendening  
Governor

**Maryland Department of Natural Resources**  
**Forest Service**  
8023 Long Hill Road  
Pasadena, Maryland 21122

John R. Griffin  
Secretary  
Ronald N. Young  
Deputy Secretary

February 13, 1998

Barbara Grey  
MAA  
P.O. box 8766  
BWI Airport, MD 21240-0766

RE: BWI Midfield Cargo Complex  
S98-27

Dear Ms. Grey:

This is to inform you that the project BWI Midfield Cargo Complex forest conservation plan, submitted February 9, 1998, has been reviewed. The application has been determined not to be complete.

The following items need to be addressed:

1. Submit the completed and signed forest conservation application form.
2. Submit the forest conservation worksheet.
3. Revise your construction sequence notes to reflect the following language. Notify MD DNR Forest Service at (301) 464-3065, 48 hours in advance, for the preconstruction meeting, inspection of retention line, and completion of construction activities.
4. Submit the long term protection agreement.

If you have any questions please call me at (410) 768-0830.

Sincerely,  
  
Marian R. Honeczy  
Southern Regional Coordinator

**APPENDIX B**

**PUBLIC INVOLVEMENT**

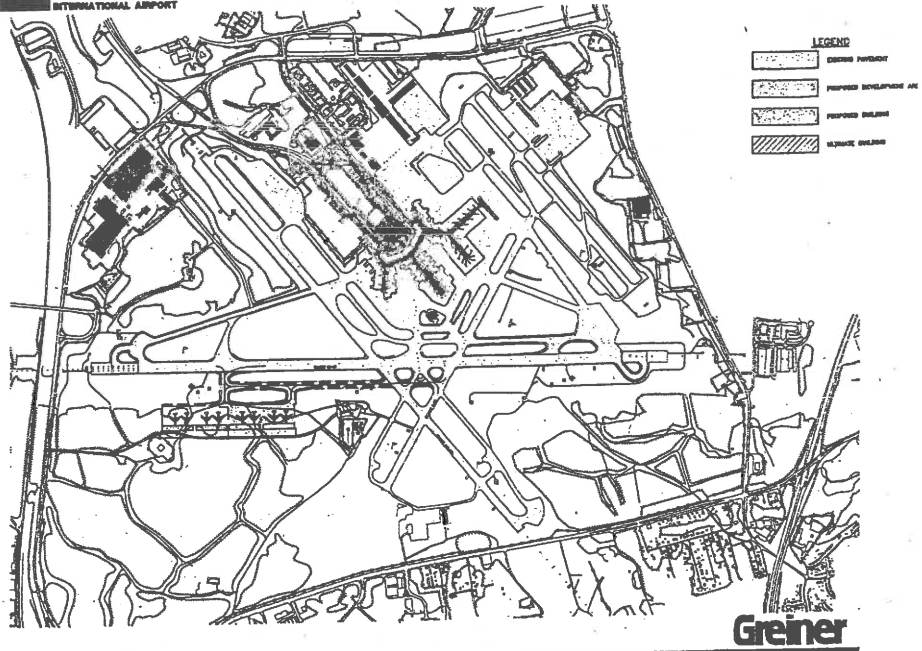
**APPENDIX B  
CONTENTS**

<b>Item</b>	<b>Date</b>	<b>Coordinating Documents</b>
1	March 21, 1996	BWI Neighbors Committee Meeting Minutes
2	November 16, 1996	Draft Environmental Assessment Hearing Notice
3	December 17, 1996	Public Hearing Handout
4	December 17, 1996	Public Hearing Transcript
5	Various	Public Comments/Letters
6	Various	Maryland Aviation Administration responses

PUBLIC NOTICE  
 MARYLAND DEPARTMENT OF TRANSPORTATION  
 MARYLAND AVIATION ADMINISTRATION  
 WILL CONDUCT A PUBLIC HEARING  
 Tuesday, December 17, 1996/7:00 p.m.  
 at the  
 Glen Burnie High School Auditorium  
 7550 Baltimore/Annapolis Blvd. SE  
 Glen Burnie, Maryland



## AIRPORT DEVELOPMENT PLAN



P:\100001\01\100001 03/20/96 10:20

The purpose of this hearing is to afford all interested persons the opportunity to obtain information about, and present their views regarding, the proposed construction of Midfield Cargo Complex at Baltimore/Washington International (BWI) Airport.

The hearing will be conducted in the Auditorium. Displays and maps depicting the proposed project, the alternatives considered, and the environmental analysis will be available for public review between 6:30 p.m. and 9 p.m. Airport representatives will be available to discuss points of interest with you. Brochures and forms for written comments will be available at the hearing.

The public hearing will start at 7 p.m. and adjourn at 9 p.m. The hearing will start with a brief project overview, followed by the receipt of testimony from registered speakers. Individuals and representatives of organizations that desire to be heard, may sign up to speak by: 1) submitting a written request to Mr. Lynn S. Bezilla, Director of Planning, Maryland Aviation Administration, P.O. Box 8766, Baltimore/Washington International Airport, MD 21240; 2) calling Mr. Bezilla's office at (410) 859-7074; or 3) attending the hearing and signing up with the receptionist to speak following those speakers on the previously established list. A time limitation of 5 minutes will be allowed to each speaker.

Written statements, including comment cards, and other exhibits in lieu of, or in addition to, an oral presentation at the hearing may be submitted to Mr. Bezilla at the above address until 5 p.m. on January 7, 1997 in order to be included in the public hearing record. Comments included in the public hearing record will be summarized and addressed in the final environmental document.

Beginning on Sunday, November 16, 1996, the Draft Environmental Assessment (EA) for the proposed Midfield Cargo Complex at Baltimore/Washington International Airport will be available for review at the following locations:

Anne Arundel County Public Libraries

1410 West Street  
 Annapolis, MD  
 1 E 11th Avenue  
 Brooklyn Park, MD  
 400 Shipley Road  
 Linthicum, MD  
 1010 Eastway  
 Glen Burnie, MD

Howard County Public Library

Main Branch  
 10375 Little Patuxent Parkway  
 Columbia, MD

1270 Odenton Road  
 Odenton, MD  
 2624 Annapolis Road  
 Severn, MD  
 1130 Duvall Highway  
 Pasadena, MD  
 45 McKinsey Road  
 Severna Park, MD

Baltimore County Public Library

Arbutus Branch  
 1520 Sulphur Spring Road  
 Arbutus, MD

Maryland Aviation Administration  
 Office of Planning and Engineering  
 Lower Level, Pier A  
 BWI Terminal Building

HEARING IMPAIRED: If anyone with a hearing impairment desires to attend this hearing, please notify Mr. Lynn Bezilla at the above address or phone number or teletype to (410) 859-7227 no later than 5 days prior to this hearing, clarifying whether an oral or sign language interpreter is needed. To the extent this is feasible and possible, an interpreter will be provided.

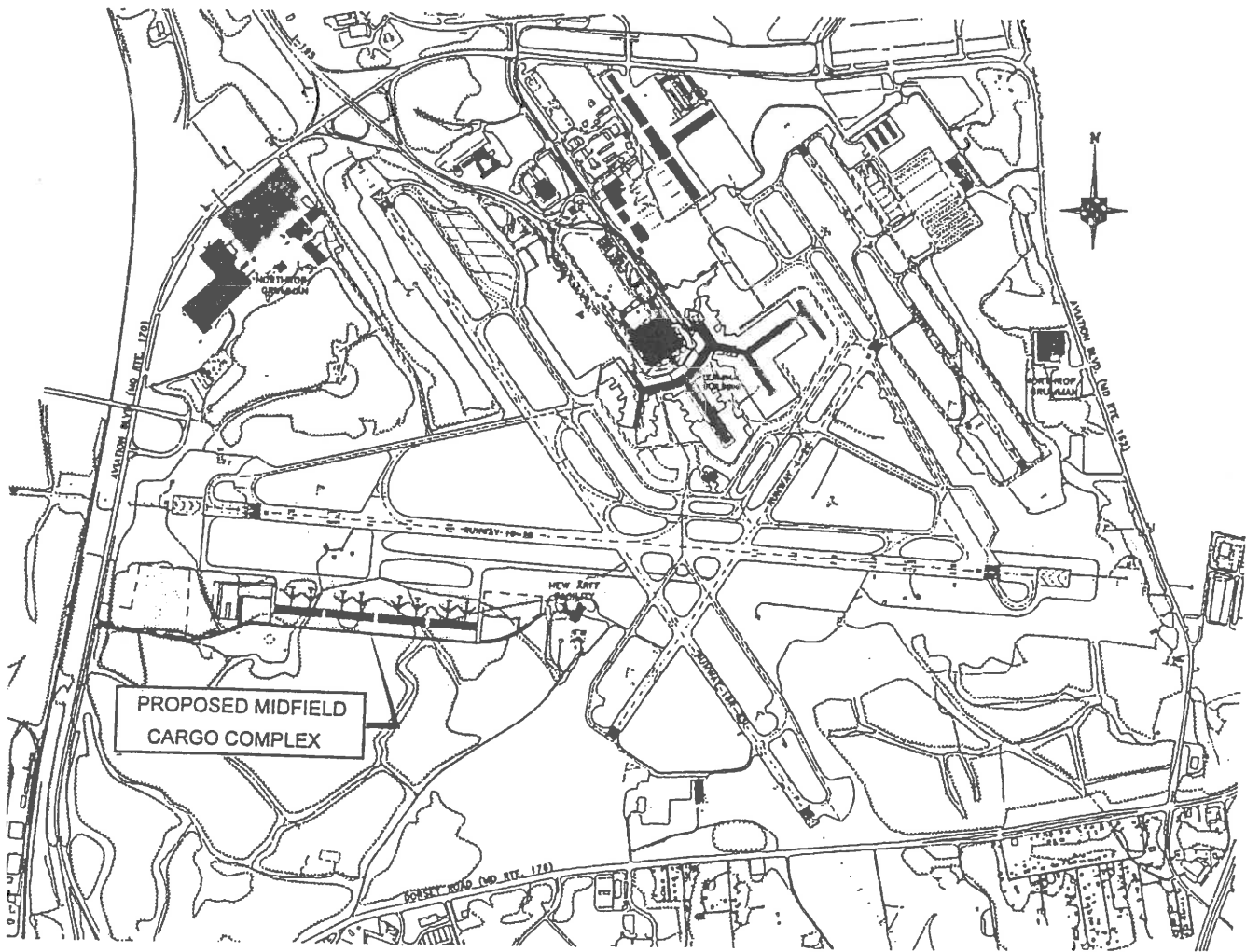
MICHAEL C. WEST,  
 MARYLAND AVIATION ADMINISTRATION

Baltimore Sun, Saturday, November 16, 1996

**BALTIMORE/WASHINGTON INTERNATIONAL AIRPORT  
PUBLIC HEARING  
December 17, 1996**

**On The  
DRAFT ENVIRONMENTAL ASSESSMENT  
For The  
PROPOSED AIR CARGO DEVELOPMENT**

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## INTRODUCTION

This brochure is intended to highlight key information regarding the proposed development of a Cargo Complex at Baltimore/Washington International Airport (BWI).

This public hearing has been scheduled to acquaint interested persons with the plans to expand BWI cargo facilities, to present the effects of this project on the environment, and to provide an opportunity for public participation in the overall planning process. The public hearing will be divided into two parts. Beginning at 6:30 p.m., the Environmental Assessment (EA), detailed maps and diagrams, and other supporting information will be on display in the entry lobby area. Maryland Aviation Administration (MAA) representatives will be available to answer questions concerning the information presented. Formal public statements may be given on the proposed action beginning at 7:00 p.m. and concluding at 9:00 p.m.

For persons not wishing to make a public statement for the record, written comments may also be submitted. A pre-addressed postage-paid form is provided with this brochure for your convenience to submit written comments. Written comments must be postmarked no later than January 7, 1997.

In accordance with the National Environmental Policy Act of 1969, a draft EA document has been prepared regarding MAA's proposed development of a Midfield Cargo Complex and associated improvements at BWI Airport. If more specific information is needed concerning this proposed action, the draft EA is available at a number of locations shown on the last page of this brochure. Please direct all written comments to the Project Manager:

Mr. Lynn S. Bezilla, Director  
Division of Planning  
Maryland Aviation Administration  
P.O. Box 8766  
BWI Airport, Maryland 21240-0766  
(410) 859-7074

## PURPOSE AND NEED

The MAA is proposing to develop a Midfield Cargo Complex at BWI Airport. The air cargo sector of the aviation industry provides many services in an expanding global marketplace: scheduled and charter freight, express and small package transport, and mail service. As the air cargo industry has evolved during the past twenty years, air cargo facilities and services have become an integral part of the development of BWI Airport.

The amount of air cargo handled at BWI has grown from 71,876 tons in 1972 to 162,834 tons in 1995, an average annual increase of 3.6 percent. Recent MAA projections indicate that cargo will continue to increase at an average annual rate of 3.5 percent over the next twenty years to approximately 327,000 tons in 2015. Expected growth is based, in part, on the attraction of new markets to BWI while maintaining and expanding the markets already served. Growth is also

expected from increased cargo capacity of international flights (including wide-body aircraft) after the opening of the new International Pier in 1997. The forecast also projects moderate growth in both domestic and international all-cargo services.

In addition to air cargo transported in the bellies of approximately 600 daily passenger airline operations (takeoffs and landings), BWI currently accommodates an average of 25 all-cargo aircraft operations per day. The forecasts expect a total of 30 all-cargo operations per day by 1999 and 35 all-cargo operations per day by 2015.

The 20-year Master Plan for BWI Airport, prepared in 1987, identified the need for additional air cargo facilities to support the expected growth in cargo activity through the year 2015. In light of the expected increase in air cargo activity, the MAA recently completed a more detailed assessment of BWI's air cargo facility needs. The assessment concluded that additional air cargo facilities would need to be developed to accommodate expected growth through the year 2015. The needed facilities consist of up to four 60,000 square-foot cargo buildings, with both warehouse and office space, along with associated ramp, taxiway, auto and truck parking, and other support facilities as well as safe and convenient highway access.

Construction of the first two buildings and support facilities are anticipated to cost \$34.9 million, with \$21.1 million provided by federal and State funds and \$13.8 million provided by private sector development. Construction of the total Midfield Cargo Complex is anticipated to cost \$57.1 million.

The presence of air cargo facilities and services at BWI generates a positive economic benefit to the Baltimore-Washington region. In 1995, there were an estimated 569 jobs directly attributable to air cargo operations at BWI, having a direct economic benefit of nearly \$38 million. When "multiplier" effects (which include the recirculation of direct impacts into the community) are calculated, the total 1995 economic benefit of BWI air cargo operations was estimated to be \$82 million, including 956 jobs. Assuming that economic impact relationships remain the same as current trends, air cargo activity at BWI in the year 2015 could result in approximately 2,000 jobs and a total annual economic benefit of \$165 million to the State of Maryland.

## PROJECT DESCRIPTION

Several alternatives for meeting facility requirements were considered for the purposes of the EA. The alternatives which were comparatively assessed include:

- "No-Build" Alternative: Provide No New Cargo Facilities;
- Build Alternative 1: Expansion of the Existing Cargo Complex into the Existing Airfield Maintenance Area and Construction of a New Midfield Cargo Complex;
- Build Alternative 2: Construction of New Cargo Facilities in the

Southeast Quadrant of the Airport;

- **Build Alternative 3:** Construction of New Cargo Facilities in the Southwest Quadrant of the Airport; and
- **Build Alternative 4:** Construction of New Cargo Facilities in the Midfield Area of the Airport.

Each of the four "Build" alternatives provides for incremental development of new cargo facilities as demand increases through the planning period. The criteria used for analyzing each of the alternatives included:

- its ability to satisfy the purpose and need for additional cargo facilities;
- the operational efficiencies associated with its location on the Airport;
- the nature and extent of potential environmental impacts due to its construction;
- its compatibility with existing and planned Airport facilities;
- its feasibility and cost of construction; and
- its capability to provide for expansion to meet demand beyond the Year 2015.

Using this criteria, Alternative 4: construction in the Midfield Area (Exhibit 1), was selected as the Preferred Alternative, based on its ability to best meet the criteria.

## ENVIRONMENTAL CONSIDERATIONS

The draft EA contains a detailed evaluation and comparison between the potential environmental impacts of the "No Build" alternative and the four "Build" alternatives which were considered. The EA indicates that the Preferred Alternative has the effects described below.

- **Noise:** Computer-modelled noise contours, under worst-case conditions, for the study years 1999 and 2015, result in a negligible increase (0.2 to 0.5 Ldn dBA) in noise exposure between the "No-Build" and "Build" conditions. These changes are well below the significance threshold of a 1.5 dBA increase established by the Federal Aviation Administration (FAA). This result is due to the small number of additional aircraft operations generated by the new facility. It is expected that ground noise

will not be a major contributor to the community's total airport noise impact.

- **Water Quality:** Grading will result in the filling of Signal Branch, impacting 3.8 acres of floodplain, 1.6 acres of wetlands, and approximately 0.2 acre of wetlands buffer. Open channel flow will be used, on-site to the extent possible, and stormwater management practices and facilities will provide peak flow control and water quality. The wetlands will be fully replaced in accordance with the Joint Federal/State Permit process.
- **Trees:** Approximately 116.3 acres of forest and 97.3 acres of mowed grassland will be impacted. A large portion of these impacts are the result of stockpiling excess material generated by earthwork. On-Airport stockpile locations were selected to reduce hauling costs, and were modified to minimize overall impacts to floodplains, wetlands, and trees while complying with FAA obstruction clearance requirements. If possible, additional reduction of total land disturbed by the stockpiles will be achieved in final design. The forest impacts have already been replaced through an on-going reforestation program in areas west of the Airport.
- **Archeologic Resources:** Approximately 11 acres of the primary stockpile area is in a zone with high probability for prehistoric sites. This area will be evaluated for potential National Register eligible sites and, if appropriate, treated in accordance with applicable state and federal requirements.

All required environmental permits will be obtained prior to construction and appropriate mitigation measures implemented.

## **NEXT STEPS**

In the federal environmental process, the draft EA document is widely circulated for review and input. The review process includes public participation through the public hearing process and written comments submitted by the public. The Assessment is also reviewed by a number of federal and state agencies, including the FAA, the U.S. Army Corps of Engineers, the Maryland Department of the Environment, the Maryland Department of Natural Resources, and others.

Recommendations and comments from the public and agencies are reviewed and analyzed to produce a final EA document. This final EA is then presented to the FAA for approval. Construction may not begin until the FAA approves the final EA.

Project design is anticipated to be completed by Fall, 1997. If the FAA approves the EA, construction of the first two buildings, associated parking areas and taxiways could begin as early as Winter, 1997 and be completed by Winter 1998. The planning and design for the Midfield Cargo Complex do not constitute a commitment to build. An assessment of market conditions will be undertaken as design progresses. If the market is not forthcoming for both buildings proposed for the initial development, MAA may only construct one building. If the market does not require even one building, MAA plans to defer construction until market conditions warrant.

## LOCATION OF DRAFT ENVIRONMENTAL ASSESSMENT

As of Saturday, November 16, 1996 the draft EA for the proposed Midfield Cargo Complex at BWI Airport has been available for public review at the following locations:

### Anne Arundel County Public Libraries

1410 West Street  
Annapolis, MD

1270 Odenton Road  
Odenton, MD

1 E 11th Avenue  
Brooklyn Park, MD

2624 Annapolis Road  
Severn, MD

400 Shipley Road  
Linthicum, MD

1130 Duvall Highway  
Pasadena, MD

1010 Eastway  
Glen Burnie, MD

45 McKinsey Road  
Severna Park, MD

### Howard County Public Library

Main Branch  
10375 Little Patuxent Parkway  
Columbia, MD

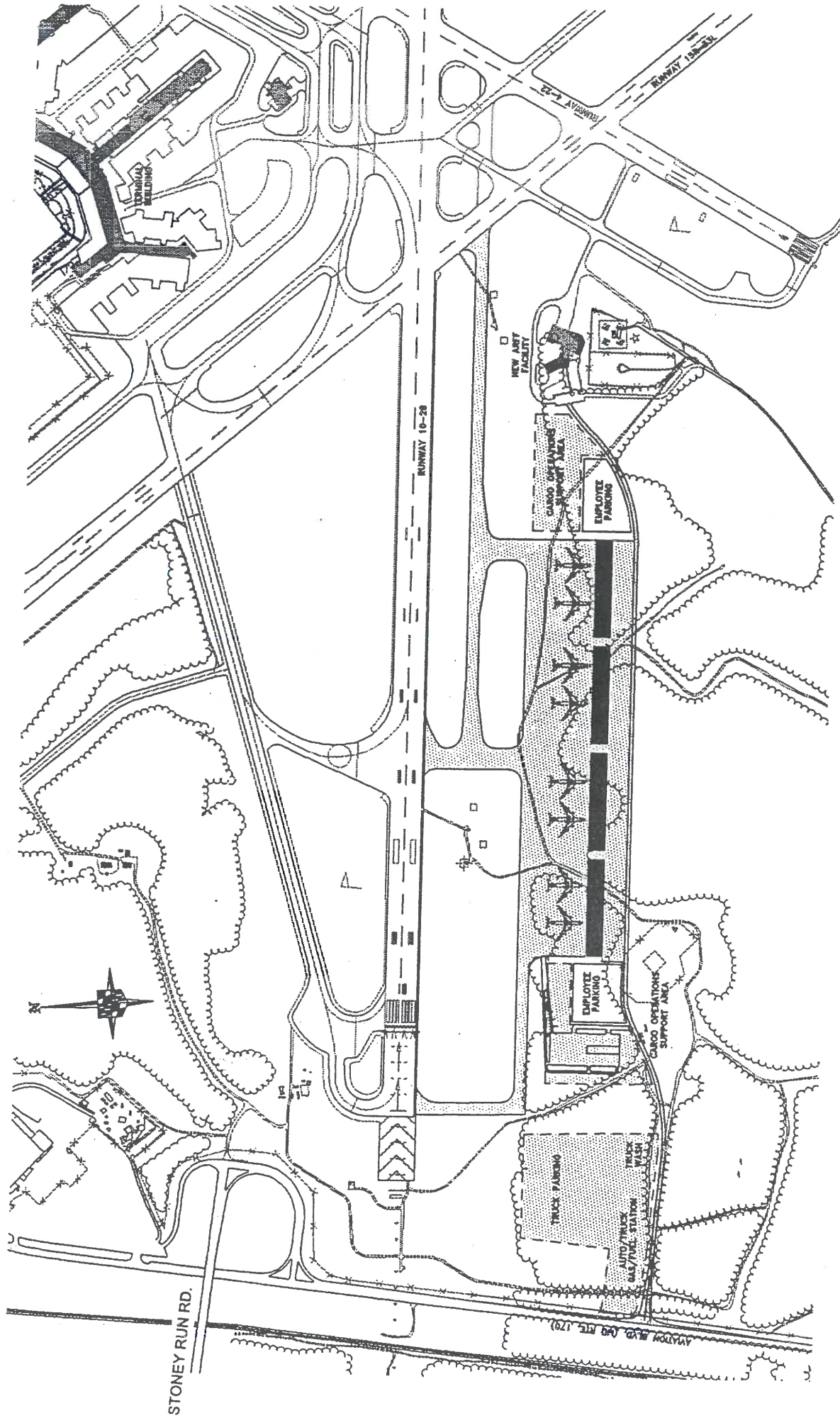
### Baltimore County Public Library

Arbutus Branch  
1520 Sulphur Spring Road  
Arbutus, MD

### Maryland Aviation Administration

Office of Planning and Engineering  
Lower Level, Pier A  
BWI Terminal Building

# MIDFIELD ARGON COMPLEX PROPOSED ACTION



PUBLIC HEARING PROCEDURES  
BALTIMORE/WASHINGTON INTERNATIONAL AIRPORT  
DEVELOPMENT OF AIR CARGO FACILITIES  
DECEMBER 17, 1996

The purpose of this public hearing is to accept comments for the record from the general public and agencies that wish to be heard with respect to the social, economic and environmental aspects of the proposed Midfield Cargo Complex at Baltimore/Washington International Airport.

Anyone having questions or desiring additional information regarding the proposed action should direct their inquiries to Maryland Aviation Administration staff located at the exhibits in the hallway at the rear of the auditorium. These exhibits will remain staffed throughout this hearing until 9:00 p.m.

Public comments may be presented in two ways:

1. Persons may make an oral statement at the open microphone located at the front of this auditorium. Individuals who wish to make a statement in this way must register at the hearing registration desk at the entrance to the auditorium.

All speakers must speak from the microphone, stating their name, address and, if applicable, the name of any agency or organization they represent. We request that these comments be limited to five minutes. A timer will indicate the time remaining at the end of each minute.

2. Persons who do not wish to make an oral public statement, and persons who wish to supplement their oral statement, may submit a written statement. For your convenience, the informational brochures available at the hearing registration desk also contain a response card which you may use to provide your statement if you so desire. Written comments on this proposed project will be accepted by the Maryland Aviation Administration if postmarked no later than January 7, 1997.

All comments, whether submitted orally or in writing, shall become part of the transcript for this hearing and shall be included in the Final Environmental Assessment for this proposed action.

This hearing was advertised as being held from 7:00 p.m. until 9:00 p.m. on Tuesday, December 17, 1996. If there are persons still wishing to comment at 9:00 this evening, the hearing may be extended for a reasonable time or comments may be submitted to the Maryland Aviation Administration in writing.

The order of speakers shall be: first, elected officials, then pre-registered speakers and finally, those who have registered today.

# Maryland Aviation Administration

## QUESTIONS AND/OR COMMENTS \*

Mid-field Air Cargo Complex

6:30 p.m. to 9:00 p.m.

Tuesday, December 17, 1996

Glen Burnie Senior High School

NAME

ADDRESS

CITY/TOWN

STATE

ZIP

I/we wish to comment or inquire about the following aspects of this project

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**\*To be included in public hearing records, comments must be postmarked no later than January 7, 1997.**





NO POSTAGE  
NECESSARY  
IF MAILED  
IN THE  
UNITED STATES

**BUSINESS REPLY MAIL**  
FIRST CLASS MAIL PERMIT NO: 17803 BALTIMORE MD

POSTAGE WILL BE PAID BY ADDRESSEE



Baltimore/Washington International Airport  
Attn: Lynn Bezilla  
P.O. Box 8766  
BWI Airport MD 21240-0766



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This form is for your use to enroll your name on the project mailing list and/or for offering written comments. To do so, remove form, fold, and close by taping before mailing. All postage will be paid by the Maryland Aviation Administration. To be included in public hearing records, comments must be postmarked no later than January 7, 1997.

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BALTIMORE/WASHINGTON  
INTERNATIONAL AIRPORT

PROPOSED AIR CARGO  
FACILITY DEVELOPMENT

PUBLIC HEARING  
ON THE DRAFT ENVIRONMENTAL ASSESSMENT  
FOR THE  
PROPOSED AIR CARGO DEVELOPMENT

December 17, 1996

7:00 p.m.

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MR. ROBERT RUDOLPH:

Good evening. My name is Robert H. Rudolph, Jr., I am the Director of the Division of Aviation Noise and Abatement for the Maryland Aviation Administration and hearing officer for this public hearing.

Let the record show it is 7 p.m., December 17, 1996. I hereby call to order this public hearing.

A draft environmental assessment has been prepared for this project in conformance with the requirements of the National Environmental Policy Act of 1969, the Maryland Environmental Policy Act of 1973 and the Airport and Airway Improvement Act amendments of 1987.

The draft environmental assessment was distributed to 10 local public libraries on November 15, 1996. Copies of the document have also been available for inspection at the MAA offices at the BWI Airport.

The proposed project and alternatives being considered are depicted and described in detail along with their environmental effects in the Draft Environmental Assessment document. Copies are currently available for review in the hallway at the entrance to this auditorium.

This information is also summarized in a brochure which is available for public distribution at the hearing registration desk at the rear of this auditorium.

Drawings depicting the proposed improvements and other pertinent information about the project are also on display in the hallway at the auditorium entrance. MAA and consultant staff are available at the

1 displays to discuss the proposed project and answer any questions you  
2 may have concerning the project until 9:00 p.m. However, any formal oral  
3 comments concerning the project must be made at the microphone in this  
4 room.

5 The MAA is proposing to develop a Midfield Cargo Complex  
6 at BWI Airport. The air cargo sector of the aviation industry provides  
7 many services in an expanding global marketplace: scheduled and  
8 charter freight, express and small package transport, and mail service.

9 As the air cargo industry has evolved during the past twenty  
10 years, air cargo facilities and services have become an integral part of  
11 the development of BWI Airport.

12 The amount of air cargo handled at BWI has grown from  
13 71,876 tons in 1972 to 162,834 tons in 1995, an average annual increase of  
14 3.6 percent. Recent MAA projects indicate that cargo will continue to  
15 increase at an average annual rate of 3.5 percent over the next twenty  
16 years to approximately 327,000 tons in 2015.

17 Expected growth is based, in part, on the attraction of new  
18 markets to BWI while maintaining and expanding the markets already  
19 served. Growth is also expected from increased cargo capacity of  
20 international flights (including wide-body aircraft) after the opening of the  
21 new International Pier in 1997. The forecast also projects moderate  
22 growth in both domestic and international all-cargo services.

23 In addition to air cargo transported in the bellies of

1 approximately 600 daily passenger airline operations (takeoffs and  
2 landings), BWI currently accommodates an average of 25 all-cargo  
3 aircraft operations per day. The forecasts expect a total of 30 all-cargo  
4 operations per day by 1999 and 35 all-cargo operations per day by 2015.

5 The 20-year Master Plan for Baltimore/Washington  
6 International Airport, prepared in 1987, identified the need for additional  
7 air cargo facilities to support the expected growth in cargo activity  
8 through the year 2015. In light of the expected increase in air cargo  
9 activity, the MAA recently completed a more detailed assessment of BWI's  
10 air cargo facility needs.

11 The assessment concluded that additional air cargo  
12 facilities would need to be developed to accommodate expected growth  
13 through the planning period. The needed facilities consist of up to four  
14 60,000 square-foot cargo buildings, with both warehouse and office  
15 space, along with associated ramp, taxiway, auto and truck parking, and  
16 other support facilities as well as safe and convenient highway access.

17 The total estimated cost is \$51.7 million dollars. The initial  
18 phase of this development would consist of the first two buildings and  
19 associated support facilities. The cost of this phase is 34.9 million dollars,  
20 including 13.8 million dollars of private sector funding.

21 If the Federal Aviation Administration approves the  
22 Environmental Assessment, construction of the first two buildings and  
23 associated parking areas and taxiways could begin as early as Winter

1 1997 and the first building could be completed by Winter 1998.

2           However, the planning and design for the Midfield Cargo  
3 Complex do not constitute a commitment to build. An assessment of  
4 market conditions will be undertaken as design progresses. If the market  
5 is not forthcoming for both buildings proposed for the initial development,  
6 MAA may only construct one building. If the market does not require even  
7 one building, MAA plans to defer construction until market conditions  
8 warrant.

9           The specific purpose of this hearing is to accept public  
10 comments for the record from the general public and agencies that wish  
11 to be heard with respect to the social, economic and environmental  
12 aspects of the proposed development of air cargo facilities at BWI Airport.

13           A paper outlining the public hearing procedures is available  
14 at the hearing registration desk. The procedures to be followed for this  
15 hearing are as follows:

16           Public comments may be presented in two ways:

- 17           1. Persons may give oral comments at the open microphone  
18                 located at the front of this auditorium. We request that  
19                 these comments be limited to approximately five  
20                 minutes to give everyone a chance to speak.
- 21           2. Persons who do not wish to comment orally, and persons  
22                 who wish to supplement their oral statement, may  
23                 submit a written statement. For your convenience,

1 the informational brochures available at the hearing  
2 registration desk contain a self addressed response  
3 card which you may use to provide your statement if  
4 you so desire, or letters will also be accepted. Written  
5 comments on this proposed action will be accepted  
6 by the Maryland Aviation Administration if  
7 postmarked no later than January 7, 1997.

8 All comments, whether submitted orally or in writing, shall  
9 become part of the transcript for this hearing and shall be considered in  
10 the Final Environmental Assessment for this proposed action.

11 This hearing was advertised as being held from 7:00 p.m.  
12 until 9:00 p.m. on Tuesday, December 17, 1996. If there are persons still  
13 wishing to speak at 9:00 this evening, the hearing will be extended for a  
14 reasonable time at the discretion of the Hearing Officer or comments may  
15 be submitted to the Maryland Aviation Administration in writing.

16 Any person who wishes to make a statement who is not  
17 registered at the hearing registration desk, please do so now. Anyone  
18 having questions or desiring additional information regarding the  
19 proposed action should direct their inquiries to MAA staff located at the  
20 exhibits in the hallway at the rear of the auditorium. These exhibits will  
21 remain staffed through this Hearing until 9:00 p.m.

22 All speakers must speak from the microphone, stating their  
23 name, address and, if applicable, the name of any agency or

1 organization they represent.

2 We will now proceed with the public statements. The order of  
3 speakers shall be: first, elected officials, then pre-registered speakers  
4 and finally, those who have registered this evening.

5 Are there any elected officials present who wish to speak at  
6 this time?

7 We will now proceed with other individuals who have  
8 registered to speak. The first registered speaker is Ernie Michaelson with  
9 the BWI Neighbors Committee.

10 MR. ERNIE MICHAELSON:

11 Evening Rudy and Airport Executives. My name is Ernest  
12 Michaelson of 7423 Hawkins Drive, Hanover in the community of Timber  
13 Ridge.

14 It turns out that we are the closest community of any in the  
15 entire area around the airport to the airport property. We are worried  
16 mostly about noise and the increase that this cargo facility might have on  
17 noise.

18 One of the reasons we are worried is that to the south of us  
19 we have Route 100 just went through and it has already devastated the  
20 property values in Merriweather. To the west of us we have Route 170  
21 which has increased a lot because of the off ramp from 100. We have the  
22 Cantina which is a dance hall to our east and we have the airport to the  
23 north. We are just hoping that we don't have an increase in the noise.



1                   We are assured by Rudy and the rest of the literature that we  
2                   won't have an increase in the Ldn. We are still somewhat concerned we  
3                   might have power back noises, we are also sure that we're..... going to  
4                   have those because of the impact that it might have and one other point is  
5                   that the other impact that noise has is that we are the closest not only to  
6                   the airport itself, but we are directly underneath Route....or your runway  
7                   4/22 and so we are hoping that you are not going in the future run a short  
8                   cut from the cargo straight to 4/22 which would be convenient for some of  
9                   those airplanes.

10                   In any case, we are mostly worried about the noise impacts  
11                   and hoping that you will do whatever you can to minimize that impact.

12                   Thank you.

13                   MR. ROBERT RUDOLPH:

14                   Thank you, Mr. Michaelson. Our next speaker and forgive  
15                   me if I don't pronounce this correct, John Overstreet.

16                   MR. JOHN OVERSTREET:

17                   Good evening, I'm John Overstreet, I live at 7954 Quarterfield  
18                   Road, Severn. I was interested in primarily a couple of things for BWI Bike  
19                   trail.

20                   I would like to have it completed and to reduce traffic  
21                   problems which we have a thing going on right now. Also where I live I  
22                   hear the planes go over my place at 5:30 in the morning or earlier and at  
23                   night, so this is another noise problem I am concerned with what is going

1 on.

2 By having the bike trail, we are going to reduce traffic  
3 problems in the area and maybe....the light rail or the Marc...come over to  
4 your aviation cargo area for all loading cargo, so this is another thing you  
5 may be thinking about. Thank you.

6 MR. ROBERT RUDOLPH:

7 Thank you. There are no other individuals who have  
8 registered to speak up until this time. Are there any other individuals who  
9 wish to speak who have not pre-registered? Yes, sir. Yes, please come  
10 forward. If you would, please be sure to sign in at the desk before you  
11 leave so we've got an accurate spelling on your name.

12 MR. NORMAN CLARK:

13 Okay.

14 MR. ROBERT RUDOLPH:

15 Please state your name and the organization that you  
16 represent.

17 MR. NORMAN CLARK:

18 My name is Norman Clark, I represent the Friendship  
19 Cemetery which is located within the bounds of the BWI Airport.

20 The only reason I am speaking is to go on record. I want to  
21 make sure that with all this new building going on that we will have  
22 access to our cemetery.

23 I understand from some of your officials I have been assured

1 that we will, but our access road that is presently in use will be closed off  
2 and when that road is closed off, then we just want to make sure that we  
3 have the access to our cemetery as we have all these years since BWI,  
4 before BWI was there, Friendship Airport and I am doing it more for  
5 record than anything else.

6 I have been assured that we will, but can you give me any  
7 answer on that right now or am I just.....

8 MR. ROBERT RUDOLPH:

9 This particular section of the public hearing is not for us to  
10 respond.

11 MR. NORMAN CLARK:

12 Thank you very much.

13 MR. ROBERT RUDOLPH:

14 If you will talk to Mr. Bezilla out front, I'm sure he will give you  
15 that assurance. Yes, sir? As with the other gentleman, if you would kindly  
16 make sure that you sign in before you leave so that we have the accurate  
17 spelling on your name and please state your name and the organization  
18 that you represent.

19 MR. JIM VECHECK:

20 Jim Vecheck, Timber Ridge, I live at 7400 Hawkins Drive in  
21 Timber Ridge.

22 As Ernie Michaelson said, we are the closest community and  
23 I have the distinction of being the closest house to the airport, I am right

1 across the road.

2 My main concern was again, noise, but also the trees. You  
3 are going to cut down a lot of trees and we would like to have some, I  
4 don't know if you can give a guarantee, but some statement to the fact  
5 later on that you intend to replace a lot the trees in our direction to help  
6 mitigate the noise as a result of taking down the existing trees.

7 I was also concerned about run ups after 10 p.m. I know  
8 these airplanes are the kinds to leave after midnight because I hear them  
9 leave every night and they have been pretty good, they go out.....they don't  
10 go out on full power I notice, they do try to keep the noise down.

11 But we would like to have some sort of a guarantee that there  
12 won't be continuous noise run ups and engine tune ups after 10 p.m., I  
13 don't think it is necessary.

14 The diagram also shows the airplanes with the exhaust  
15 pipes of the tail end facing runway 28 right now. We are hoping this is the  
16 way you intend to position the airplanes so that we do have some sort of a  
17 barrier or a barricade to soften the noise between the airplanes and our  
18 community. We are in the southwest corner there.

19 That's about all I have to say. Thank you very much.

20 MR. ROBERT RUDOLPH:

21 Thank you.

22 MR. JIM VECHECK:

23 Oh yes, I did want to say that this one alternative you had

1 down in the southwest corner of the airport, I hope you can forget that  
2 thing. It wouldn't help you either.

3 MR. ROBERT RUDOLPH:

4 Thank you. Are there any other individuals that would like to  
5 speak at this time?

6 This hearing was advertised as concluding at 9:00 this  
7 evening and it will do so. However, let the record show that since no  
8 additional speakers wish to comment at this time, this hearing is  
9 temporarily adjourned. It will be reconvened if additional speakers  
10 register to testify.

11 Let the record show it is now 9:00 p.m. December 17, 1996.  
12 All persons wishing to comment orally have done so and I hereby adjourn  
13 this public hearing.

14 (ADJOURNED).  
15  
16  
17  
18  
19  
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21  
22  
23



SHANE PENDERGRASS  
LEGISLATIVE DISTRICT 13A  
HOWARD COUNTY

COMMITTEE  
ECONOMIC MATTERS

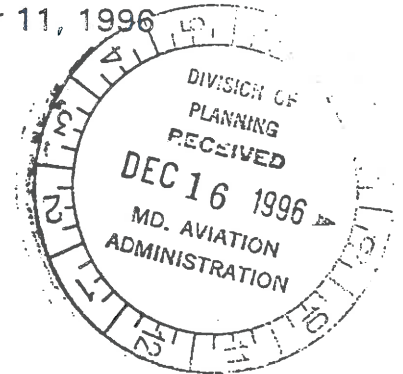


## HOUSE OF DELEGATES

ANNAPOLIS OFFICE  
209 LOWE HOUSE OFFICE BUILDING  
ANNAPOLIS, MARYLAND 21401-1991  
PHONE (410) 841-3205  
(301) 858-3205

December 11, 1996

Lynn S. Bezilla, Director  
Division of Planning  
Maryland Aviation Administration  
P.O. Box 8766  
BWI Airport, MD 21240



Dear Director Bezilla:

Thank you for the copy of your letter regarding the proposed Midfield Air Cargo Complex at BWI.

As you may know, I continue to be concerned about the noise from BWI. I am particularly concerned about the noise my constituents and I hear after 11 PM which I assume to be from Stage 1 aircrafts carrying cargo. How will the proposed air cargo complex affect the traffic levels? If it affects traffic levels, can I assume a direct relationship between increased activity and increased noise? Although cargo flights do not currently require Stage 3 aircraft, are there any policies in place for the future that will require Stage 2 or 3 aircraft to be used for cargo flights?

If I have not asked all the questions necessary to fully understand the situation, please include any additional information I may find useful. Thank you in advance for your attention to this matter.

Sincerely,

Shane Pendergrass  
Delegate



## Maryland Aviation Administration

*"Striving to do our best in everything we do - dedicated to providing outstanding airport facilities and services"*

Theodore E. Mathison    Executive Director

January 10, 1997

The Honorable Shane Pendergrass  
Maryland House of Delegates  
209 Lowe House Office Building  
6 Governor Bladen Boulevard  
Annapolis MD 21401-1991

Dear Delegate Pendergrass:

Thank you for your comments concerning the potential noise impacts associated with proposed Midfield Air Cargo Complex at Baltimore/Washington International Airport (BWI).

The Maryland Aviation Administration (MAA) expects only a modest increase in air traffic levels as a result of the proposed cargo facility. The amount of air cargo handled at BWI has grown from 71,876 tons in 1972 to 162,834 tons in 1995, an average annual increase of 3.6 percent. The MAA recently prepared tonnage and operations forecasts for air cargo at BWI through the year 2015. These projections indicate that cargo will continue to increase at an average annual rate of 3.5 percent over the next twenty years to approximately 327,000 tons in 2015.

In addition to air cargo transported in the bellies of approximately 600 daily passenger airline operations (takeoffs and landings), BWI currently accommodates an average of 25 all-cargo aircraft operations per day. According to MAA "expected growth" forecasts, all-cargo operations are estimated to increase to 30 operations per day by 1999, and to 35 per day by the year 2015. MAA has also prepared a "high growth" scenario, which indicates that cargo operations could potentially increase to 46 per day by the year 2015, although this appears unlikely based on existing information. Approximately 60 percent of the all-cargo flights are operated by jet transport type aircraft; the remainder are flown by smaller propeller-driven aircraft which generally produce less noise than jets. This proportion is expected to remain constant through the twenty-year planning period.

As part of the Environmental Assessment for the proposed cargo complex project, MAA prepared computer-modelled noise contours for the no-build alternative and the build alternatives, under both the expected growth and high growth scenarios, for the study years 1999 and 2015. The noise analysis resulted in only a negligible increase (0.2 to 0.5 Ldn) in noise exposure between the "no-build" and "build" conditions. Ldn is the metric used for expressing the day-night average noise level. This metric accounts for all sound energy

P.O. Box 8766, BWI Airport, Maryland 21240-0766 (410) 859-7100

FAX: (410) 850-4729 — TDD for the hearing impaired: (410) 859-7227

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The Honorable Shane Pendergrass  
January 10, 1997  
Page Two

occurring over a 24-hour period, with noise events occurring between 10 pm and 7 am treated as if they were 10 decibels (dB) louder than they actually are. Ldn must generally increase or decrease at least 3 to 5 dB for the majority of persons to perceive a change in the overall aircraft noise environment.

The relatively small increase in noise exposure is due to the success of The Airport Noise and Capacity Act of 1990 (ANCA) which requires a phased elimination of the louder Stage 2 turbojet aircraft and the transition to quieter Stage 3 aircraft by December 31, 1999. The operation of Stage 1 aircraft, to or from U. S. airports ceased on January 1, 1985. The regulations implementing the Stage 3 transition rule were effective on September 25, 1991, and apply to all airlines (including cargo) operating in the U.S. The regulations provide two options for airlines to meet the transition schedule. Option one permits airlines to incrementally phase-out Stage 2 aircraft. Option two allows airlines to phase-in an increasing fleet percentage of Stage 3 aircraft by December 31, 1999. Each domestic and foreign operator of large civil transport turbojet aircraft must submit an annual report reflecting compliance progress as of the end of each calendar year. The FAA has reported that all airlines operating in the U.S. will meet the 1996 interim compliance goals shown below. Collectively, during October 1996, the latest month for which data are available, the aircraft used at BWI by the airlines were 66% Stage 3.

The following is a summary of the overall interim compliance deadline options:

<u>Dec. 31</u>	<u>Stage 2 Phase-Out</u>	<u>Stage 3 Phase-In</u>
1994	25%	55%
1996	50%	65%
1998	75%	75%
1999	100%	100%

I have enclosed a copy of the summary report for the Environmental Assessment for the proposed cargo facility. This report contains additional information on the proposed facility and its environmental impacts. If you have any further questions, or would like more details on the project, please contact me at your convenience.

Sincerely,

Theodore E. Mathison  
Executive Director

TEM:lab  
Enclosures



# Maryland Aviation Administration

## QUESTIONS AND/OR COMMENTS \*

Mid-field Air Cargo Complex  
6:30 p.m. to 9:00 p.m.  
Tuesday, December 17, 1996  
Glen Burnie Senior High School

NAME JAMES C. VEHECK - REPRESENTING TIMBER RIDGE  
ADDRESS 7400 HAWKINS DRIVE  
CITY/TOWN HANOVER, MARYLAND  
STATE (410) 761-2288 ZIP 21076

I/we wish to comment or inquire about the following aspects of this project

TIMBER RIDGE BEING SOUTH ADJACENT TO BWI LIES ON A SLOPING LANDSCAPE  
THE HILLSIDE ACTS AS TO COLLECT NOISE FROM BWI & IT REVERBERATES INTENSELY.  
AS A COMMUNITY WE WOULD INSIST THERE BE NO "ENGINE RUNUPS" AFTER 10 PM OR  
"POWER BACKS". REMOVAL OF TREES BE KEPT TO A BARE MINIMUM WITH  
EQUIVALENT ~~REPLACEMENT~~ REPLACEMENT ADJACENT TO OUR COMMUNITY. WE WOULD INSIST  
THAT THE "DIRT SPENDING BURN PIT" NOT BE RELOCATED IN OUR DIR-  
ECTION BUT BE ELIMINATED. ALSO THE USE OF "SLUDGE" BE  
PROHIBITED DURING LANDSCAPING. WE SEE NO REASON BWI SHOULD  
NEED A "TRUCK WASH & GAS STATION" OPERATION SINCE THE VEHICLES  
WILL NOT BE SWUNG BY BWI. WE ARE STRONGLY OPPOSED TO  
"CLEAR CUTTING" OF TIMBER DURING CONSTRUCTION. ALTERNATIVELY  
APPEARS TO BE THE MOST PRACTICAL WAY TO GO & WE SUPPORT IT.  
ALTHOUGH YOU DON'T ADVERTISE IT, THE STACKING UP OF DIRT  
INTO 2 BIG PILES APPEARS TO BE FUTURE GRADING  
MATERIAL FOR YOUR PARALLEL 10-28 WHICH WE  
WOULD STRONGLY OPPOSE. I WAS AFFORDED THE  
OPPORTUNITY TO SPEAK AT THE PUBLIC HEARING & I  
DID. THIS IS IN ADDITION TO MY COMMENTS. I  
HOPE FUTURE RELATIONS WITH BWI CONTINUE TO BE  
ON A COOPERATIVE BASIS

THANK YOU

*James C. Vecheck*

December 19, 1996



Mr. Lynn S. Bezilla, Director  
Maryland Aviation Administration  
Division of Planning  
P.O. Box 8766  
BWI Airport, MD 21240-0766

Dear Mr. Bezilla,

I attended the public hearing at GBHS on the proposed Mid-field Air Cargo Complex on Tuesday, and I just wanted to state for the record my support of this project.

It was a pleasure to see very little concern about the project, and even that small amount had been completely alleviated by the work done by the MAA personnel. Timber Ridge residents were concerned about higher noise levels, but with no foundation from what I could see. And the folks wanting access to the cemetery near the new fire house appear to have been accommodated as well.

For those of us in the air cargo industry, this will be a welcome addition to services offered by BWI Airport, and will definitely help to increase usage and mean more business for us all.

Please convey my thanks to Ted Mathison, Jay Hierholzer, and all their staff for a job very well done!

Sincerely,

Henry L. Hurst  
Vice President

1-800-344-9854  
(410) 553-0667  
FAX (410) 553-0669  
P.O. BOX 28914  
BWI AIRPORT, MD 21240



CUSTOMER SATISFACTION IS OUR TOP PRIORITY



**The BWI Business Partnership, Inc.**  
*An Economic & Transportation Management Association*

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*Legal Counsel*  
Weinberg & Green, LLC

*Executive Director*  
Neil M. Shpritz

January 7, 1997

Mr. Lynn S. Bezilla, Director  
Division of Planning  
Maryland Aviation Administration  
P.O. Box 8766  
BWI Airport, MD 21240-0766

**RE: PROPOSED CARGO COMPLEX AT  
BALTIMORE/WASHINGTON  
INTERNATIONAL AIRPORT (BWI)**

Dear Mr. Bezilla:

Thank you for the opportunity to comment on the abovecaptioned proposal. I am delighted to deliver these remarks on behalf of The BWI Business Partnership, Inc.

After reviewing your draft Environmental Assessment concerning the proposed development of a Midfield Cargo Complex and associated improvements at BWI Airport, I am offering these comments to lend our **full support** for this project. In fact, as this Association finalizes its Vision Statement for The BWI Business District, we have included our advocacy for the Midfield Complex in that document as well.

In addition to the myriad of solid reasons for this investment under any circumstances, special conditions call out for this project to move forward. Given the currently ongoing development of private sector distribution centers proximate to BWI Airport *per se* in both Anne Arundel and Howard County sections of The BWI Business District, we find complementary synergies among these centers and the proposed Midfield Cargo Complex--synergies which will produce economic benefits immediately upon any stages of "buildout".

Mr. Lynn Bezilla  
Page 2

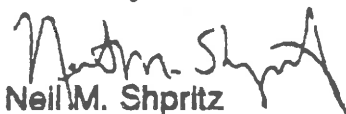
As an employer-based organization with a vital interest in sound economic development throughout this immediate area, we see no question about the need for this proposed facility. It is not trite to say that the BWI Airport is the economic engine of our service geography (and in reality one of the largest generators of economic growth in Maryland).

We recognize the importance of air cargo to the aviation industry; under no circumstance can or should that importance be minimized. Indeed, as BWI Airport has developed over recent decades, air cargo has become a consistently more important component of that growth. From an economic development standpoint, the growth of air cargo services is of extreme importance to airlines, vendors and users alike. An obvious corollary is its importance to the State and its political subdivisions -- in terms of job creation, capital investment and revenue generation.

Finally, we agree with the position of the Maryland Aviation Administration to assess market conditions as design progresses. To base its build/defer option on professional market analysis is sound public policy. Further, we agree that Alternative 4 is the appropriate choice.

Thank you again for this opportunity, and please feel free to give me a call at any time with questions or thoughts.

Sincerely,

  
Neil M. Shpritz  
Executive Director



# Maryland Aviation Administration

*"Striving to do our best in everything we do - dedicated to providing outstanding airport facilities and services"*

Theodore E. Mathison Executive Director

January 21, 1997

Mr. Norman Clark  
1032 Reece Road  
Severn MD 21144

Dear Mr. Clark:

I am responding to your comment concerning access to Friendship Cemetery which you raised at the December 17, 1996 Public Hearing on the Proposed Air Cargo Facility Development at Baltimore/Washington International Airport. As my staff has indicated previously, the Maryland Aviation Administration (MAA) intends to maintain access to the Cemetery, both during construction and after the completion of the proposed Midfield Air Cargo Complex.

For the immediate future, access to the Cemetery will follow the existing procedure, whereby a visitor must notify the Office of Airport Operations (OAO) prior to visiting the Cemetery. An OAO staff member will meet the visitor at Gate 11, the existing entrance, and escort the visitor to the Cemetery. Within the next three months, depending on the weather, the MAA will relocate existing Gate 11 a short distance to the east, opposite Connolley Drive at the traffic signal on Route 176 (Dorsey Road). The route to the Cemetery and the procedure for contacting the OAO will remain the same. Visitors should be aware that vehicles from the new Aircraft Rescue and Firefighting Facility will also be using the same access road.

When the proposed Midfield Cargo Complex is constructed, the MAA plans to provide access to the Cemetery via the proposed new access road at a signalized intersection on Route 170 (Aviation Boulevard) in the vicinity of existing Gate 13. Visitors would proceed unescorted on the cargo access road to the vicinity of Friendship Cemetery. We are currently looking at alternatives for how the access at the Cemetery is assigned.

Within six to eight weeks, design will be further refined and illustrative drawings will be prepared. The MAA staff will contact you at that time to schedule a briefing to discuss the alternatives and review the findings with representatives of your association. If you have any questions in the interim, please contact Mr. Ali Logmanni at 859-7768.

P.O. Box 8766, BWI Airport, Maryland 21240-0766 (410) 859-7100

FAX: (410) 850-4729 — TDD for the hearing impaired: (410) 859-7227

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Mr. Norman Clark  
January 21, 1997  
Page Two

If the Federal Aviation Administration (FAA) approves our Environmental Assessment for this project, and if sufficient interest is expressed by a potential tenant for the Midfield Cargo Complex, construction of the first two cargo buildings, access road, and airfield infrastructure could begin as early as the Winter 1997 and be complete by Winter 1998.

You asked that your comment be included in the official record for the Public Hearing, and it has been done. A copy of this letter will also be included in the Environmental Assessment report for the project, along with the Hearing transcript, for FAA review.

Please be assured the MAA fully intends to preserve the integrity of the Friendship Cemetery site, and ensure that visitor access is as convenient as possible, consistent with federal airport security requirements.

Sincerely,

Theodore E. Mathison  
Executive Director

TEM:jar

cc: Airport Operations Center  
Ms. Pat Etherington  
Mr. Ali Logmanni

## MINUTES

### BALTIMORE/WASHINGTON INTERNATIONAL AIRPORT NEIGHBORS COMMITTEE MEETING MARCH 21, 1996

#### INTRODUCTION

The Baltimore/Washington International Airport (BWI) Neighbors Committee convened at 7:00 p.m. in the Maryland Aviation Administration (MAA) Assembly Room, third floor of the terminal building. See Attachment 1 for the agenda and attendance list.

#### BWI NOISE PROGRAM

Mr. Rudy Rudolph, MAA, Director of Aviation Noise and Abatement, provided the following update about the BWI Noise Program.

- **Stage 3 Operations:** January through December 1995 figures were shown to the Committee. Early 1995, Stage 3 operations remained stable at approximately 50 percent. The second half of the year showed improvement, increasing to 57 percent by December, and 59 percent in January 1996.
- **Runway Mode of Operations:** Fluctuates throughout the year, and is primarily driven by the winds. The goal in BWI's Noise Abatement Plan is 80 percent west operations. West operations affects the least amount of noise sensitive areas. The summer months showed a higher percentage of east operations. This was due to the summer easterly winds.
- **Fleet Noise Trends:** These figures were shown to the Committee. MAA has been tracking fleet noise trends since 1987, with 1987 as the baseline year. The computer program utilized to track these noise trends allows for the breakdown of figures to tenths and hundredths of a decibel, but the public will not detect such small changes. BWI is still below the 1987 baseline level.
- **Monthly Noise Concerns:** This chart, showing the number of noise concerns and their fluctuation throughout the year, was shown to the Committee. The majority of noise concerns are received during the spring and fall months.
- **Noise Concerns per Community:** This chart was shown to the Committee. MAA received a large number of noise concerns from Linthicum and Severn communities. One person accounted for 70 of the 97 Linthicum concerns, and one person accounted for 94 of the 125 Severn concerns.
- **US Airline Progress:** A chart showing the major air carriers progress towards a 100 percent Stage 3 fleet, was shown to the Committee. The Federal Aviation Administration (FAA) has recently reported that most of the major air carriers in the United States have already achieved



their 1996 Stage 3 goal. BWI Stage 3 percentages by individual airline's were presented. United's Stage 3 percentage at BWI was back up to 67 percent in January. Their low numbers in late 1995 were a result of a combination of factors. The Boeing strike which delayed delivery of B-777s and the retirement of DC-10s caused stop-gap equipment substitutions system-wide. The airline on whole is short of equipment.

United has plans to hush-kit the B-727s that they own; no decision yet on the leased B-727s, or the B727-200s.

- **Phase Out Stage 2 /Phase In Stage 3 Schedule:** The breakdown of the Phase Out/Phase-In Schedule was shown to the Committee. Air carriers have two options, either the phase out of Stage 2 or phase in of Stage 3 aircraft, to meet the compliance dates and the December 31, 1999 deadline to achieve 100 percent Stage 3 fleet. FAA has received requests for waivers for the interim goals. They have not granted nor anticipate granting any waivers as they approach the year 2000.

Mr. Shylanski, Greater Severn Improvement Association, questioned why the community noise levels were so high at the Site 6 monitor, located at Delmont Church. MAA will evaluate Site 6 to determine the cause.

A question was asked about the total percentage of operations of USAir. Response: In December 1994, USAir accounted for 49 percent of average daily turbo jet operations.

A request was made to publish the number of operations in the Quarterly Report. The Noise Office will incorporate the appropriate information in the First Quarter 1996 report.

#### **NOISE ASSISTANCE PROGRAM (RIDGEWOOD MOBILE HOME PARK)**

Mr. Tony Neubert, MAA, Director of Real Estate provided the following update about the relocation of the Ridgewood Mobile Home Park

There are approximately 143 families presently living in the Park. Before the relocation process can start, MAA must buy a property right (easement) from the owner of the Park. In October 1995, an offer was made to the owner for an easement, which would take the owners right to use the land for residential purposes in the future. The owner will still own the property after the relocation. The property is now zoned "industrial", so the owner can develop the property to its fullest use, after the relocation. To-date MAA has not been able to reach an agreement with the owner. In trying not to delay the relocation process, MAA is initiating condemnation procedures to acquire the acquisition. The case would then go to the Circuit Court of Anne Arundel County and a jury will determine the just compensation to pay the owner. MAA is hopeful of reaching an agreement before the case goes to court.

- Ms. Marie Delano, Ridgewood Mobile Home Park, asked about the newsletters to mobile home park residents, providing updates on the relocation. Mr. Neubert stated several letters have been sent to residents, the latest in February. The residents will continue to be updated

in this manner, until an agreement with the owner is reached. Once the relocation process begins a formal newsletter will be sent.

- A question was asked about the \$8 million cost estimate for the relocation project. Mr. Neubert stated this figure was used for preliminary planning purposes. If the case goes to court, MAA does not know what the settlement will be, and the studies have not been completed on the 143 homes yet. Mr. West, MAA, Associate Administrator, Office of Planning and Engineering, stated this estimate was based on a number of expenses including: the property right, to be bought from the owner; administrative/ Consultant costs; and the direct costs to the residents for relocation.

### **BWI MID-FIELD CARGO COMPLEX**

Mr. Lynn Bezilla, MAA, Director of Planning, provided the following update. The past few months, MAA has been evaluating BWI's cargo facility needs. Currently, there is a total of about 300,000 square feet (sf) of cargo space, with only 5,000 sf available for new tenants. Existing cargo buildings A-E were shown to the Committee on an Airport diagram. The BWI Airport Master Plan recommended development of cargo building E, which was constructed in 1990, and also recommended relocating MAA Maintenance for development of future cargo buildings F, G, and H along Elm Road. Access to cargo building F was limited at the proposed Master Plan site, and instead will be constructed across the parking lot from cargo buildings A-E. This project has been previously discussed with the Committee, and construction is expected to begin shortly. Taking a closer look at the area along Elm Road, MAA has found there will not be adequate room for additional cargo development due to the International Terminal, and extension of the Baltimore Central Light Rail Line. The Transit Administration has stated they could provide more efficient operations with a dual track transit system, to allow trains to come and go on different tracks. This has taken away from some of the area available. The Master Plan stated once the terminal area was exhausted, the next place to locate future cargo facilities was BWI's southwest quadrant. This is the area south of Runway 10 and west of Runway 33L.

Cargo needs have changed over the past ten years. The air cargo carriers have become integrated freight carriers, using trucks as well as airplanes. Airport facilities now require additional truck parking areas and support facilities, such as for fueling and washing. Cargo carriers have also switched to larger aircraft, requiring more ramp maneuvering areas and more ground support equipment. Thus MAA is planning for two cargo centers, the existing facility north of the terminal which will primarily be used for belly cargo, and the midfield location which will be used for all cargo carriers.

The 20 year forecast calls for four new 60,000 square foot cargo facilities to be located in the Midfield Complex by the year 2015. This involves clearing the area between Runway 10 and the new access road to the Airfield Rescue Firefighting (ARFF) building which is now in construction, and between Route 170 and the new ARFF building. MAA is proposing to undertake site preparation for the new complex, with development of aircraft ramp, taxiways, parking and for two 60,000 sf buildings by 1998-99. Eventually, four buildings could be accommodated, along with a truck wash, fueling facility, and other support facilities as required to

support cargo needs. The planning is underway with one issue still needing to be resolved. A hill needs to be partially removed, to bring the site down to grade with Runway 10. MAA is looking for alternative sites to stockpile the material. The stockpile site will require additional tree clearing. Site plans for the midfield cargo buildings were shown to the Committee. MAA has started the environmental analysis for the project, in the form of an Environmental Assessment, which will follow the 22 items required to be addressed according to the Environmental Protection Agency guidelines. The assessment will focus primarily on tree impacts, and wetland impacts, as well as possible noise impacts. The Environmental Assessment will be completed by August and sent to the Federal Aviation Administration for review. A public hearing is anticipated for June/July this year. The Neighbors Committee will be briefed on the Environmental Assessment about a month before the Public Hearing. Design is expected to start this fall. Completion of the first building is expected by the fall of 1998.

This cargo facility development activities are not a commitment to build. As planning and design progress, an assessment of market conditions will be undertaken. If the market is not there for both of the buildings, MAA may only construct one. Or if the market is not there for one building, construction would be deferred until market conditions warrant.

#### **FRIENDSHIP CEMETERY**

Ms. Barbara Grey, MAA, Division of Planning, provided the following updates on the Friendship Cemetery and the Runways 15R/15L Obstruction Removal.

During construction of the new Firefighting Facility on the airfield, human remains were discovered. Graves were discovered when a foundation trench was being excavated. The construction activity was immediately stopped. Permits were then obtained from the State's Attorney and the Health Department to remove and relocate the remains. A funeral director was hired to perform the necessary work, and the remains were placed into temporary storage. MAA met with the Cemetery Committee and did research with the local churches and the Maryland Hall of Records to try to identify next of kin. A total of ten gravesites were found, two identifiable. One of the remains was found to be "Baby Lee" (no other information known), and one to be "Mary E. Berger". Notices have been placed in three local newspapers for three consecutive weeks, in attempt to locate any next of kin. In lieu of any alternative arrangements by located next of kin, the remains will be reburied at the Friendship Cemetery the first week of April.

When the land for the Airport was bought in 1947, the city of Baltimore relocated most of the graveyards on the Airport. The boundaries of the Friendship Cemetery were shorted and a new boundary fence installed. MAA believed all graves were moved to within the revised confines of the Cemetery. An archaeological survey was conducted prior to construction. This involves digging test pits approximately every ten feet, and nothing was found at that time.

#### **RUNWAYS 15R/15L OBSTRUCTION REMOVAL**

This project involves selective tree cutting for obstruction removal associated with Runways 15R and 15L. This project is continuing and MAA is still in the process of obtaining one permit. The

obstruction areas were shown on a drawing. MAA has obtained easements from approximately 16 property owners with about 12 more to do. The property owners have the option to have the trees topped or removed. This project is expected to be advertised in April, and begin in May.

### BWI CONSTRUCTION STATUS

Mr. West provided an update of construction activity at BWI.

- **Airfield Firefighting Facility:** This project is currently under construction. This will be a new station that will consolidate all personnel and the airfield response vehicles and ambulances that are now in three different locations. The new facility will have several vehicle bays for equipment and will be pointed towards the airfield. These vehicles could respond within a couple minutes to any incident on the airfield. The facility will have dormitory and kitchen facilities for the firefighters. This project is expected to be completed by the end of the calendar year.
- **Garage Expansion:** This project will add two more floors to the existing structure and will build an extension behind the existing garage. This project will double the amount of parking spaces at BWI. Special features include: an exclusive ramp for rental cars on the third floor; a new entrance ramp on the fifth level; the height will be increased for the two additional levels to accommodate handicap vans; a fourth pedestrian bridge to the terminal will be constructed; and, revenue collection booths will be added to the fifth level. Construction is expected to begin soon and will take about 20 months to complete. The garage will remain open during construction.
- **International Terminal:** A rendering of the International Terminal was shown to the Committee. The building contract for this project was awarded this past fall. The foundation work is just about completed and the structural steel is starting to go up. The project is expected to be complete by June 1997.
- **Roadway Construction/Parking:** Most of this road work, on the upper level of the terminal building and on Elkridge Landing Road will be completed by the end of the calendar year. Communities and businesses will be notified of changes in traffic patterns. Roadway construction activities for the terminal, Elm Road, and Elkridge Landing Road, were shown to the Committee on a drawing. New traffic patterns should begin in May. By this time the road connecting Elkridge Landing Road to the Air Cargo intersection will be complete. The new Elkridge parking lots are almost complete and have been used in emergency situations such as the Pope's visit, Thanksgiving and Christmas holidays.
- Mr. Dennis Stevens, ACT, requested that the number of operations be included in the Quarterly Report. Mr. Rudolph stated he would look into it.

With no further business to discuss, the BWI Neighbors Committee meeting adjourned at 8:15 p.m.

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Kate Pemberton, Secretary  
BWI Neighbors Committee

NOTE: Meeting handouts are available upon request calling the BWI Noise and Abatement Office at 410-859-7021.

**APPENDIX C**  
**FUNDAMENTALS OF NOISE**

## *APPENDIX C - FUNDAMENTALS OF NOISE*

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### *INTRODUCTION*

Noise intrudes into daily human activity, and affects people. Noise can disrupt speech communication, listening to radio and television, talking on the telephone, and sleep. Response to noise is subjective in that reactions to noise vary from person to person. Noise, however, can be described by a series of characteristic measures or metrics and these metrics can be related to average human responses. Thus, by quantifying the noise of a new noise source or of a proposed change to an existing noise source, it is possible to estimate average human reactions.

Noise metrics are based on three characteristics of sound waves:

- **Level** - the sound's amplitude, which is related to loudness;
- **Frequency Distribution** - the pitches that make up a sound; and
- **Time History** - the variations of the sound over time.

#### Level

A sound wave is the rapid movement of air molecules back-and-forth about an equilibrium position, and may be thought of as a wave that propagates away from a noise source at the speed of sound. The greater the back-and-forth motion, the greater the amplitude, and the louder the sound. This motion causes increases and decreases in air pressure, and it is these changes in pressure that may be thought of as moving the ear drum and causing sound to be heard.

The ear, however, responds both to very slight and relatively great changes in pressure; in fact, the difference between the quietest sounds that can commonly be heard, and the loudest sounds that can be tolerated is a factor of more than one million in terms of

pressure. These great differences between quiet and loud sounds are described in terms of the decibel, abbreviated dB. The decibel scale is based on logarithms, and compresses a sound pressure range of one million to a decibel range of 0 dB to 120 dB. When sounds are quantified in decibels, they are referred to as levels. Thus, a sound may have a level of 80 dB, or a noise source may be said to produce a sound level of 80 dB.

### Frequency Distribution

Noises having equal levels can have different pitches. Pitch or frequency is a measure of how rapidly the air molecules move back-and-forth, and is denoted as cycles per second, or as Hertz, abbreviated Hz.

The human ear's ability to hear sound depends upon the frequencies present; we hear best the frequencies present in speech, generally 1000 Hz to 8000 Hz, and less well the frequencies outside this range. In order to measure sounds in a way that corresponds to human perception, an electronic "weighting" network was designed into sound-measuring instruments. Levels measured with such an instrument are called A-weighted levels, abbreviated dBA. **Exhibit C-1** presents the A-weighted levels of some common noises.

### Time History

Sound levels vary as time passes. The variations can occur over very short periods or variations can be longer term. During one hour, several arriving aircraft may fly overhead, and during another hour, no aircraft will pass by. Several methods have been used to quantify time varying noises, but the most common is the "equivalent sound level" (Leq). This sound level accounts for all sounds that occur in a given time period. Briefly, it is the level of a constant A-weighted sound that has exactly the same amount of total sound energy as did the actual time fluctuating sound. Leq is "equivalent" to an actual time varying sound level in the sense that it has the same total energy for the same length of time, only the fluctuations in level have been summed up to yield a constant, steady-state level. **Exhibit C-2** illustrates the Leq concept.



## Common Outdoor Sound Levels

## Sound Level dBA

## Common Indoor Sound Levels

Concorde, Landing 1000 m. From Runway End

110

Rock Band

727-100 Takeoff 6500 m. From Start of Takeoff Roll

100

Inside Subway Train (New York)

747-200 6500 m. From Start of Takeoff  
Diesel Truck at 50 ft.

90

Food Blender at 3 ft.

Noisy Urban Daytime

80

Garbage Disposal at 3 ft.  
Shouting at 3 ft.

757-200 6500 m. From Start of Takeoff

70

Vacuum Cleaner at 10 ft.

Commercial Area  
Cessna 172 Landing 1000 m. From Runway End

60

Normal Speech at 3 ft.

Quiet Urban Daytime

50

Large Business Office

Dishwasher Next Room

Quiet Urban Nighttime

40

Small Theater, Large Conference  
(Background)

Quiet Suburban Nighttime

30

Library

Quiet Rural Nighttime

20

Bedroom at night

10

Concert Hall (Background)

0

Broadcast & Recording Studio

Threshold of Hearing



MARYLAND DEPARTMENT OF TRANSPORTATION  
MARYLAND AVIATION ADMINISTRATION  
OFFICE OF PLANNING AND ENGINEERING

### Air Cargo Expansion Environmental Assessment COMMON A-WEIGHTED ENVIRONMENTAL SOUND LEVELS



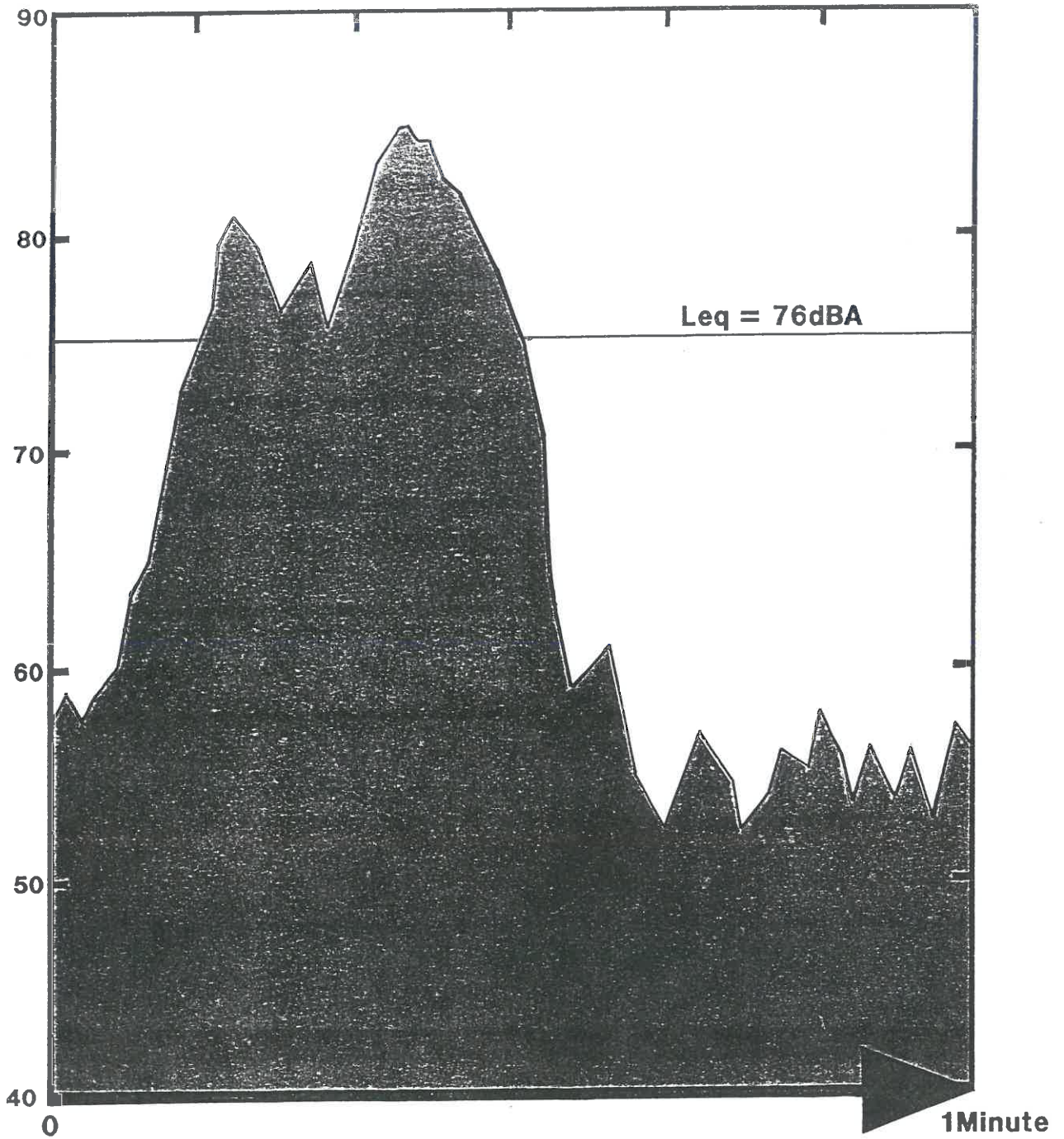
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MILLER  
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SCALE NONE  
DATE AUG. 1996

EXHIBIT NO.

C1

A-Level



 <b>BWI</b> BALTIMORE/WASHINGTON INTERNATIONAL AIRPORT	MARYLAND DEPARTMENT OF TRANSPORTATION MARYLAND AVIATION ADMINISTRATION OFFICE OF PLANNING AND ENGINEERING	
<b>Air Cargo Expansion Environmental Assessment</b> <b>GRAPHIC DEPICTION OF Leq METRIC</b>		
 <b>HARRIS MILLER MILLER &amp; HANSON INC.</b>	SCALE _____ DATE AUG. 1996	EXHIBIT NO. <b>C2</b>

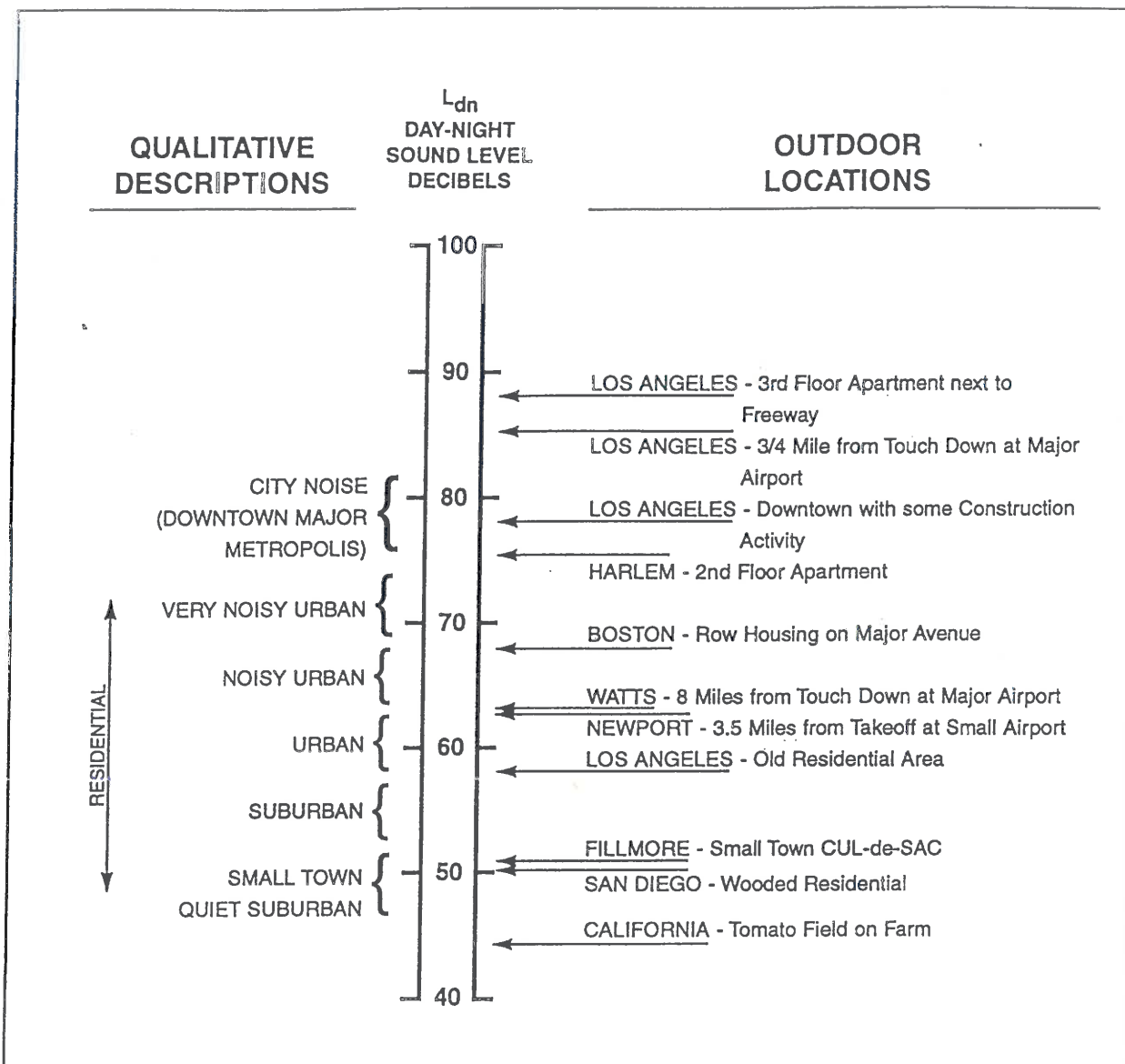
Thus, the A-weighted sound level can be used to measure instantaneous sound levels as they occur, or the A-weighted level can be cumulative over a longer time period to yield an equivalent level. The instantaneous A-weighted levels are useful for quantifying noise produced by "single events," such as the second-to-second levels produced by a passing truck or aircraft, or the maximum level produced during an aircraft flyover. The equivalent level is better for quantifying the long-term noise exposure.

## ***NOISE METRIC***



The primary noise metric used in this noise study of the proposed cargo complex is one that sums all the sound energy produced by all aircraft noise events over a period of time. The primary effect of the proposed cargo complex is expected to be an increase in the number of cargo aircraft operations. This increase in operations will be made up of aircraft types identical or similar to those already flying to and from BWI, and thus will not constitute a new source of noise, but rather a fractional increase in the noise events that already are common at BWI. (See Section IV for a complete discussion of the projected changes in numbers of operations.) For this type of increase in operations, the cumulative metric of total sound energy best quantifies the anticipated changes in the noise environment; the sound levels of individual takeoffs and landings will not change, only the numbers and hence total sound produced by these events will change.

Long-term, cumulative noise metrics are usually derived from single event metrics or computed from continuous noise measurement data. For assessment of aircraft noise effects, a widely used long-term noise metric, the day-night average sound level, DNL is used. (Though other long term metrics are also used. For example, analysis of highway traffic noise is conducted using Leq as required by the Federal Highway Administration.)

The day-night average sound level, DNL, is an A-weighted equivalent level for a 24-hour period that accounts for all sound energy occurring in that period. DNL treats all noise events occurring between 10 p.m. and 7 a.m., nighttime, as if they were 10 dB louder than they actually were. This 10 dB penalty is intended to account for increased human sensitivity to nighttime noise. Exhibit C-3 presents examples of day-night average sound levels.



Source: United States EPA, Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare With an Adequate Margin Of Safety, March 1974, p.14.

	MARYLAND DEPARTMENT OF TRANSPORTATION MARYLAND AVIATION ADMINISTRATION OFFICE OF PLANNING AND ENGINEERING	
	<b>Air Cargo Expansion Environmental Assessment</b> <b>EXAMPLPS OF DAY-NIGHT AVERAGE SOUND LEVELS, <math>L_{dn}</math></b>	
	HARRIS MILLER MILLER & HANSON INC.	SCALE NONE DATE AUG. 1996
	EXHIBIT NO. <b>C3</b>	

Changes in DNL should be judged differently from changes in the noise levels produced by single events. In general, changes in DNL must be 3 dB to 5 dB to alter community perception of the noise. However, changes of smaller magnitude can be noticeable. Small changes can be detected if they result from an easily identifiable noise source which has been added or altered. For example, if a new and different, easily identifiable aircraft began flying regularly to and from BWI Airport, it might have little effect on DNL values, but its operation could be noticeable. Alternatively, if such an easily identifiable aircraft ceased operations, the absence of its noise might be noticed, though its effect on DNL was small.

The day-night average sound level, DNL, is accepted by the U.S. Environmental Protection Agency (USEPA) as the most appropriate noise metric for determining the public health and welfare effects of aviation-related environmental noise. Agencies using DNL include the State of Maryland, Federal Aviation Administration (FAA), Department of Defense, and Department of Housing and Urban Development (HUD) and many State and local governments. This noise metric was selected for use in Maryland by the Maryland State Department of Health and Mental Hygiene Maryland Environmental Noise Act of 1974.

## ***NOISE CONTOURS***

Noise contours are lines showing areas having equal sound levels and are used to assess the effects of aircraft noise around BWI. This document presents day-night average sound level (DNL) contours for existing and future no-build and build alternatives. DNL contours show the cumulative noise produced by an average 24-hour day of aircraft operations. The size and shape of the contours depend primarily upon the numbers and types of aircraft that operate to and from the airport, and upon the directions or flight tracks flown by these aircraft.

Noise contours are used at BWI for both the assessment of proposed project alternatives and in the development of the official Airport Noise Zone. The latter combines current and projected aircraft operations into a single, worst case contour. The noise contours shown in this document are for an average day of an identified year, unless otherwise stated. Although similar in appearance, a direct comparison of these contours with the Noise Zone contours for BWI is inappropriate.

## ***HUMAN RESPONSE AND INTERPRETING CHANGES IN SOUND LEVELS***

Noise interferes with human activities such as sleep and conversation and may result in annoyance. If annoyance is sufficient, community reactions, such as complaints may result. In general, studies have not given definitive results for predicting when interference, annoyance or complaints will result, but some general guidelines are possible, and the following subsections present such guidelines.

### **Annoyance and Community Reaction**

Annoyance is one of the responses to noise. Considerable data have been collected relating people's annoyance to the cumulative noise exposure where they live. The original work done to develop this relationship between annoyance and noise exposure was done by Schultz.<sup>1</sup> **Exhibit C-4** presents his synthesis curve. More recent work has tended to confirm this curve.<sup>2</sup> The curve tells what percent of people are likely to be highly annoyed for different levels of noise exposure as measured in terms of DNL (Ldn). This curve also can be used to estimate how changes in DNL will alter the number of people who are highly annoyed.

Annoyance may also be assessed by the extent of community reaction to an intruding noise. Though studies of community reaction may not be directly applicable to assessing a proposed change at an airport, these studies suggest that to some extent the increase in noise exposure relative to existing levels is what may produce negative reactions such as complaints, involvement of local officials and political action<sup>3</sup>. On average, the new noise exposure must exceed the existing exposure by 3 to 5 dB for widespread complaints to occur.

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- <sup>1</sup> Schultz, T.J., "Synthesis of Social Survey on Noise Annoyance," J. Acoust. Soc. Am. Vol. 74, No. 6, pp. 377-405.
  - <sup>2</sup> Fidell, Sanford, D.S. Barber, and T.J. Schultz, "Updating a Dosage-Effect Relationship for the Prevalence of Annoyance Due to General Transportation Noise," J. Acoust. Soc. Am. Vol. 89, No. 1, January 1991, pp. 221-223.
  - <sup>3</sup> U.S. Environmental Protection Agency, "Community Noise," NTID300.3, December 31, 1971.

## Interpreting Changes in Long-Term Noise Levels

### **Changes in Long-Term Levels**

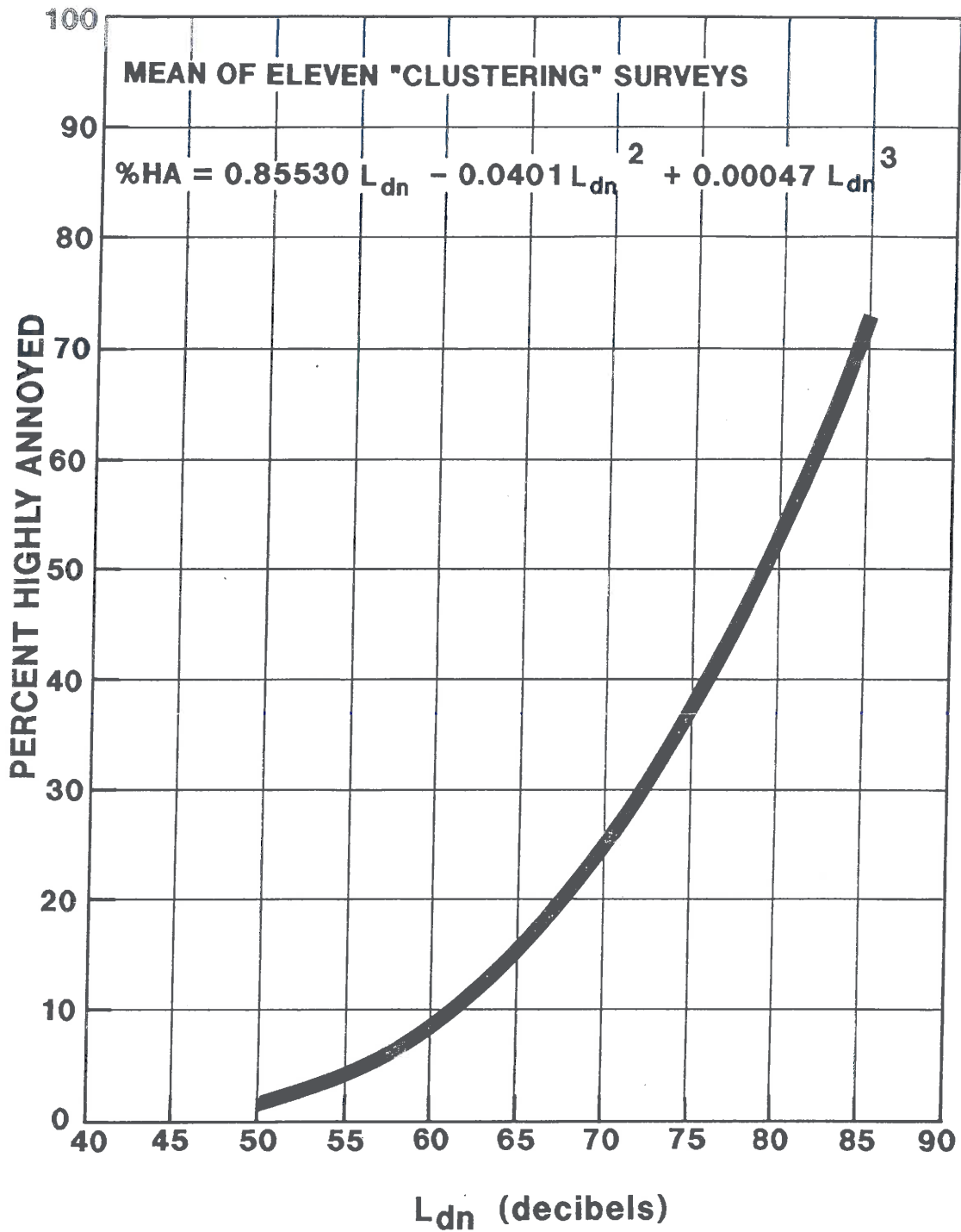
Determining the probable noticeability of a change in long-term or cumulative levels is complex. First, there are no published data, other than those cited above giving community reaction, that give the effects on communities of changes in cumulative levels. Second, it is likely that changes that occur slowly over many years are less likely to be noticed than changes that occur suddenly in a day's or few week's time. Third, reaction to noise depends not only upon the level of the noise, but on people's perceptions of the noise and the noise maker. If people understand and accept the need for the change that resulted in an increase in noise, there may be greater acceptance of (and less reaction to) the noise increase than if the change is regarded as unnecessary or improper. With these considerations in mind, the following interpretation guidelines are offered.



### **Cumulative Noise Level Changes (DNL)**

#### Change in Level:

#### Expected Reaction to Change:

0 dB to < 2 dB . . . . .	May be noticeable
2 dB to < 5 dB . . . . .	Generally noticeable
5 dB or more . . . . .	Change in community reaction likely



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	<b>Air Cargo Expansion Environmental Assessment          NOISE EXPOSURE SYNTHESIS CURVE</b>	
 <b>HARRIS MILLER          MILLER          &amp; HANSON INC.</b>	SCALE NONE.	EXHIBIT NO.
	DATE AUG. 1996	<b>C4</b>



**APPENDIX D**

**AIRCRAFT OPERATIONS DATA**

Table D.1  
Modeled 1995 Daily Departures

Aircraft	Average Daily Departures		
	Day	Night	Total
<b>Heavy Jets</b>			
DC-8	0.5	0.6	1.1
DC-8S	0.3	0.4	0.7
DC-10	0.0	0.0	0.0
A-300	2.4	0.1	2.5
B-767	1.9	0.4	2.3
B-747	0.1	0.0	0.1
L-1011	0.3	0.1	0.3
sub-total:	5.5	1.6	7.0
<b>Other Large Jets</b>			
DC-9	12.0	1.9	14.0
MD-80	15.3	1.6	16.9
MD-83	0.2	0.0	0.2
MD-88	3.2	0.4	3.6
A-320	5.0	0.3	5.3
FK-28	1.4	0.1	1.5
FK-100	6.6	0.5	7.1
B-727	12.7	4.6	17.3
B-737-200	61.8	3.0	64.8
B-737-300	26.6	2.7	29.3
B-737-400	10.7	1.2	11.9
B-737-500	7.4	0.4	7.8
B-757	18.2	1.7	19.9
BAC-1-11	0.4	0.1	0.5
C-9	0.5	0.1	0.6
sub-total:	182.0	18.5	200.7

Aircraft	Average Daily Departures		
	Day	Night	Total
<b>Light Jets/Commuter</b>			
CV-640	0.1	1.4	1.5
L-188	0.1	0.2	0.3
DHC-7	1.9	0.2	2.2
DHC-8	70.3	4.5	74.9
ATR-42	6.6	0.1	6.7
SH-36	1.3	0.1	1.4
SF-34	3.9	0.6	4.4
BE-1900	7.9	0.8	8.7
BA-31	4.8	0.2	5.1
C-130	0.8	0.2	1.0
F-16	0.2	0.0	0.2
Lear 35	5.4	1.9	8.1
Citation3	1.2	0.1	1.3
Lear 25	3.7	0.7	4.3
Sabre80	0.2	0.0	0.2
Falcon 20	0.4	0.1	0.5
Gulfstream II	0.3	0.0	0.3
Mitsubishi 3001	1.1	0.1	1.2
Cessna 500	1.0	0.5	1.5
Canadair 600/601	0.7	0.0	0.7
Gulfstream IV	0.3	0.0	0.4
sub-total:	112.1	11.8	124.8
<b>General Aviation Props, etc.</b>			
C-12	1.4	0.2	1.6
BE-200	16.3	1.8	18.1
C150	13.9	0.8	14.8
PA-34	20.1	4.3	24.3
C208	0.1	0.5	0.7
CH-47 (ROTOR)	0.5	0.1	0.6
BELL-206 (ROTOR)	6.2	0.5	6.8
sub-total:	58.5	8.2	66.9
<b>TOTAL:</b>	<b>358.1</b>	<b>40.0</b>	<b>399.4</b>

Table D.2  
Modeled Daily Departures  
1999 No-Build

Aircraft	Average Daily Departures		
	Day	Night	Total
<b>Heavy Jets</b>			
DC-8	0.6	0.5	1.1
DC-8S	0.4	0.3	0.7
DC-10	0.0	0.0	0.0
A-300	1.5	0.1	1.6
B-767	4.2	0.7	4.9
B-747	0.2	0.0	0.2
L-1011	0.2	0.0	0.2
sub-total:	7.1	1.6	8.7
<b>Other Large Jets</b>			
DC-9	7.9	1.1	9.0
MD-80	17.1	1.6	18.7
MD-83	0.5	0.0	0.5
MD-88	3.6	0.5	4.1
A-310	0.0	0.0	0.0
A-320	10.1	0.6	10.7
FK-28	0.0	0.0	0.0
FK-100	7.8	0.4	8.2
B-727	7.6	4.1	11.8
B-737-200	45.7	2.4	48.1
B-737-300	39.9	4.2	44.0
B-737-400	21.1	2.2	23.3
B-737-500	10.4	0.5	11.0
B-757	28.4	2.5	30.9
BAC-111	0.4	0.1	0.5
C-9	0.5	0.1	0.6
sub-total:	201.0	20.2	221.4

Aircraft	Average Daily Departures		
	Day	Night	Total
Light Jets/Commuter			
CV-640	0.1	1.4	1.5
L-188	0.1	0.2	0.3
DHC-7	2.2	0.2	2.3
DHC-8	73.8	5.1	78.9
ATR-42	7.1	0.1	7.3
SH-36	1.4	0.1	1.5
SF-34	4.3	0.5	4.8
BE-1900	8.6	0.8	9.4
BA-31	5.3	0.2	5.5
F-16	0.2	0.0	0.2
C-130	0.8	0.2	1.0
Lear 35	5.1	1.8	6.9
Citation3	1.1	0.1	1.3
Lear 25	3.5	0.6	4.1
Sabre80	0.2	0.0	0.2
Falcon 20	0.4	0.1	0.5
Gulfstream II	0.3	0.0	0.3
Mitsubishi 3001	1.1	0.1	1.2
Cessna 500	0.9	0.5	1.4
Canadair 600/601	0.6	0.0	0.7
Gulfstream IV	0.3	0.0	0.3
sub-total:	117.4	12.0	129.3
General Aviation props, etc.			
C-12	1.4	0.2	1.6
BE-200	16.3	1.5	17.8
C150	13.4	1.0	14.4
C208	0.2	0.5	0.7
PA-34	19.1	3.9	23.0
BELL-206(ROTOR)	6.3	0.5	6.7
CH-47 (ROTOR)	0.5	0.1	0.6
sub-total:	57.2	7.6	64.7
<b>TOTAL:</b>	<b>382.7</b>	<b>41.4</b>	<b>424.1</b>

Table D.3  
 Modeled Daily Departures  
 1999 Build Scenarios, Normal and Increased Use

Aircraft	Average Daily Departures		
	Day	Night	Total
<b>Heavy Jets</b>			
DC-8	0.7	0.6	1.3
DC-8S	0.5	0.4	0.9
A-300	1.5	0.1	1.6
B-767	4.2	0.7	4.9
B-747	0.2	0.0	0.2
L-1011	0.2	0.0	0.2
sub-total:	7.3	1.8	9.1
<b>Other Large Jets</b>			
DC-9	8.0	1.2	9.2
MD-80	17.1	1.6	18.7
MD-83	0.5	0.0	0.5
MD-88	3.6	0.5	4.1
A-310	0.6	0.5	1.1
A-320	10.1	0.6	10.7
FK-28	0.0	0.0	0.0
FK-100	7.8	0.4	8.2
B-727	7.6	4.2	11.8
B-737-200	45.7	2.4	48.1
B-737-300	39.9	4.2	44.0
B-737-400	21.1	2.2	23.3
B-737-500	10.4	0.5	11.0
B-757	28.4	2.4	30.8
BAC-1-11	0.4	0.1	0.5
C-9	0.5	0.1	0.6
sub-total:	201.7	20.9	222.6

Aircraft	Average Daily Departures		
	Day	Night	Total
<b>Light Jets/Commuter</b>			
CV-640	0.1	1.7	1.8
L-188	0.1	0.2	0.3
DHC-7	2.2	0.2	2.3
DHC-8	73.8	5.1	78.9
ATR-42	7.1	0.1	7.3
SH-36	1.4	0.1	1.5
SF-34	4.3	0.5	4.8
BE-1900	8.6	0.8	9.4
BA-31	5.3	0.2	5.5
F-16	0.2	0.0	0.2
C-130	0.8	0.2	1.0
Lear 35	5.2	1.8	7.0
Citation3	1.2	0.1	1.3
Lear 25	3.5	0.6	4.1
Sabre80	0.2	0.0	0.2
Falcon 20	0.4	0.1	0.5
Gulfstream II	0.3	0.0	0.3
Mitsubishi 3001	1.1	0.1	1.2
Cessna 500	0.9	0.5	1.4
Canadair 600/601	0.6	0.0	0.7
Gulfstream IV	0.3	0.0	0.3
sub-total:	117.6	12.4	129.9
<b>General Aviation props, etc.</b>			
PA-34	19.1	4.3	23.4
BE-200	16.3	1.5	17.8
C150	13.4	1.0	14.4
C-12	1.4	0.2	1.6
C208	0.2	0.6	0.8
CH-47 (ROTOR)	0.5	0.1	0.6
BELL206(ROTOR)	6.3	0.5	6.7
sub-total:	57.2	8.0	65.3
<b>TOTAL:</b>	<b>383.8</b>	<b>43.1</b>	<b>426.9</b>

Table D.4  
Modeled Daily Departures  
2015 No-Build

Aircraft	Average Daily Departures		
	Day	Night	Total
<b>Heavy Jets</b>			
DC-8	0.6	0.5	1.1
DC-8S	0.4	0.3	0.7
A-300	1.0	0.0	1.1
B-767	5.7	0.6	6.3
B-747	0.2	0.0	0.2
B-777	0.9	0.1	1.0
MD-11	0.3	0.0	0.3
sub-total:	9.1	1.6	10.8
<b>Other Large Jets</b>			
DC-9	4.9	0.9	5.8
MD-80	17.5	1.4	18.9
MD-83	0.6	0.0	0.7
MD-88	2.8	0.4	3.3
MD-90	5.9	0.8	6.8
A-310	0.0	0.0	0.0
A-320	8.9	0.5	9.3
A-330	0.6	0.0	0.7
FK-28	0.0	0.0	0.0
FK-100	6.2	0.3	6.6
B-727	5.4	3.9	9.3
B-737-200	30.2	1.6	31.8
B-737-300	41.7	4.0	45.6
B-737-400	33.0	3.5	36.6
B-737-500	23.9	1.9	25.9
B-737-600	3.7	0.3	4.0
B-737-700	35.2	1.9	37.2
B-757	37.7	3.4	41.1
BAC-111	0.4	0.1	0.5
C-9	0.5	0.1	0.6
sub-total:	259.1	25.1	284.5



Aircraft	Average Daily Departures		
	Day	Night	Total
Light Jets/Commuter			
CV-640	0.1	1.4	1.5
L-188	0.1	0.2	0.3
DHC-7	2.8	0.2	3.0
DHC-8	72.3	6.8	79.1
DHC-8-400	23.5	1.7	25.2
ATR-42	9.2	0.2	9.4
SAAB-2000	1.8	0.1	1.9
SF-34	5.5	0.3	5.8
BA-31	6.2	0.3	6.5
F-16	0.2	0.0	0.2
C-130	0.8	0.2	1.0
BE-1900	9.5	0.9	10.4
Lear 35	4.2	1.9	6.1
Citation3	0.9	0.1	1.0
Lear 25	2.9	0.5	3.4
Sabre80	0.1	0.0	0.1
Falcon 20	0.3	0.1	0.4
Gulfstream II	0.2	0.0	0.2
Mitsubishi 3001	0.9	0.2	1.0
Cessna 500	0.8	0.4	1.1
Canadair 600/601	0.5	0.0	0.5
Gulfstream IV	0.3	0.0	0.3
sub-total:	143.1	15.4	158.5
General Aviation props, etc.			
C150	12.4	0.9	13.3
C208	0.2	0.5	0.7
BE-200	15.4	1.3	16.7
C-12	1.4	0.2	1.5
PA-34	15.6	2.9	18.5
BELL-206(ROTOR)	6.2	0.5	6.7
CH-47 (ROTOR)	0.5	0.1	0.6
sub-total:	51.7	6.3	57.9
<b>TOTALS:</b>	<b>463.0</b>	<b>48.4</b>	<b>511.6</b>

Table D.5  
Modeled Daily Departures  
2015 Build, Normal Use

Aircraft	Average Daily Departures		
	Day	Night	Total
<b>Heavy Jets</b>			
DC-8	0.8	0.7	1.6
DC-8S	0.5	0.5	1.0
A-300	1.0	0.0	1.1
B-767	5.7	0.6	6.3
B-747	0.2	0.0	0.2
B-777	0.9	0.1	1.0
MD-11	0.4	0.3	0.7
sub-total:	9.5	2.2	11.9
<b>Other Large Jets</b>			
DC-9	5.0	1.1	6.1
MD-80	17.5	1.4	18.9
MD-83	0.6	0.0	0.7
MD-88	2.8	0.4	3.3
MD-90	5.9	0.8	6.8
A-310	0.6	0.6	1.2
A-320	8.9	0.5	9.3
A-330	0.6	0.0	0.7
FK-28	0.0	0.0	0.0
FK-100	6.2	0.3	6.6
B-727	5.3	3.6	8.9
B-737-200	30.2	1.6	31.8
B-737-300	41.7	4.0	45.6
B-737-400	33.0	3.5	36.6
B-737-500	23.9	1.9	25.9
B-737-600	3.7	0.3	4.0
B-737-700	35.2	1.9	37.2
B-757	38.1	3.8	41.9
BAC-111	0.4	0.1	0.5
C-9	0.5	0.1	0.6
sub-total:	260.1	26.1	286.5

Aircraft	Average Daily Departures		
	Day	Night	Total
Light Jets/Commuter			
CV-640	0.2	2.0	2.1
L-188	0.1	0.3	0.3
DHC-7	2.8	0.2	3.0
DHC-8	72.3	6.8	79.1
DHC-8-400	23.5	1.7	25.2
ATR-42	9.2	0.2	9.4
SAAB-2000	1.8	0.1	1.9
SF-34	5.5	0.3	5.8
BE-1900	9.5	0.9	10.4
BA-31	6.2	0.3	6.5
F-16	0.2	0.0	0.2
C-130	0.8	0.2	1.0
Lear 35	4.3	1.9	6.2
Citation3	1.0	0.1	1.1
Lear 25	2.9	0.5	3.4
Sabre80	0.1	0.0	0.1
Falcon 20	0.3	0.1	0.4
Gulfstream II	0.2	0.0	0.3
Mitsubishi 3001	0.9	0.1	1.0
Cessna 500	0.8	0.4	1.2
Canadair 600/601	0.5	0.0	0.5
Gulfstream IV	0.3	0.0	0.3
sub-total:	143.4	16.0	159.4
General Aviation props, etc.			
C208	0.2	0.7	0.9
C-12	1.4	0.2	1.5
BE-200	15.4	1.3	16.7
C150	12.4	0.9	13.3
PA-34	15.7	3.6	19.3
BELL206(ROTOR)	6.2	0.5	6.7
CH-47 (ROTOR)	0.5	0.1	0.6
sub-total:	51.8	7.2	58.9
<b>TOTALS:</b>	<b>464.8</b>	<b>51.6</b>	<b>516.7</b>

Table D.6  
Modeled Daily Departures

2015 Build, Increased Hub Use - Current Runway Configuration  
and  
2015 Build, Increased Hub Use - w/ Proposed Parallel Runway

Aircraft	Average Daily Departures		
	Day	Night	Total
<b>Heavy Jets</b>			
DC-8	1.1	1.0	2.0
DC-8S	0.7	0.6	1.3
A-300	1.0	0.0	1.1
B-767	5.7	0.6	6.3
B-747	0.2	0.0	0.2
B-777	0.9	0.1	1.0
MD-11	0.6	1.1	1.7
sub-total:	10.2	3.4	13.7
<b>Other Large Jets</b>			
DC-9	5.1	1.4	6.4
MD-80	17.5	1.4	18.9
MD-83	0.6	0.0	0.7
MD-88	2.8	0.4	3.3
MD-90	5.9	0.8	6.8
A-310	1.7	1.7	3.5
A-320	8.9	0.5	9.3
A-330	0.6	0.0	0.7
FK-28	0.0	0.0	0.0
FK-100	6.2	0.3	6.6
B-727	5.7	4.5	10.3
B-737-200	30.2	1.6	31.8
B-737-300	41.7	4.0	45.6
B-737-400	33.0	3.5	36.6
B-737-500	23.9	1.9	25.9
B-737-600	3.7	0.3	4.0
B-737-700	35.2	1.9	37.2
B-757	39.0	4.8	43.8
BAC-111	0.4	0.1	0.5
C-9	0.5	0.1	0.6
sub-total:	262.6	29.4	292.3

Aircraft	Average Daily Departures		
	Day	Night	Total
<b>Light Jets/Commuter</b>			
CV-640	0.1	1.1	1.2
L-188	0.0	0.0	0.0
DHC-7	2.8	0.2	3.0
DHC-8	72.3	6.8	79.1
DHC-8-400	23.5	1.7	25.2
ATR-42	9.2	0.2	9.4
SAAB-2000	1.8	0.1	1.9
SF-34	5.5	0.3	5.8
BE-1900	9.5	0.9	10.4
BA-31	6.2	0.3	6.5
F-16	0.2	0.0	0.2
C-130	0.8	0.2	1.0
Lear 35	4.4	2.0	6.4
Citation3	1.0	0.1	1.1
Lear 25	3.0	0.5	3.5
Sabre80	0.1	0.0	0.1
Falcon 20	0.3	0.1	0.4
Gulfstream II	0.2	0.0	0.3
Mitsubishi 3001	0.9	0.1	1.0
Cessna 500	0.8	0.4	1.2
Canadair 600/601	0.5	0.0	0.6
Gulfstream IV	0.3	0.0	0.3
sub-total:	143.5	14.9	158.4
<b>General Aviation props, etc.</b>			
C208	0.2	0.7	0.9
C150	12.4	0.9	13.3
BE-200	15.4	1.3	16.7
PA-34	15.5	2.5	18.0
C-12	1.4	0.2	1.5
BELL206(ROTOR)	6.2	0.5	6.7
CH-47 (ROTOR)	0.5	0.1	0.6
sub-total:	51.8	7.2	58.9
<b>TOTALS:</b>	<b>464.8</b>	<b>54.8</b>	<b>523.3</b>

Table D.7  
Runway Utilization, by Aircraft Group  
for 1995, 1999 and 2015 with Current Runway Configuration

Runway	Departures		Arrivals	
	Day	Night	Day	Night
<b>Heavy Jets</b>				
15R	25%	10%	4%	9%
33L	2%	6%	60%	44%
28	69%	82%	5%	6%
10	5%	2%	32%	41%
<b>Other Large Jets</b>				
15R	28%	17%	3%	5%
33L	1%	3%	64%	53%
28	70%	79%	5%	7%
10	1%	1%	28%	36%
<b>Large Multi-Engine Props (non-restricted aircraft types)</b>				
15R	5.7%	8.6%	2.9%	3.0%
33L	0.4%	1.8%	11.9%	16.9%
28	17.3%	52.9%	4.6%	6.8%
10	0.6%	1.2%	7.1%	11.9%
22	0.8%	0.0%	0.6%	0.4%
04	0.1%	0.0%	0.7%	0.7%
15L	22.4%	13.9%	20.9%	11.7%
33R	52.7%	21.6%	51.3%	48.6%
<b>Large Multi-Engine Props (restricted aircraft types)</b>				
15R	23.8%	13.3%	10.9%	7.8%
33L	1.7%	2.8%	44.9%	43.8%
28	72.1%	82.0%	17.4%	17.6%
10	2.5%	1.9%	26.8%	30.8%
22	0.0%	0.0%	0.0%	0.0%
04	0.0%	0.0%	0.0%	0.0%
15L	0.0%	0.0%	0.0%	0.0%
33R	0.0%	0.0%	0.0%	0.0%

Runway	Departures		Arrivals	
	Day	Night	Day	Night
Corporate Jets (non-restricted aircraft types)				
15R	7%	3%	4%	3%
33L	0%	1%	18%	19%
28	20%	21%	7%	7%
10	1%	0%	10%	13%
22	1%	0%	1%	0%
04	0%	0%	1%	1%
15L	28%	66%	15%	14%
33R	43%	9%	44%	42%
Corporate Jets (restricted aircraft types)				
15R	18%	11%	9%	7%
33L	1%	2%	35%	39%
28	56%	70%	14%	16%
10	2%	2%	21%	28%
22	3%	0%	2%	1%
04	0%	0%	2%	2%
15L	10%	12%	3%	0%
33R	10%	2%	16%	8%
GA Props				
15R	2.5%	0.7%	0.6%	1.1%
33L	1.3%	0.4%	2.1%	3.6%
28	3.9%	6.8%	3.3%	8.7%
10	1.9%	1.8%	3.3%	5.5%
22	0.5%	1.4%	0.5%	0.4%
04	0.6%	0.2%	1.1%	1.3%
15L	29.7%	54.9%	29.7%	7.7%
33R	59.6%	33.8%	59.4%	71.7%

Table D.8  
Runway Utilization, by Aircraft Group  
2015 with Proposed Parallel Runway

Runway	Departures		Arrivals	
	Day	Night	Day	Night
<b>Heavy Jets</b>				
15R	18.7%	19.0%	1.5%	1.5%
33L	1.5%	0.7%	74.5%	72.0%
28R	48.0%	48.8%	4.0%	6.0%
10L	1.0%	0.7%	12.1%	14.1%
28L	30.5%	30.5%	1.5%	2.0%
10R	0.3%	0.3%	6.4%	4.4%
<b>Other Large Jets</b>				
15R	18.7%	19.0%	1.5%	1.5%
33L	1.5%	0.7%	75.5%	72.0%
28R	48.0%	48.8%	3.0%	6.0%
10L	1.0%	0.7%	12.1%	14.1%
28L	30.5%	30.5%	1.5%	2.0%
10R	0.3%	0.3%	6.4%	4.4%
<b>Large Multi-Engine Props (non-restricted aircraft types)</b>				
15R	2.5%	2.1%	0.5%	0.5%
33L	0.6%	0.1%	1.0%	4.6%
28R	18.0%	18.0%	3.0%	2.3%
10L	0.5%	1.5%	6.0%	6.0%
28L	11.4%	11.9%	0.5%	1.1%
10R	0.2%	0.2%	3.5%	3.5%
15L	16.8%	16.2%	10.0%	10.0%
33R	50.0%	50.0%	75.5%	72.0%
<b>Large Multi-Engine Props (restricted aircraft types)</b>				
15R	7.5%	6.2%	3.4%	2.8%
33L	1.8%	0.3%	6.9%	25.6%
28R	54.2%	53.3%	20.7%	12.8%
10L	1.5%	4.4%	41.4%	33.3%
28L	34.3%	35.2%	3.4%	6.1%
10R	0.6%	0.6%	24.1%	19.4%
15L	0%	0%	0%	0%
33R	0%	0%	0%	0%



Runway	Departures		Arrivals	
	Day	Night	Day	Night
Corporate Jets (non-restricted aircraft types)				
15R	2.2%	1.6%	1.4%	1.2%
33L	0.5%	0.1%	2.8%	11.1%
28R	15.8%	13.3%	8.5%	5.6%
10L	0.4%	1.1%	16.9%	14.5%
28L	10.0%	8.8%	1.4%	2.7%
10R	0.2%	0.1%	9.9%	8.5%
15L	27.6%	66.0%	15.1%	14.3%
33R	43.2%	9.0%	44.0%	42.1%
Corporate Jets (restricted aircraft types)				
15R	6.1%	5.3%	2.8%	2.6%
33L	1.5%	0.3%	5.6%	23.5%
28R	43.6%	45.6%	16.9%	11.8%
10L	1.2%	3.8%	33.8%	30.7%
28L	27.6%	30.1%	2.8%	5.6%
10R	0.5%	0.5%	19.7%	17.9%
15L	9.9%	12.4%	2.8%	0.0%
33R	9.6%	2.0%	15.5%	8.0%
GA Props				
15R	0%	0%	0%	0%
33L	0%	0%	0%	0%
28R	0%	0%	0%	0%
10L	0%	0%	0%	0%
28L	0%	0%	0%	0%
10R	0%	0%	0%	0%
15L	20%	20%	20%	20%
33R	80%	80%	80%	80%

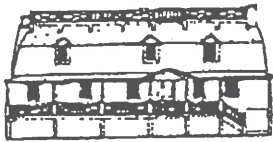
**APPENDIX E**

**HISTORIC AND ARCHAEOLOGICAL  
CONSULTATION**

**APPENDIX E  
CONTENTS**

<b>Item</b>	<b>Date</b>	<b>Coordinating Agency</b>
1	February 7, 1996	Maryland Historical Trust
2	February 9, 1996	Maryland Historical Trust
3	January, 1997	Management Summary Phase I Archaeological Investigation (Exhibits not included)
4	May 16, 1997	Maryland Aviation Administration letter transmitting the Phase I and II Archeological Survey (not included)
5	May 27, 1997	Maryland Aviation Administration letter to Maryland Department of Housing and Community Development requesting concurrence on the determination of no effect
6	June 9, 1997	Maryland Historic Trust

MARYLAND  
HISTORICAL



TRUST

Parris N. Glendening, Governor  
Patricia J. Payne, Secretary

Office of Preservation Services

February 7, 1996

Ms. Barbara Grey, Manager  
Environmental Services  
Maryland Aviation Administration  
P.O. Box 8766  
BWI Airport, MD 21240-0766

Re: Aircraft Rescue and  
Firefighting Facility,  
BWI Airport

Dear Ms. Grey:

Thank you for your letter of 6 February 1996 on the following subject, "Discovery of Unmarked Burials and National Register Evaluation of Burials, Baltimore/Washington International Airport, Anne Arundel County, Maryland."

You describe how construction activities for ARFF had exposed several human burials in an area about 100 ft north of the fenced Friendship Cemetery. Following work stoppage, archeologists from Greiner, Inc., examined the exposed graves and employed hand and mechanical stripping of soil in a 1,537 square ft area to see if further burials were present. In all, Greiner found the remnants of five apparent burials. These features evidenced variable quantities of human bone fragments, coffin hardware and associated artifacts, together with soil stains. Archival research indicates that the exposed burials are from a Potter's Field associated with Friendship Cemetery. The graves' lack of physical integrity and significant associations, relatively recent age (twentieth century), and limited research potential mean that this portion of the Cemetery is ineligible for the National Register of Historic Places. No additional archeological studies are warranted for the discovery site under Section 106 or Maryland's historic preservation law. As you know, however, removal and transfer of human graves requires compliance with State burial laws.

Division of Historical and Cultural Programs  
100 Community Place • Crownsville, Maryland 21032 • (410) 514- 7638

*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.*



EQUAL HOUSING  
OPPORTUNITY

Ms. Barbara Grey  
February 7, 1996  
Page 2

Please note that page 2 of your February 1996 letter relates how WAPORA had prepared a Maryland Archeological Site Survey form for Friendship Cemetery during a 1991 project. The Trust never received this form nor the revised WAPORA report on Runway 10R/28L (see enclosure). We need to receive these two documents to complete Section 106 procedures.

We appreciate MAA's sensitivity to investigating the unexpected graves. If you have any questions or require further information, please contact Dr. Gary Shaffer at (410) 514-7638.

Sincerely,

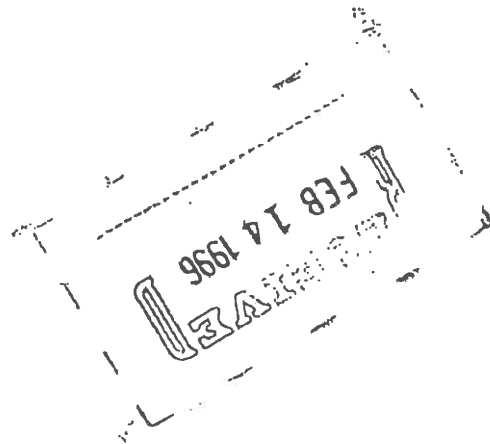


Elizabeth J. Cole  
Administrator  
Archeological Services

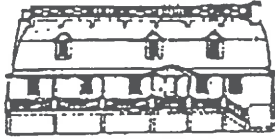
EJC/GDS

cc: Dr. Charlie Hall  
Mr. Terry Klein  
Mr. Harrison Wetherill, Jr.  
Ms. Donna Hole  
Ms. Donna Ware  
Dr. Al Luckenbach  
Ms. Maureen Kavanagh

Enclosure



MARYLAND  
HISTORICAL



TRUST

Parris N. Glendening, Governor  
Patricia J. Payne, Secretary

Office of Preservation Services

February 9, 1996

Ms. Barbara Grey, Manager  
Environmental Services  
Maryland Aviation Administration  
P.O. Box 8766  
BWI Airport, MD 21240-0766

Re: Proposed Midfield Cargo  
Complex at BWI Airport

Dear Ms. Grey:

In response to your request of 24 January 1996, this office has reviewed the above-referenced project with respect to effects on historic properties. Our review has included an examination of the following document, submitted with your January 24th letter: "Cole/Disney Cemetery National Register of Historic Places Evaluation, Baltimore/Washington International Airport, Anne Arundel County, Maryland" (Greiner, Inc., December 1995).

Our files indicate that WAPORA archeologically surveyed the area of potential effects in 1991 as part of the Runway 10R/28L project. The only resource found in the currently proposed construction zone is the Cole/Disney Cemetery. Archival work conducted by Greiner served to evaluate the National Register eligibility of this property (ca. mid-nineteenth to early twentieth centuries). Their research determined that this burial ground of middling planters' families has no significant associations, is represented by relatively plain grave markers, and possesses little important research potential. Furthermore, its physical integrity is questionable, since at least some human remains appear to have been disinterred.

Based on the above information, we concur that the Cole/Disney Cemetery is ineligible for the National Register. We believe that the planned undertaking is unlikely to have an effect on historic properties. No further historic preservation studies are warranted for this site or for the proposed cargo complex under Section 106 or Maryland's historic preservation law. Please note, however, that human burials may still be present, and their removal or transfer would require compliance with State burial laws.

Division of Historical and Cultural Programs

100 Community Place • Crownsville, Maryland 21032 • (410) 514-7638

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. Barbara Grey  
February 9, 1996  
Page 2

We appreciate this opportunity to review the project. If you have any questions or require further information, please contact Dr. Gary Shaffer at (410) 514-7638.

Sincerely,



Elizabeth J. Cole  
Administrator  
Archeological Services

EJC/GDS

cc: ~~Mr. Terry Klein~~  
Mr. Harrison Wetherill, Jr.  
Ms. Donna Hole  
Ms. Donna Ware  
Dr. Al Luckenbach



# Maryland Aviation Administration

"Striving to do our best in everything we do - dedicated to providing outstanding airport facilities and services"

Theodore E. Mathison Executive Director

May 16, 1997

Dr. Gary Shaffer  
Archeological Services  
Division of Historical  
and Cultural Programs  
Maryland Department of  
Housing and Community Development  
100 Community Drive  
Crownsville MD 21032-2023

Subject: Phase I and II Archeological Survey  
Midfield Cargo Complex  
Baltimore/Washington International Airport  
Anne Arundel County, Maryland

Dear Dr. Shaffer:

The subject document is being submitted for your review and comment. Should you have any questions concerning this report, please call Mr. Terry Klein at (609) 499-3447 or me at (410) 859-7090. We greatly appreciate anything you can do to expedite your review of the enclosed document, as is necessary to follow and complete the Section 106 procedures. If I may be of further assistance in any way, please give me a call.

Sincerely,

*Janifer Romanowski*  
(for)

Barbara Grey, Manager  
Environmental Plans and Programs

BEG:jar

Enclosure

cc: Mr. Terry Klein

P.O. Box 8766, BWI Airport, Maryland 21240-0766 (410) 859-7100

FAX: (410) 850-4729 — TDD for the hearing impaired: (410) 859-7227

The Maryland Aviation Administration is an agency of the Maryland Department of Transportation





**MANAGEMENT SUMMARY  
PHASE I ARCHAEOLOGICAL INVESTIGATIONS  
BWI MIDFIELD CARGO COMPLEX**

**Prepared for:**

**Maryland Aviation Administration  
Baltimore, Maryland**

**Prepared by:**

**URS Greiner, Inc.  
Timonium, Maryland**

**January 1997**

**MANAGEMENT SUMMARY**  
**PHASE I ARCHEOLOGICAL INVESTIGATIONS**  
**BWI MIDFIELD CARGO COMPLEX**

**INTRODUCTION:** This document presents a summary of a Phase I archeological investigations conducted by URS Greiner at three localities to be affected by construction of the Mid-Field Cargo Complex. Phase I archeological investigations were directed towards two spoil/stockpile areas (called Areas A and B) and a third tract (designated Area C) falling within the construction of the facilities itself, located immediately south of Runway 10-28 (Figures 1 and 2). Fieldwork was conducted between December 1996 and January 1, 1997. These investigations resulted in the discovery of four previously unrecorded archeological sites, 18AN1048, 18AN1049, 18AN1050, and 18AN1051. The first three sites are small lithic scatters. The fourth site is an early to mid-nineteenth century farmstead. Testing was also carried out at a previously recorded site, 18AN362, discovered in 1976 during a Phase I reconnaissance of BWI noise corridors (Conrad 1976). Reviewed below are brief summaries of the project area's geology, work conducted, and the sites encountered. Recommendations and a workplan for Phase II investigations at the historic site, 18AN1051 are also forwarded.

**PROJECT SETTING:** The BWI project area falls within the Western Division of the Maryland Coastal Plain, an area characterized by gently undulating upland terrain and deeply incised stream valleys. The Fall line, marking the edge of the Coastal Plain, is situated a short distance to the west of the project area, roughly paralleling Interstate 95. The lithology underlying the project area is composed of sands and gravel belonging to the Potomac Group. These deposits represent alluvial terrace or backswamp deposits formed along ancient rivers. Soils developed on these formations are, for the most part, loamy sands with considerable potential for erosion. Most of the area subjected to Phase I investigations are classifiable as Galestown loamy sands or Evesboro loamy sands. Limited areas of Sassafras fine sandy loams are present as well.

Drainage of the project area is served by three streams, all of which are tributary to Stony Run. The latter drains north to flow into the Patapsco River. Clarks Branch is the southernmost stream in the study area, and more or less bounds the southern edge of the parcel designated Area B. Hawkins Branch crosses the project area to form the northern boundary of Area B. Signal Branch, the third stream in the project area, runs parallel to Runway 10-28. All three streams have small intermittent terrace formations that were subjected to Phase I testing.

**AREA A DESCRIPTION:** Area A refers to a roughly square tract of land bordering the security fence along Dorsey Road between Gates 9 and 10 (See Figure 1). The tract measures slightly more than 950 feet north-south and 900 feet east-west. It is designated as a spoil storage area. Impacts to this area will involve stockpiling fill materials from the construction site. Phase I investigations within Area A involved the placement of 15 shovel tests supplemented by 6 bucket auger probes. Shovel tests and auger samples clearly demonstrated that the entire parcel has been disturbed by previous cut and fill activities. The Phase I excavations revealed a thick fill horizon of variable

depth capping loose, loamy sands characteristic of the underlying geological formation. This profile was observed in all shovel tests and auger holes placed. No evidence of an intact A-horizon or subsoil B-horizon beneath the fill was observed. Given the appearance of the terrain, it is likely that Area A was used as a borrow area for earlier construction activity. Subsequent landscaping emplaced the current fill cap over the area. Apart from a light scatter of historic debris recovered from along the fence line paralleling Dorsey Road, no archeological materials were present. The area has no potential to contain intact archeological contexts. No further archeological investigations are recommended for this area.

**AREA B DESCRIPTION:** Area B refers to a large, elliptical tract of land situated in the wooded terrain bounded by Hawkins Branch on the north and Clarks Branch on the south (See Figure 2). It encompasses the upland zone between these two streams and a number of small terraces bordering the south side of Hawkins Branch. Impacts to this area will involve removing all trees and topsoil with heavy machinery. Fill and other debris from construction will then be stockpiled as in Area A. Area B only encompasses a small section of the low-lying ground bordering the north side of Clarks Branch. This pertains to the previously documented site 18AN362, located by Geoffrey Conrad in 1976 during a Phase I investigation of the noise corridors around BWI Airport (Conrad 1976).

Phase I investigations within Area B were limited to the excavation of 298 shovel tests, most of which were placed on a 20-meter grid. A number of the above units were excavated at closer intervals to better define the horizontal limits of artifact scatters. These shovel tests were placed within 7 separate loci defined by specific topographic features. This work resulted in the discovery of four archeological sites, 18AN1048, 18AN1049, 18AN1050, and 18AN1051. The first three are prehistoric lithic scatters. The fourth site, 18AN1051, is an historic farmstead dating to the nineteenth century. These sites are briefly described below.

**SITE 18AN1048:** This refers to a small lithic scatter situated on a bench overlooking Hawkins Branch, bordered to the west by the dirt road crossing Area B. Twenty-five shovel tests were excavated across the site area. Artifacts were recovered from 7 of these units. The assemblage recovered consists of a Brewerton side-notched projectile point manufactured from greenish-brown chert, 7 quartz flakes, a quartzite cobble fragment, and 1 fire-cracked rock. The Brewerton point suggests that at least one component dates to the terminal Middle Archaic period. All of the material was recovered from plowzone contexts. Despite extensive testing of deeper deposits, no artifacts were recovered from sub-plowzone levels. Maximum horizontal extent of the site measures about 65 meters north-south and 40 meters east-west. Artifacts clustered in two distinct areas within these larger limits. Since the site lacks contextual integrity, no further work is recommended.

**SITE 18AN1049:** This site is a small lithic scatter situated at the head of an extinct spring that drained northward into Hawkins Branch. The site is defined by a group of four shovel tests containing prehistoric lithic materials bordering the head of the drainage feature. The assemblage recovered is small, consisting of 3 quartz flakes and 2 quartzite flakes. These five flakes were recovered from the plowzone (Ap-horizon) at the site. The site measures only about 12 meters in

maximum diameter. Given the small, non-diagnostic assemblage and lack of subsurface context, no further work is recommended.

**SITE 18AN1050:** This designation refers to a prehistoric lithic scatter along a high bench overlooking Hawkins Branch. It is situated west of site 18AN1048 in Area B. The site is defined by the recovery of flaking debris from 14 shovel tests placed on the bench formation. In horizontal extent the site extends for approximately 150 meters east-west along the stream, forming two separate concentrations of debitage. The site's north-south dimensions range from 20 to 50 meters depending on the width of the bench. No chronologically diagnostic artifacts were found during the Phase I investigations. Although this site is situated a short distance north of 18AN1049, it is considered separate because it occupies a topographic setting distinct from the latter. All artifacts were recovered from the plowzone (Ap-horizon) at the site. Sub-plowzone archeological contexts do not exist at the site. In some areas the plowzone was thicker than those recorded on higher elevations within the project area. Plowzone horizons within 18AN1050 were enhanced by the build-up of colluvial materials derived from the adjacent hill slope leading to Area B, Locus 5 and site 18AN1051. Since intact contexts do not occur at the site, no further work is recommended.

**SITE 18AN1051:** This refers to an early through mid-nineteenth century domestic site located on the summit of a hill between Clarks Branch and Hawkins Branch. It is in Area B, Locus 5. The presence of the site was initially indicated when a brick-lined well was found. Testing on the summit of the adjacent hill revealed variable quantities of both architectural debris (window glass, brick fragments, and nails) and domestic artifact classes such as bottle glass, ceramics, and a doll head. Shovel testing indicated two separate artifact clusters, a larger one south of the well, and a smaller concentration to the north of the well. Preliminary archival research shows that this site likely corresponds to the dwelling of Joseph Gaither, a farmer who owned the property between 1808 to 1850/1860. The property was called the Homestead. It is depicted on Simon J. Martenet's 1860 map of Anne Arundel County, Maryland as well as G. M. Hopkin's 1978 map of the area. Apart from the historic artifacts, several shovel tests in the site area revealed one or two quartz flakes and a hammerstone. These lithic artifacts, all recovered from the plowzone (Ap) horizon, do not appear to represent a significant component of the site.

Although all historic artifacts were recovered from the plowzone, there is an excellent chance for the preservation of sub-plowzone features that would have been associated with the farmstead occupation. Besides the well, which may contain a rich repertoire of artifacts related to the structure, features may include foundation trenches or footings, trash pits or midden areas, storage or root cellars (perhaps within the confines of the main domestic structure), and privies. Given the possible early date of the site, and the potential to contain intact, significant features, Phase II investigations are recommended to assess the site's eligibility for listing on the National Register. A Phase II workplan is appended to this document.

**AREA C DESCRIPTION:** Area C encompasses the immediate floodplain environs and surrounding terrain near the headwaters of Signal Branch (See Figure 2). This area lies immediately south of Runway 10-28. Phase I testing in this area was limited to the excavation of 27 shovel tests,

placed judgmentally in higher terrace formations along the stream. Fourteen shovel tests were excavated along the south side, and thirteen on the north. Most of the terrain, especially along the north, consisted of low-lying terraces with hydromorphic soils. No archeological sites were found on this area, though the far western portion of Area C lies adjacent to the Harmans A site, 18AN29A.

**SUMMARY REMARKS:** Phase I investigations at three tracts of land to be impacted by construction of the Midfield Cargo Complex were conducted between December, 1996 and January 1, 1997. These investigations revealed four previously undocumented archeological sites. Three of these, 18AN1048, 18AN1049, and 18AN1050 were prehistoric lithic scatters, with 18AN1048 containing one component dating to the late Middle Archaic period. The other two sites were small, undated lithic scatters. None of these prehistoric sites had any subsurface archeological context. No further work need be conducted at these three sites since they are not recommended as eligible for the National Register.

The fourth site, 18AN1051, is an historic farmstead dating from the early to mid-nineteenth century. The location can be correlated with archival data showing that it belonged to Joseph Gaither, and was occupied between about 1808 and 1850/60. This date range is partly corroborated by the assemblage recovered during the Phase I investigations. Preservation of at least one feature, a brick well, as well as the potential for additional features, suggests that the site is potentially eligible for the National Register. Phase II investigations, outlined in a workplan below, are recommended to assess the site's eligibility.

A previously recorded site in Area B along Hawkins Branch, 18AN362, was also tested during the Phase I investigations. This site, originally documented by Conrad (1976) during a Phase I survey of the BWI Noise Corridors, was characterized as a small and undated prehistoric lithic scatter. Testing across the site area revealed only two fire-cracked rocks from plowzone contexts. It is not recommended as eligible for the National Register. No further work is recommended for this site.

**PHASE II WORKPLAN FOR 18AN1051:** The purpose of Phase II investigations at site 18AN1051 is to assess whether or not the site is eligible for the National Register. Phase II investigations will focus on determining if sub-plowzone features are present within the site area. Fieldwork will be conducted in a three-stage sequence of tasks involving the following: 1) additional shovel testing to refine artifact distributions; 2) excavation of linear slit trenches to locate foundations and associated features; and 3) excavation of between 4 to 6 test units (1x1-meter-squares) to assess any features or areas of high artifact concentrations. These field tasks, described below, will be conducted within the parameters of a transit-established grid placed across the site area. At a minimum, the grid system will consist of several key baselines, providing horizontal control for all units excavated.

**A) Shovel Testing** - Approximately ten to fifteen additional shovel tests will be placed at five and/or ten meter intervals between the original shovel test transects A, B, and C. This corresponds to the area of highest artifact concentration within the site. Field counts from these units will be conducted immediately and recorded on a distribution map, noting quantities of architectural and domestic

artifact classes. These counts will allow refinement of the Phase I artifact distribution and serve as a guide to place the linear slit-trenches.

**B) Linear Slit Trenching** - Based on artifact distributions resultant from the shovel testing, three to five narrow trenches (measuring fifty-centimeters in width) will be excavated along north-south transects. Excavation of these trenches will involve removing the plowzone horizon to expose the surface of the underlying subsoil in order to detect features. Soil removed will be stockpiled to the side of the trench on plastic, with one meter sections sifted at five meter intervals to recover a sample of artifacts from the plowzone. These trenches, to be placed across both areas of high architectural artifact classes as well as domestic artifact classes, should be able to locate the foundation of the former structure and perhaps any additional features. It is anticipated that these trenches will be placed parallel to the shovel test transects A through C.

**C) Test Unit Excavation** - Once features or areas of particularly high artifact concentrations are defined, four to six test units will be excavated. These units will be used to sample and further identify any feature encountered in the trenching task. As with the trenches, these units will only be excavated to the base of the plowzone to expose a feature. Features will be mapped and photo documented once they are identified in plan. Sectioning (i.e. sampling) of features will be conducted only to the extent necessary to define their depth, contents, and association with other features within the site.

Concurrent with the excavation of the test units will be the sampling of the brick well feature. Testing, which is not to exceed four feet in depth, will focus on determining the extent of the recent soil fill cap and artifact content in the deeper fill. Augering below four feet will be conducted to determine the depth of the feature.

**D) Analytical and Report Writing Tasks** - Upon completion of the field work all artifactual materials recovered will be transported to URS Greiner's laboratory facilities for processing and analysis. Artifacts will be washed, numbered, and cataloged to the standards of the Maryland Historical Trust (MHT). A printed inventory of the artifacts will be an appendix to the project report. Preliminary stage analysis of the artifacts will involve identification of the form, function, and dates of production, as well as conservation for those objects which are in need of stabilization. Standard references will be used for identification and dating (Godden 1964, Jones et al. 1989, Miller 1980, Noel Hume 1970, South 1977, and Toulouse 1971).

The second stage of analysis will involve identification of sub-assemblages of artifacts for quantification and tighter dating through the use of *Terminus post quem* artifacts, and when possible, known historic events such as the dates of fires and landscaping episodes. In most cases, these sub-assemblages will be datable to specific time periods of occupation which will enable URS Greiner to associate them with the farmstead's occupants. Subsequently, it may be possible to link artifacts to documentation on the site, such as probate inventories.

From these sub-assemblages URS Greiner will generate minimal ceramic and glass vessel counts to help place the assemblage into a consumer context (Miller 1980, 1991; Miller, Martin, and Dickinson 1994; Klein 1991). Crossmend information from the reconstruction of minimal vessel counts will also be used to help understand the sequencing of the various features or discard areas within the locations excavated.

## REFERENCES CITED

- Conrad, Geoffrey  
1976 Archeological Reconnaissance of Baltimore-Washington International Airport and the Noise Corridors of its Runways (Anne Arundel, Howard, and Baltimore Counties). Division of Archeology, Maryland Geological Survey, File Report Number 54.
- Godden, Geoffery A.  
1964 *Encyclopedia of British Pottery and Porcelain Marks*. Shiffer Publishing Ltd., Pennsylvania.
- Jones, Olive, Catherine Sullivan, with contributions by George L. Miller, E. Ann Smith, Jane E. Harris, and Kevin Lunn  
1989 *The Parks Canada Glass Glossary*. National Historic Parks and Sites, Ottawa, Canada.
- Klein, Terry H.  
1991 Nineteenth-Century Ceramics and Models of Consumer Behavior. *Historical Archaeology* (2):77-91.
- Miller, George L.  
1980 Classification and Economic Scaling of 19th-Century Ceramics. *Historical Archaeology* (14):1-40.
- 1991 A Revised Set of CC Index Values for Classification and Economic Scaling of English Ceramics from 1787 to 1880. *Historical Archaeology* (25):1-25.
- Miller, George L., Ann Smart Martin, and Nancy S. Dickinson  
1994 Changing Consumption Patterns: English Ceramics and the American Market from 1770 to 1840, in *Everyday Life in the Early Republic*, edited by Catherine E. Hutchins. Winterthur Museum, pp.219-248.
- Noel-Hume, Ivor  
1970 *A Guide to Artifacts of Colonial America*. Alfred E. Knopf, New York.
- South, Stanley  
1977 *Method and Theory in Historical Archaeology*. Academic Press, New York.
- Toulouse, Julian  
1982 *Bottle Makers and Their Marks*. Thomas Nelson, New York.



## REFERENCES CITED

Bienenfeld, Paula; Christine Hoepfner; Elizabeth Haynes; and Andrew Bickford

1992 Phase I Archaeological Survey, Martin State Airport, Baltimore, Maryland. Submitted to the Maryland Aviation Administration and Daniel, Mann, Johnson and Mendenhall. Prepared by WAPORA, Inc.

Otter, Edward; Madeleine Pappas; Mark Walker; Michael Petraglia; and Catherine Toulmin

1990 A Phase I Archaeological Study for the Expansion of Runway 14/32 and the Midfield Complex at Martin State Airport, Baltimore, Maryland. Submitted to the Maryland Aviation Administration. Prepared by Engineering-Science, Inc.

Walker, Mark; Michael Petraglia, Madeleine Pappas, and Catherine Toumlain

1990 A Phase I Archaeological Study for the Runway 14/22 Area, Martin State Airport, Baltimore, Maryland. Submitted to the Maryland Aviation Administration. Prepared by Engineering-Science, Inc.



# Maryland Aviation Administration

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Theodore E. Mathison Executive Director

May 27, 1997

Dr. Gary Shaffer  
Archeological Services  
Division of Historical and Cultural Programs  
Maryland Department of Housing and Community Development  
100 Community Drive  
Crownsville MD 21032-2023

Re: Effects of Midfield Cargo Complex on Historic Properties, Baltimore/Washington International Airport, Anne Arundel County, Maryland

Dear Dr. Shaffer:

Copies of the Phase I archeological survey report on the proposed midfield cargo facility were sent to you on May 16, 1997. This Phase I survey focused on the selected Alternative 4R. The following presents an evaluation of the effects of this alternative on historic properties, pursuant to 36CFR800.5.

The Area of Potential Effects (APE) for this alternative was defined as all locations associated with the proposed undertaking that will result in the alternation and disturbance of surface and subsurface soils, i.e., the proposed limits of disturbance. Five archeological sites were identified during the Phase I survey of the APE: 18AN362, 18AN1048, 18AN1049, 18AN1050 and 18AN1051. Site 18AN362 had been previously recorded during an earlier survey (see Brown, Herbert, and Klein 1995). The FAA has determined that sites 18AN362, 18AN1048, 18AN1049, and 18AN1050 are not eligible for listing in the National Register of Historic Places, given that these sites are all small lithic scatters restricted to plowzone contexts, and therefore do not have the potential to yield information important in prehistory (i.e. meeting National Register Criterion D). The FAA is consulting with the Maryland Historical Trust (MHT) to obtain concurrence with this determination. The FAA has also determined that site 18AN1051 is eligible for listing in the National Register. This site is a mid-to late 19th century farmstead that has the potential to provide information important in history, and therefore, meets National Register Criterion D. The FAA is consulting with the MHT to obtain concurrence with this determination.

P.O. Box 8766, BWI Airport, Maryland 21240-0766 (410) 859-7100

FAX: (410) 850-4729 — TDD for the hearing impaired: (410) 859-7227

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Dr. Gary Shaffer  
May 27, 1997  
Page Two

To the west of the project area, is the Harmans A Site (18AN29A). This site has previously been determined eligible for the National Register (see Barse, Sterling and Brown, 1997). The National Register-eligible portions of this site are restricted to the west side of Maryland Route 170, and therefore, do not extend within the APE of the proposed midfield cargo complex, as the associated widening of Maryland Route 170 will be restricted to the eastern side of the roadway.

There are no historic standing structures within the APE associated with the air cargo project.

Development of the Midfield Cargo Complex and associated roadway widening as planned will not affect site 18AN1051 (see enclosed map of Alternative 4R. This site is designated as "historical site" on the map). The spoil area in the vicinity of this site has been designed to avoid the site, and a permanent fence will be placed around the boundaries of this site to protect the site during and after construction of the complex. As noted above, the National Register-eligible site 18AN29A (the Harmans A site) is located to the west of the project area and will not be affected by the proposed midfield cargo project (see enclosed map of proposed widening of Maryland Route 170). Therefore, in applying the Criteria of Effect (36CFR800.9(a), Alternative 4R will have no effect on properties listed or eligible for listing in the National Register of Historic Places.

Please review the enclosed maps of the project, and at your earliest convenience, provide us with your concurrence on this determination of no effect. If I may be of further assistance, please contact me at 410-859-7090.

Sincerely,

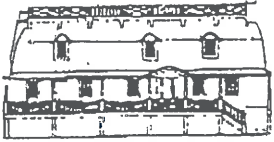


Barbara Grey, Manager  
Environmental Services

Enclosures

cc: Mr. Terry Klein  
Mr. Mike Steer

MARYLAND HISTORICAL



TRUST

Office of Preservation Services

Parris N. Glendening, Governor  
Patricia J. Payne, Secretary



June 9, 1997

Ms. Barbara Grey, Manager  
Environmental Plans and Programs  
Maryland Aviation Administration  
P.O. Box 8766  
BWI Airport, MD 21240-0766

Re: Proposed Midfield Cargo  
Complex, Baltimore/  
Washington International  
Airport; 199763850;  
MD961211-1111

Dear Ms. Grey:

Thank you for your letters of 16 and 27 May 1997, and for the review copy of the following report: Phase I Archeological Survey, Midfield Cargo Complex, Baltimore/Washington International Airport, Anne Arundel County, Maryland. (April 1997). URS Greiner, Inc., prepared the document.

The report comprehensively describes the project's goals, methods, and results. It contains relatively thorough discussions of site function and research potential and addresses the Standards and Guidelines for Archeological Investigations in Maryland (Shaffer and Cole 1994). In our opinion, the level of background research and fieldwork was sufficient to identify the full range of archeological properties in the area of potential effects and to evaluate their eligibility for the National Register of Historic Places.

The project identified six new and previously inventoried archeological sites, as well as isolated and scattered prehistoric and historic artifacts. The latter isolated and scattered objects lack important research potential, are ineligible for the National Register, and warrant no further work.

With regard to the archeological sites, previous investigators had determined that the portion of Harmans A site (18AN29A) in the area of potential effects is ineligible for the National Register.

Division of Historical and Cultural Programs  
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*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. Barbara Grey  
June 9, 1997  
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It needs no additional study for this undertaking. The consultant reidentified 18AN362. Surveyors found only one piece of quartz debitage and two fire-cracked rocks during the current project. The lack of cultural material indicates a lack of important research potential for this hunting station. Therefore, the site is ineligible for the National Register and warrants no further investigation.

Among the newly discovered sites are 18AN1048, 18AN1049, and 18AN1050. These properties evidenced low densities of prehistoric lithic debitage and fire-cracked rocks. The only temporally diagnostic artifact was a late Middle Archaic Brewerton projectile point from 18AN1048. None of the sites have important research potential. Therefore, sites 18AN1048, 18AN1049, and 1050 are ineligible for the National Register and need no additional study.

The final newly identified site is 18AN1051. Shovel test pits, excavation units, and exploratory trenches found it to represent a late nineteenth century farmstead. Surveying and testing yielded approximately 1,000 artifacts: ceramics, glass, architectural debris, personal items, and various metal objects. The site includes a brick-lined well and several other features. Trenching discovered a large refuse pit, two irregular stains with artifacts, and over 30 postmolds. The postmolds might be from a fence. According to the consultant, the site may represent a seasonal, agricultural pickers' camp. The site has intact artifact bearing features and the potential to provide important historical information on the physical layout of nineteenth century farms and the socioeconomic relationship between Baltimore City and agricultural northern Anne Arundel County. For these reasons, we concur that 18AN1051 is eligible for the National Register.

Your letter of 27 May 1997 states that the design of the proposed spoil area at 18AN1051 has been changed. Now, ground disturbance will not occur at this archeological property. Further, MAA shall erect a permanent fence around 18AN1051 to protect it during and after construction. Given these conditions (project redesign and fencing) and our earlier architectural review, we agree that the undertaking will have no effect on historic properties.

Finally, we have several editorial comments on the draft report itself. The consultant should address the following issues in a revised document:

- 1) The report's title should refer to Phase I and Phase II archeological investigations.
- 2) The project area dot in Figure 1.1 should be farther west.

Ms. Barbara Grey  
June 9, 1997  
Page 3

3) Editing is needed on pages 3.1 (site situated; may have led), 3.5 (outbuildings), 4.9 ((10YR 6/8)), 4.19 (locus), 5.3 (Friedlander), 5.5 (effect), 5.7 (xx; xx; yy; Artifacts), 5.10 ("hunk" [colloquial]; no space between "measured" and "160"), 5.12 (brick-lined), 5.13 (xx; yy), 5.14 (from a point), 5.15 (of brass tokens), 5.16 (acidic. entire), as well as on the third page of the bibliography (Bienenfeld) and the second page of Barse's resume (Monongahela [twice]).

4) Figure 1.2 needs to show the boundaries of the area of potential effects.

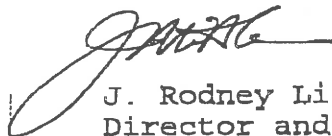
5) Figure 5.3 needs a key for the symbols in Feature 1.

6) The third paragraph on page 5.14 should more clearly discuss site occupation and "actual" abandonment.

7) Page 5.17 needs to refer to National Register Criterion D and to discuss project effects.

We look forward to receiving the final report. If you have any questions or require further information, please contact Dr. Gary Shaffer at 410-514-7638.

Sincerely,



J. Rodney Little  
Director and State Historic  
Preservation Officer

JRL/GDS  
9701337

cc: Mr. Terry Klein (URS Greiner)  
Mrs. Linda Morrison (COE)  
Mr. Terry Clark (MDE)  
Mr. Bob Rosenbush (State Clearinghouse)  
Mr. Harrison Wetherill, Jr.  
Ms. Donna Ware  
Ms. Donna Hole  
Dr. Al Luckenbach

**APPENDIX F**

**HIGHLIGHTS OF THE BWI  
WETLAND MANAGEMENT PLAN**

**WETLAND DELINEATION**  
**For The**  
**PROPOSED AIR CARGO TERMINAL**  
**ENVIRONMENTAL ASSESSMENT**  
**BALTIMORE/WASHINGTON INTERNATIONAL AIRPORT**  
**ANNE ARUNDEL COUNTY, MARYLAND**

**Prepared For**  
**MARYLAND DEPARTMENT OF TRANSPORTATION**  
**MARYLAND AVIATION ADMINISTRATION**

**By**  
**GREINER, INC.**  
**TIMONIUM, MARYLAND**

**MARCH 1996**



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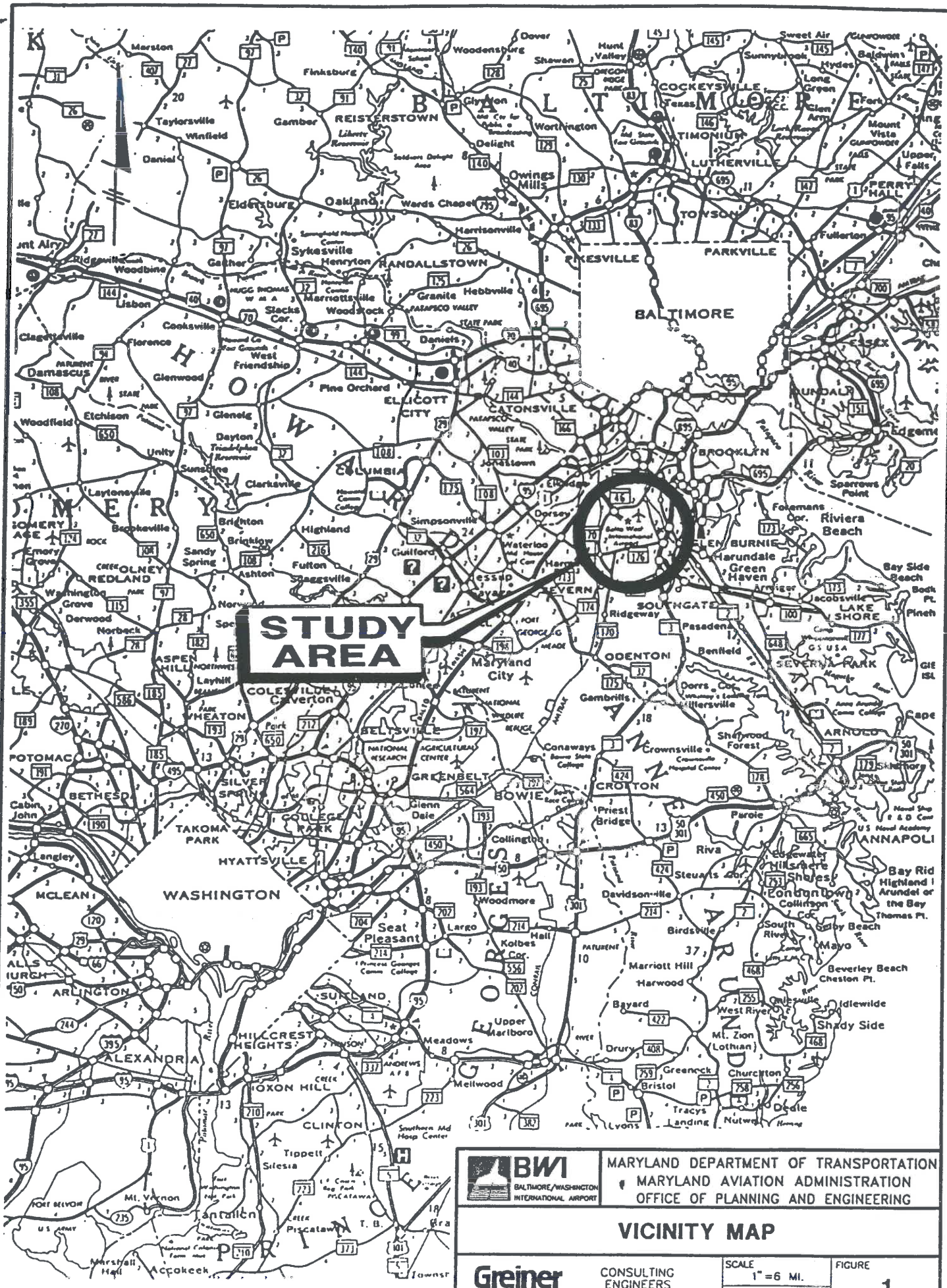
<u>Section</u>	<u>Description</u>	<u>Page No.</u>
I	Introduction . . . . .	1
II	Site Description and Project Purpose . . . . .	2
III	Methodology . . . . .	3
IV	Wetland Descriptions . . . . .	5


Appendix A - Wetland Delineation Data Sheets

## **SECTION I: INTRODUCTION**

A wetland delineation for the Proposed Air Cargo Terminal, Baltimore/Washington International (BWI) Airport, Anne Arundel County, Maryland, was performed by Greiner, Inc. and Coastal Resources, Inc. in January 1996. The wetland areas were field mapped onto 100-scale topographic maps. The wetland areas were previously surveyed by Greiner, Inc. in 1993 and, therefore, minor adjustments have been made to the survey with this redelineation. Figure 1 provides a site vicinity map.

One of the alternatives being considered for the location of the Proposed Air Cargo Terminal is in the southwest quadrant of BWI, directly south and adjacent to Runway 10-28 and west of the ARFF Station, which is currently under construction (Figure 1).



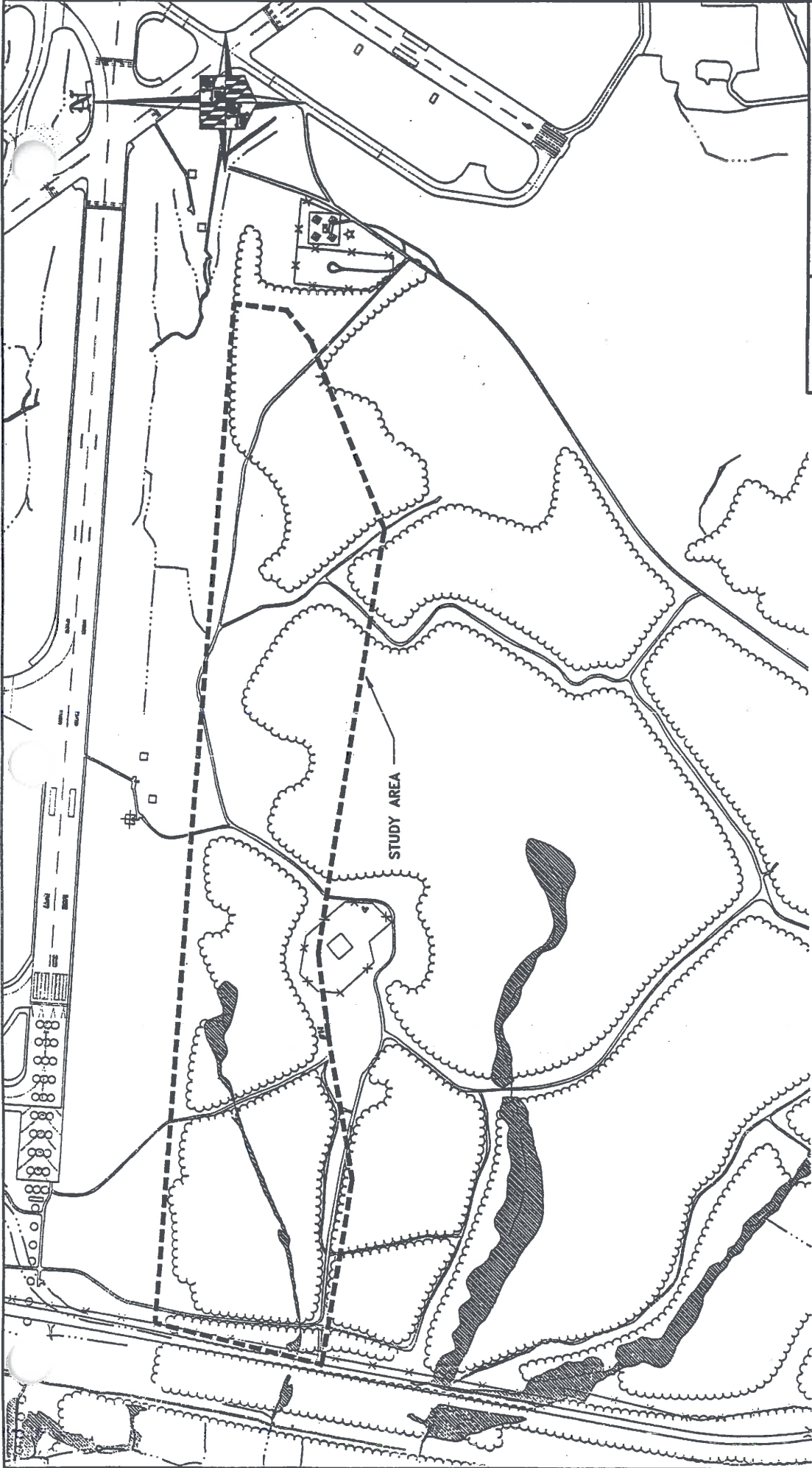
 <b>BWI</b> BALTIMORE/WASHINGTON INTERNATIONAL AIRPORT	MARYLAND DEPARTMENT OF TRANSPORTATION MARYLAND AVIATION ADMINISTRATION OFFICE OF PLANNING AND ENGINEERING	
	<b>VICINITY MAP</b>	
<b>Greiner</b> GREINER, INC.	CONSULTING ENGINEERS TIMONIUM, MARYLAND	SCALE 1" = 6 MI.
		DATE MARCH 1996
		FIGURE <b>1</b>



## **SECTION II: SITE DESCRIPTION AND PROJECT PURPOSE**

This delineation was undertaken to update the Airport-wide wetlands delineation for this area that had been completed in September 1993 by Greiner, Inc. The study area begins at the western edge of the limit of disturbance for the ARFF Station and continues to Aviation Boulevard. Portions of the study area are beyond the limit of disturbance for the Proposed Air Cargo Terminal. Figure 2 shows the location of the study area for this delineation.

During the time that the delineation was performed the State of Maryland, as well as other eastern seaboard states, was experiencing severe flood conditions and there were portions of the study area that were still under one foot of snow cover. The hydrologic indicators and herbaceous plant layer, that may have been evident during warmer and drier months, were not evident during this delineation.

The majority of the study area was forested, but there were areas of meadow adjacent to Runway 10-28 and access roads throughout. The Signal Branch wetland system is a forested wetland and an intermittent stream which flows west, under Aviation Boulevard.



 B.W. INTERNATIONAL, INC. CONSULTING ENGINEERS AND PLANNERS BETHESDA, MARYLAND	MARYLAND DEPARTMENT OF TRANSPORTATION MARYLAND AVIATION ADMINISTRATION OFFICE OF PLANNING AND ENGINEERING	
	WETLAND DELINEATION STUDY AREA	
 CONSULTING ENGINEERS AND PLANNERS BETHESDA, MARYLAND	SCALE 1" = 500' DATE MARCH 1996	FIGURE 2

### SECTION III: METHODOLOGY

The wetlands were field delineated according to the 1987 Corps of Engineers Wetlands Delineation Manual (hereafter, the Manual), using the routine on-site method. The Manual outlines a three parameter approach to delineating wetlands. All three of the parameters (vegetation, soils, and hydrology) must be present for the area to be considered a wetland, unless the site has been disturbed or is considered a "problem" area. The Signal Branch wetland system has been relatively undisturbed and is not considered a "problem" area and, therefore, had to fulfill the three parameters.

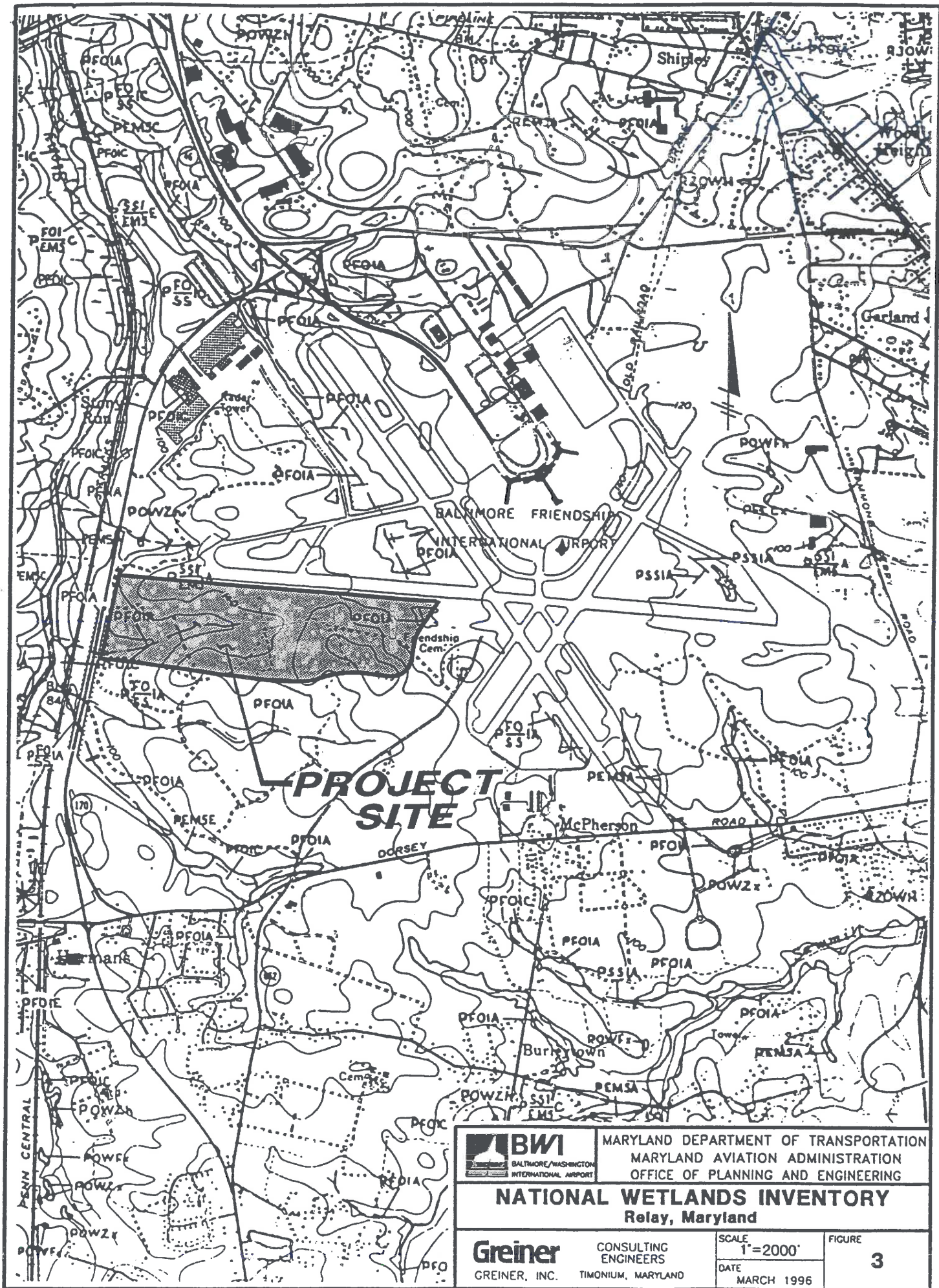
Wetlands are defined in the federal regulations as "waters of the United States," which includes streams, lakes, ponds, and rivers, among others. This report describes all "waters of the United States" that exist within the study area.

Figure 3 is the National Wetlands Inventory mapping for this study area. The plant species observed in the field were identified using the appropriate field guides. The wetland indicator status for each species was determined from the National List of Plant Species that Occur in Wetlands; Northeast (Region 1) (May 1988). The indicator status designates the probability of occurrence of a given plant species in wetlands in the Northeast Region of the United States. Greater than 50% of facultative or wetland species has to be present for the area to fulfill the vegetation parameter.

Indicators of wetland hydrology (as outlined in the Manual) include drainage patterns, drift lines, sediment deposits, water marks, stream gauge data and flood predictions, historic records, visual observation of saturated soils, surface water, or inundation. Any hydrologic indicators observed were noted during the field investigation.

The 1973 Soil Survey of Anne Arundel County, Maryland was used to determine the mapped soil type, subgroup, drainage class, and other characteristics (Figure 4). This information is provided on the data sheets and is mentioned in the wetland descriptions. During the delineation, soil samples were taken using an augur to a depth of twenty inches. Each layer of the soil profile was examined and the characteristics determined. The Munsell Soil Color Charts (Munsell Color, 1994 Revised Edition) were used for identification of the soil color, chroma, and value. The soils below the A-horizon or ten inches (whichever was shallower) were compared to the hydric soil indicators in Part III of the Manual to determine if they fulfilled any of the hydric characteristics.

For purposes of classifying the wetlands and other jurisdictional waters, the Classification of Wetland and Deepwater Habitats of the United States (Cowardin et al, 1979) was used. This is a hierarchical system which provides a uniformity of concepts and terms





FRIENDSHIP INTERNATIONAL AIRPORT

PROJECT SITE

1 Mile 1/2 1/4 0



MARYLAND DEPARTMENT OF TRANSPORTATION  
MARYLAND AVIATION ADMINISTRATION  
OFFICE OF PLANNING AND ENGINEERING

**SOIL SURVEY OF ANNE ARUNDEL COUNTY, MARYLAND**

**Greiner**  
GREINER, INC.

CONSULTING ENGINEERS  
TIMONIUM, MARYLAND

SCALE AS SHOWN  
DATE MARCH 1996

FIGURE 4



used to define wetlands according to hydrologic, geomorphologic, chemical, and biological factors.

Although procedures for making the wetland determinations in the field are standardized, vegetated wetlands are often transitional areas between aquatic and upland habitats. The wetland delineation for Signal Branch was made using the parameters as defined in the Manual and our best professional judgement. The wetland boundaries are subject to modification by the regulatory agencies. As outlined in the federal and state regulations, the final wetland determination is the authority of the Corps of Engineers (the Corps) and the Maryland Department of the Environment (MDE).

#### SECTION IV: WETLAND DESCRIPTION

Signal Branch is predominantly a forested wetland and stream system. The stream begins as a broad, forested wetland fed by surface runoff and groundwater from the surrounding upland forest. The stream is predominantly a well-defined stream channel, that is approximately 2 feet entrenched, flowing west under MD Route 170 (Camp Meade Road). Signal Branch totals 1.4± acres.

The stream portion of Signal Branch is intermittent and classified as "waters of the United States" which is under the jurisdiction of the Corps. However, Signal Branch has a drainage area that is less than 400 acres and therefore is not regulated by the Maryland Department of the Environment. The channelized stream portion of Signal Branch is on Bibb soils, a hydric soil listed on the state and county hydric soils lists.

The forested wetland area, which is the headwaters of Signal Branch, is dominated by black gum (*Nyssa sylvatica*), red maple (*Acer rubrum*), cinnamon fern (*Osmunda cinnamomea*), sensitive fern (*Onoclea sensibilis*), greenbriar (*Smilax rotundifolia*), and rough bedstraw (*Galium asprellum*). The soils are saturated in the upper twelve inches, there are drainage patterns, and water-stained leaves. The water table is within eight inches of the ground surface. The soils sampled were very dark grayish brown (2.5Y 3/2) to dark olive brown (2.5Y 3/3) in the first ten inches, dark grayish brown (2.5Y 4/2) with strong brown (7.5YR 5/6) mottling to light olive brown (2.5Y 5/3) with reddish brown mottling in the next four to six inches, and light brownish gray (2.5Y 6/2) with reddish brown mottling to very dark gray (10YR 3/1) to a depth of twenty inches. The Anne Arundel County Soil Survey designates this area as Sassafras fine sandy loam (SaC3), a Typic Hapludults. There are small upland levees on either side of the stream for a portion of the wetland area (not mapped). The wetlands are classified as PFO1E (Palustrine, Forested, Broad-leaved Deciduous, Seasonally Flooded/Saturated).

There is another forested wetland area associated with the stream. It is located midway down the stream on the north side. The area is dominated by black gum (*N. sylvatica*), highbush blueberry (*Vaccinium corymbosum*), greenbriar (*S. rotundifolia*), red maple (*A. rubrum*), sensitive fern (*O. sensibilis*), and cinnamon fern (*O. cinnamomea*). There is inundation, drainage patterns, and the soils are saturated in the upper twelve inches. The water table is within four to five inches of the surface. The soils are a very dark gray (10YR 3/1) in the upper ten inches, dark brown (10YR 3/3) with gray mottling in the next four inches, and light yellowish brown (2.5Y 6/3) with yellowish brown mottling to a depth of twenty inches. This area is also mapped as Sassafras fine sandy loam (SaC3), a Typic Hapludults. These wetlands are also classified as PFO1E.

DATA FORM  
 ROUTINE WETLAND DETERMINATION  
 (1987 COE Wetlands Delineation Manual)

Project/Site: <u>BWI - Airport</u> Applicant/Owner: <u>MAA</u> Investigator: <u>JLD IGT</u>	Date: <u>1/24/96</u> County: <u>AA</u> State: <u>MD</u>						
Do Normal Circumstances exist on the site? Is the site significantly disturbed (Atypical Situation)? Is the area a potential Problem Area? (If needed; explain on reverse.)	<table style="width: 100%; border: none;"> <tr> <td style="text-align: center;">Yes <input type="radio"/></td> <td style="text-align: center;">No <input type="radio"/></td> </tr> <tr> <td style="text-align: center;">Yes <input type="radio"/></td> <td style="text-align: center;">No <input checked="" type="radio"/></td> </tr> <tr> <td style="text-align: center;">Yes <input type="radio"/></td> <td style="text-align: center;">No <input type="radio"/></td> </tr> </table>	Yes <input type="radio"/>	No <input type="radio"/>	Yes <input type="radio"/>	No <input checked="" type="radio"/>	Yes <input type="radio"/>	No <input type="radio"/>
Yes <input type="radio"/>	No <input type="radio"/>						
Yes <input type="radio"/>	No <input checked="" type="radio"/>						
Yes <input type="radio"/>	No <input type="radio"/>						
Community ID: <u>Signal Branch</u> Transect ID: _____ Plot ID: <u>7</u>							

East end  
 South of Runway 10-28, headwaters area  
 VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u>Pinus virginiana</u>	<u>Tree</u>	<u>UPL</u>	9. _____	_____	_____
2. <u>Acer rubrum</u>	<u>Tree</u>	<u>FAC</u>	10. _____	_____	_____
3. <u>Nyssa sylvatica</u>	<u>Tree</u>	<u>FAC</u>	11. _____	_____	_____
4. <u>Smilax rotundifolia</u>	<u>Vine</u>	<u>FAC</u>	12. _____	_____	_____
5. <u>Lonicera japonica</u>	<u>Vine</u>	<u>FAC-</u>	13. _____	_____	_____
6. <u>Osmunda cinnamomea</u>	<u>Herb</u>	<u>FACW</u>	14. _____	_____	_____
7. _____	_____	_____	15. _____	_____	_____
8. _____	_____	_____	16. _____	_____	_____

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 67%

Remarks: Open understory  
V. Pines on edges & small knolls

cinna-  
 Fern

**HYDROLOGY**

<p>Recorded Data (Describe in Remarks):</p> <p>___ Stream, Lake, or Tide Gauge</p> <p>___ Aerial Photographs</p> <p>___ Other</p> <p><input checked="" type="checkbox"/> No Recorded Data Available</p> <hr/> <p>Field Observations:</p> <p>Depth of Surface Water: _____ (in.)</p> <p>Depth to Free Water in Pit: _____ (in.)</p> <p>Depth to Saturated Soil: <u>surface</u> (in.)</p>	<p>Wetland Hydrology Indicators:</p> <p>Primary Indicators:</p> <p>___ Inundated</p> <p><input checked="" type="checkbox"/> Saturated in Upper 12 Inches</p> <p>___ Water Marks</p> <p>___ Drift Lines</p> <p>___ Sediment Deposits</p> <p><input checked="" type="checkbox"/> Drainage Patterns in Wetlands</p> <p>Secondary Indicators (2 or more required):</p> <p>___ Oxidized Root Channels in Upper 12 Inches</p> <p><input checked="" type="checkbox"/> Water-Stained Leaves</p> <p>___ Local Soil Survey Data</p> <p>___ FAC-Neutral Test</p> <p>___ Other (Explain in Remarks)</p>
<p>Remarks: <u>Heavy flooding throughout NE region</u>  <u>water table 1.5'</u></p>	

**SOILS**

Map Unit Name (Series and Phase): Sa C3-Saccobias

Drainage Class: \_\_\_\_\_  
 Field Observations: \_\_\_\_\_  
 Confirm Mapped Type? Yes  No

anomy (Subgroup): Typic Natric Lufts

Profile Description:		Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
Depth (Inches)	Horizon				
0-10		2.5Y 3/3	_____	_____	sandy loam
10-14		2.5Y 4/2	7.5YR 5/6	Common, prominent	heavy sandy loam
14-20		10YR 3/1	_____	_____	loamy sand
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

**Hydro Soil Indicators:**

- Histosol
- Histic Epipedon
- Sulfidic Odor
- Aquic Moisture Regime
- Reducing Conditions
- Gleyed or Low-Chrome Colors
- Concretions
- High Organic Content in Surface Layer in Sandy Soils
- Organic Streaking in Sandy Soils
- Listed on Local Hydric Soils List
- Listed on National Hydric Soils List
- Other (Explain in Remarks)

Remarks: \_\_\_\_\_

**WETLAND DETERMINATION**

Hydrophytic Vegetation Present?  Yes  No (Circle)  
 Wetland Hydrology Present?  Yes  No  
 Hydric Soils Present?  Yes  No

Is this Sampling Point Within a Wetland?  Yes  No (Circle)

Remarks: Level on both sides of stream - small upland inclusions - too small to map

**DATA FORM**  
**ROUTINE WETLAND DETERMINATION**  
 (1987 COE Wetlands Delineation Manual)

Project/Site: <u>BWR Airport</u> Applicant/Owner: <u>MAA</u> Investigator: <u>JLSO /GT</u>	Date: <u>1/24/96</u> County: <u>AR</u> State: <u>MO</u>						
Do Normal Circumstances exist on the site? Is the site significantly disturbed (Atypical Situation)? Is the area a potential Problem Area? (If needed, explain on reverse.)	<table style="width: 100%; border: none;"> <tr> <td style="text-align: center;">Yes <input type="radio"/></td> <td style="text-align: center;">No <input type="radio"/></td> </tr> <tr> <td style="text-align: center;">Yes <input type="radio"/></td> <td style="text-align: center;">No <input checked="" type="radio"/></td> </tr> <tr> <td style="text-align: center;">Yes <input type="radio"/></td> <td style="text-align: center;">No <input type="radio"/></td> </tr> </table>	Yes <input type="radio"/>	No <input type="radio"/>	Yes <input type="radio"/>	No <input checked="" type="radio"/>	Yes <input type="radio"/>	No <input type="radio"/>
Yes <input type="radio"/>	No <input type="radio"/>						
Yes <input type="radio"/>	No <input checked="" type="radio"/>						
Yes <input type="radio"/>	No <input type="radio"/>						
Community ID: <u>Signal Branch</u> Transect ID: _____ Plot ID: <u>2</u>							

*Eastern-most end, headwaters area*

**VEGETATION**

*sensitive Fern*

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u>Nyssa sylvatica</u>	<u>Tree</u>	<u>FAC</u>	9. _____	_____	_____
2. <u>Galium asprellum</u>	<u>Herb</u>	<u>OBL</u>	10. _____	_____	_____
3. <u>Onoclea sensibilis</u>	<u>Herb</u>	<u>FACW</u>	11. _____	_____	_____
4. <u>Acer rubrum</u>	<u>Tree</u>	<u>FAC</u>	12. _____	_____	_____
5. <u>Polygonum sp.</u>	<u>Herb</u>	<u>—</u>	13. _____	_____	_____
6. _____	_____	_____	14. _____	_____	_____
7. _____	_____	_____	15. _____	_____	_____
8. _____	_____	_____	16. _____	_____	_____

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-I): 100%

Remarks: Open understory

**HYDROLOGY**

<p>Recorded Data (Describe in Remarks):</p> <p>___ Stream, Lake, or Tide Gauge</p> <p>___ Aerial Photographs</p> <p>___ Other</p> <p><input checked="" type="checkbox"/> No Recorded Data Available</p> <hr/> <p>Field Observations:</p> <p>Depth of Surface Water: _____ (in.)</p> <p>Depth to Free Water in Pit: _____ (in.)</p> <p>Depth to Saturated Soil: <u>surface</u> (in.)</p>	<p>Wetland Hydrology Indicators:</p> <p>Primary Indicators:</p> <p>___ Inundated</p> <p><input checked="" type="checkbox"/> Saturated in Upper 12 Inches</p> <p>___ Water Marks</p> <p>___ Drift Lines</p> <p>___ Sediment Deposits</p> <p><input checked="" type="checkbox"/> Drainage Patterns in Wetlands</p> <p>Secondary Indicators (2 or more required):</p> <p>___ Oxidized Root Channels in Upper 12 Inches</p> <p>___ Water-Stained Leaves</p> <p>___ Local Soil Survey Data</p> <p>___ FAC-Neutral Test</p> <p>___ Other (Explain in Remarks)</p>
<p>Remarks: <u>Water table is 8"</u>  <u>Heavy flooding throughout site region</u></p>	

**SOILS**

Map Unit Name (Series and Phase): SaC3 - Ss. w/ fine Drainage Class: \_\_\_\_\_  
 Confirm Mapped Type? Yes  No

onomy (Subgroup): Typic Hapludult

Profile Description: Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-6		2.5Y 3/2	—	—	silt loam
6-12		2.5Y 5/3	reddish-brown	common, fine	silt loam
12-16		2.5Y 6/2	reddish-brown	few coarse	sandy clay loam

**Hydro Soil Indicators:**

- Histosol
- Histic Epipedon
- Sulfidic Odor
- Aquic Moisture Regime
- Reducing Conditions
- Gleyed or Low-Chroma Colors
- Concretions
- High Organic Content in Surface Layer in Sandy Soils
- Organic Streaking in Sandy Soils
- Listed on Local Hydric Soils List
- Listed on National Hydric Soils List
- Other (Explain in Remarks)

Remarks:

**WETLAND DETERMINATION**

Hydrophytic Vegetation Present?	<input checked="" type="radio"/> Yes <input type="radio"/> No (Circle)	Is this Sampling Point Within a Wetland? <input checked="" type="radio"/> Yes <input type="radio"/> No (Circle)
Wetland Hydrology Present?	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Hydric Soils Present?	<input checked="" type="radio"/> Yes <input type="radio"/> No	

Remarks:

**DATA FORM**  
**ROUTINE WETLAND DETERMINATION**  
(1987 COE Wetlands Delineation Manual)

Project/Site: <u>BWI Airport</u> Applicant/Owner: <u>MAA</u> Investigator: <u>JLSD/GT</u>	Date: <u>1/24/96</u> County: <u>RE</u> State: <u>ME</u>						
Do Normal Circumstances exist on the site? Is the site significantly disturbed (Atypical Situation)? Is the area a potential Problem Area? (If needed; explain on reverse.)	<table style="width: 100%; border: none;"> <tr> <td style="text-align: center;"><input checked="" type="radio"/> Yes</td> <td style="text-align: center;"><input type="radio"/> No</td> </tr> <tr> <td style="text-align: center;"><input type="radio"/> Yes</td> <td style="text-align: center;"><input checked="" type="radio"/> No</td> </tr> <tr> <td style="text-align: center;"><input type="radio"/> Yes</td> <td style="text-align: center;"><input type="radio"/> No</td> </tr> </table>	<input checked="" type="radio"/> Yes	<input type="radio"/> No	<input type="radio"/> Yes	<input checked="" type="radio"/> No	<input type="radio"/> Yes	<input type="radio"/> No
<input checked="" type="radio"/> Yes	<input type="radio"/> No						
<input type="radio"/> Yes	<input checked="" type="radio"/> No						
<input type="radio"/> Yes	<input type="radio"/> No						
Community ID: <u>Signal Branch</u> Transect ID: _____ Plot ID: <u>3</u>							

Western half  
 NAD off stream  
**VEGETATION**

Dominant Plant Species	Stratum	Indicator	
1. <u>Nyssa sylvatica</u>	<u>Tree</u>	<u>FAC</u>	9. _____
2. <u>Vaccinium corymbosum</u>	<u>Shrub</u>	<u>FACW</u>	10. _____
3. <u>Smilax rotundifolia</u>	<u>Vine</u>	<u>FAC</u>	11. _____
4. <u>Acer rubrum</u>	<u>Tree</u>	<u>FAC</u>	12. _____
5. <u>Oxycoccus sensibilis</u>	<u>Herb</u>	<u>FACW</u>	13. _____
6. <u>Osmunda cinnamomea</u>	<u>Herb</u>	<u>FACW</u>	14. _____
7. _____	_____	_____	15. _____
8. _____	_____	_____	16. _____

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 100%

Remarks: \_\_\_\_\_

30% of  
 Fern  
 20% of  
 Fern

**HYDROLOGY**

<input type="checkbox"/> Recorded Data (Describe in Remarks): <input type="checkbox"/> Stream, Lake, or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input checked="" type="checkbox"/> No Recorded Data Available	<b>Wetland Hydrology Indicators:</b> <b>Primary Indicators:</b> <input checked="" type="checkbox"/> Inundated <input checked="" type="checkbox"/> Saturated in Upper 12 Inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input checked="" type="checkbox"/> Drainage Patterns in Wetlands <b>Secondary Indicators (2 or more required):</b> <input type="checkbox"/> Oxidized Root Channels in Upper 12 Inches <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
<b>Field Observations:</b> Depth of Surface Water: <u>surface</u> (in.) Depth to Free Water in Pit: <u>_____</u> (in.) Depth to Saturated Soil: <u>surface</u> (in.)	Remarks: <u>Water table ~ 4-5"</u> <u>throughout NE region</u>

**SOILS**

Map Unit Name (Series and Phase): SaC3 - Sassafras

Drainage Class: \_\_\_\_\_

Field Observations Confirm Mapped Type? Yes  No

taxonomy (Subgroup): Tropic Nat. URB1a

**Profile Description:**

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-10		10YR 3/1	—	—	loamy sand
10-14		10YR 3/3	grey	few	loamy sand
14-20		2.5Y 6/3	yellowish-brown	common	loamy sand

**Hydro Soil Indicators:**

- |   |   |
|---|---|
| <input type="checkbox"/> Histosol                               | <input type="checkbox"/> Concretions  |
| <input type="checkbox"/> Histic Epipedon                        | <input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils |
| <input type="checkbox"/> Sulfidic Odor                          | <input type="checkbox"/> Organic Streaking in Sandy Soils                     |
| <input type="checkbox"/> Aquic Moisture Regime                  | <input type="checkbox"/> Listed on Local Hydric Soils List                    |
| <input type="checkbox"/> Reducing Conditions                    | <input type="checkbox"/> Listed on National Hydric Soils List                 |
| <input checked="" type="checkbox"/> Gleyed or Low-Chrome Colors | <input type="checkbox"/> Other (Explain in Remarks)                           |

Remarks:

**WETLAND DETERMINATION**

Hydrophytic Vegetation Present? <input checked="" type="radio"/> Yes <input type="radio"/> No (Circle)	Is this Sampling Point Within a Wetland? <input checked="" type="radio"/> Yes <input type="radio"/> No (Circle)
Wetland Hydrology Present? <input checked="" type="radio"/> Yes <input type="radio"/> No	
Hydroic Soils Present? <input checked="" type="radio"/> Yes <input type="radio"/> No	

Remarks:



## SECTION II: WETLAND INVENTORY AND UPLAND VEGETATION

### EXISTING CONDITIONS - DRAINAGE AREAS

Baltimore/Washington International Airport (BWI) is located on the upland drainage divide between three tributaries to the Patapsco River. These are Stony Run and Cabin Branch, both direct tributaries to the Patapsco River, and Sawmill Creek which drains to Furnace Branch and then to the Patapsco. The water use classifications are set forth by the Maryland Department of the Environment, Code of Maryland Regulations 26.08.02. Stony Run and its tributaries, Sawmill Creek, and Cabin Branch are classified as Class IV Recreational Trout Waters. Portions of Stony Run and its wetlands, in the vicinity of the Airport, are designated "Wetlands of Special State Concern" by the Maryland Department of Natural Resources.

The Airport property encompasses 21 drainage areas ranging in size from 8 to 700 acres. In the airfield, (as bounded by Aviation Boulevard and Dorsey Road) the drainage areas emanate on airport property and comprise the headwaters of the three tributaries that exit directly from the Airport. One exception is Clark Branch, which feeds into Stony Run, with half of its drainage area comprising off-site property. However, the stream itself begins on Airport property.

This section includes an inventory of the stream and wetland communities found on the BWI Airport property. This section also includes a general description of the upland vegetation, including the grassed areas of the infield areas and Clear Zones, deciduous forest, pine forest, and mixed deciduous/pine forest. Further detailed information and mapping of the forested areas is available in the BWI Forest Stand Delineation Report which is currently being reviewed by the Maryland Department of Natural Resources as part of the approval process.

## WETLAND DELINEATION METHODOLOGY

Potential wetlands were located using National Wetlands Inventory (NWI) maps, USGS quadrangle maps, and topography maps. These wetlands were then flagged in the field in accordance with the Corps of Engineers Wetlands Delineation Manual (1987) (hereafter referred to as the manual) routine on-site determination method. Under this manual, three criteria must be met for an area to be determined a wetland: presence of hydric soils, a dominance of hydrophytic vegetation, and a hydrologic connection. The manual generally requires that a minimum of one positive wetland indicator from each parameter (hydrology, soil, and vegetation) be found on the site to make a positive wetland determination.

Wetlands are defined in the Federal regulations as "waters of the United States," a broad term that also includes streams, lakes, ponds and rivers, among others. Intermittent as well as perennial streams are included as jurisdictional "waters." (Streams that usually have flow throughout the year but are dry during drought years are generally considered perennial.) This Wetlands Management Plan describes all "waters of the United States" that exist on the site, both vegetated wetlands and other waters of the United States.

Although procedures for making the wetland determinations in the field are standardized, wetlands are often transitional areas between upland habitats and aquatic systems, and judgments are sometimes required as to the location of the wetland/upland boundary. The wetland delineation that was made for this study was based on use of the 1987 manual and our best professional judgment. The wetland boundary is subject to modification by the regulatory agencies. The final wetland determination is the authority of the Corps of Engineers and the Maryland Department of the Environment.

For purposes of describing the wetlands and other jurisdictional waters, the Classification of Wetlands and Deepwater Habitats of the United States (Cowardin, et al, 1979)

was used. This is a hierarchial system which provides a uniformity of concepts and terms used to define wetlands according to hydrologic, geomorphologic, chemical and biological factors. Figure 2 is the National Wetlands Inventory Map for the BWI area.

## VEGETATION

Plant species observed in the wetlands at the site were identified and the wetland indicator status for each species was determined from the National List of Plant Species that Occur in Wetlands: Northeast (Region 1) (May 1988). The indicator status designates the probability of occurrence of a given plant species in wetlands in the northeast region of the United States. Table 1 is a listing of the indicator status designations. Table 2 is a list of the wetlands plant species found on BWI Property.

**TABLE 1**

**WETLAND PLANT SPECIES INDICATOR STATUS**

Indicator Category	Indicator Symbol	Definition
Obligate Wetland Plants	OBL	Plants that occur almost always (Estimated probability > 99 percent in wetlands under natural conditions, but which may also occur rarely (estimated probability < 1 percent) in non-wetlands. Examples: <i>Typha latifolia</i> , <i>Polygonum sagittatum</i>
Facultative Wetland Plants	FACW	Plants that usually occur (estimated probability > 67 percent to 99 percent) in wetlands, but also occur (estimated probability 1 percent to 33 percent in non-wetlands). Examples: <i>Clethra alnifolia</i> , <i>Platanus occidentalis</i> .
Facultative Plants	FAC	Plants with a similar likelihood (estimated probability 33 percent to 67 percent) of occurring in both wetlands and non-wetlands. Examples: <i>Acer rubrum</i> , <i>Smilax rotundifolia</i> .
Facultative Upland Plants	FACU	Plants that occur sometimes (estimated probability 1 percent to < 33 percent) in wetlands, but occur more often (estimated probability > 67 percent to 99 percent) in non-wetlands. Examples: <i>Quercus rubra</i> , <i>Liriodendron tulipifera</i> .

Source: Corps of Engineers Wetlands Delineation Manual (January 1987)

**TABLE 2**  
**SUMMARY OF WETLAND PLANT SPECIES OCCURRING**  
**WITHIN STUDY LIMITS**

Common Name	Scientific Name	Indicator Status
<b>GRASSES</b>		
Sedges	<i>Carex species</i>	Unknown
Lurid Sedge	<i>Carex lurida</i>	OBL
Tussock Sedge	<i>Carex stricta</i>	OBL
Straw-colored flat sedge	<i>Cyperus strigosus</i>	FACW
Deer-Tongue Grass	<i>Dicanthelium clandestinum</i>	FAC+
Spike Rush	<i>Eleocharis species</i>	Unknown
Rushes	<i>Juncus species</i>	Unknown
Soft Rush	<i>Juncus effusus</i>	FACW
Canada Rush	<i>Juncus canadensis</i>	OBL
Slender Rush	<i>Juncus tenuis</i>	FAC
Green Bulrush	<i>Scirpus atrovirens</i>	OBL
Switchgrass	<i>Panicum virgatum</i>	FAC
Common Reed	<i>Phragmites australis</i>	FACW
Woolgrass	<i>Scirpus cyperinus</i>	FACW+
Bur-reed	<i>Sparganium americanum</i>	OBL
Narrow-leaved Cattail	<i>Typha angustifolia</i>	OBL
Broad-leaved Cattail	<i>Typha latifolia</i>	OBL
<b>FERNS</b>		
Grape Fern	<i>Botrychium lanceolatum</i>	FACW
Sensitive Fern	<i>Onoclea sensibilis</i>	FACW
Cinnamon Fern	<i>Osmunda cinnamomea</i>	FACW
Marsh Fern	<i>Thelypteris thelypteroides</i>	FACW+

Common Name	Scientific Name	Indicator Status
Netted Chainfern	<i>Woodwardia areolata</i>	FACW
HERBS AND VINES		
Water Plantain	<i>Alisma triviale</i>	Not listed
Garlic Mustard	<i>Alliaria petiolata</i>	FACU -
Potato Bean	<i>Pipios americana</i>	Not listed
New England Aster	<i>Aster novae-angliae</i>	FACW
Swamp Aster	<i>Aster puniceus</i>	OBL
Devil's Beggartick	<i>Bidens frondosa</i>	FACW
False Nettle	<i>Boehmeria cylindrica</i>	FACW +
Turtlehead	<i>Chelone glabra</i>	OBL
Virgin's Bower	<i>Clematis virginiana</i>	FAC
Asiatic Dayflower	<i>Commelina communis</i>	FAC
Common Dodder	<i>Cuscuta gronovii</i>	NOT LISTED
Wild Cucumber	<i>Echinocytis lobata</i>	FAC
Boneset	<i>Eupatorium perfoliatum</i>	FACW +
Sweet Joe-pye-weed	<i>Eupatoriadelphus purpureus</i>	FAC
Bedstraw	<i>Galium species</i>	Unknown
Rough Avens	<i>Geum virginianum</i>	FAC
Jewelweed	<i>Impatiens capensis</i>	FACW
Butter and Eggs	<i>Linaria vulgaris</i>	Not listed
Japanese Honeysuckle	<i>Lonicera japonica</i>	FAC
Seedbox	<i>Ludwigia alternifolia</i>	FACW +
Climbing Hempweed	<i>Mikania scandens</i>	FACW +
Virginia Creeper	<i>Parthenocissus quinquefolia</i>	FACU
Clear Weed	<i>Pilea pumila</i>	FACW
Halberd-leaved Tearthumb	<i>Polygonum arifolium</i>	OBL
Swamp Smartweed	<i>Polygonum hydropiperoides</i>	OBL

Common Name	Scientific Name	Indicator Status
Pennsylvania Smartweed	<i>Polygonum pennsylvanicum</i>	FACW
Water Smartweed	<i>Polygonum punctatum</i>	OBL
Arrow-leaved Tearthumb	<i>Polygonum sagittatum</i>	OBL
Maryland Meadowbeauty	<i>Rhexia marina</i>	OBL
Common Greenbriar	<i>Smilax rotundifolia</i>	FAC
Goldenrods	<i>Solidago species</i>	Unknown
Trading Wildbean	<i>Strophostyles helvola</i>	FACU
Skunk Cabbage	<i>Symplocarpus foetidus</i>	OBL
Poison Ivy	<i>Toxicodendron radicans</i>	FAC
Blue Vervain	<i>Verbena hastata</i>	FACW+
New York Ironweed	<i>Vernonia noveboracensis</i>	FACW+
Violets	<i>Viola species</i>	Unknown
River Grape	<i>Vitis riparia</i>	FACW
<b>SHRUBS</b>		
Speckled Alder	<i>Alnus rugosa</i>	FACW
Eastern False-Willow	<i>Baccharis halimifolia</i>	FACW
Buttonbush	<i>Cephalanthus occidentalis</i>	OBL
Sweet Pepperbush	<i>Clethra alnifolia</i>	FACW
Silky Dogwood	<i>Cornus amomum</i>	FACW
American Holly	<i>Ilex opaca</i>	FACU+
Winterberry	<i>Ilex verticillata</i>	FACW
Spice Bush	<i>Lindera benzoin</i>	FACW
Multiflora Rose	<i>Rosa multiflora</i>	FAC
Swamp Rose	<i>Rosa palustris</i>	OBL
Brambles	<i>Rubus species</i>	Unknown
Elderberry	<i>Sambucus canadensis</i>	FACW
Highbush Blueberry	<i>Vaccinium corymbosum</i>	FACW

Common Name	Scientific Name	Indicator Status
Southern Arrow-wood	<i>Viburnum dentatum</i>	FAC
TREES		
Box-elder Maple	<i>Acer negundo</i>	FAC+
Red Maple	<i>Acer rubrum</i>	FAC
Silver Maple	<i>Acer saccharinum</i>	FACW
River Birch	<i>Betula nigra</i>	FACW
Ironwood	<i>Carpinus caroliniana</i>	FAC
Persimmon	<i>Diospyros virginiana</i>	FAC
Green Ash	<i>Fraxinus pennsylvanica</i>	FACW
Sweet gum	<i>Liquidambar styraciflua</i>	FAC
Sweetbay	<i>Magnolia virginiana</i>	FACW
Black Gum	<i>Nyssa sylvatica</i>	FAC
Loblolly Pine	<i>Pinus taeda</i>	FAC
Sycamore	<i>Platanus occidentalis</i>	FACW
Black Cherry	<i>Prunus serotina</i>	FACU
Pin Oak	<i>Quercus palustris</i>	FACW
Willow Oak	<i>Quercus phellos</i>	FAC+
Winged Sumac	<i>Rhus copallinum</i>	NI
Red Oak	<i>Quercus rubra</i>	FACU
Weeping Willow	<i>Salix babylonica</i>	FACW
Black Willow	<i>Salix nigra</i>	FACW



## SOILS

The soils of wetlands are hydric. A hydric soil is a soil that is saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions that favor the growth and regeneration of hydrophytic vegetation. A hydric soil may either be drained or undrained, although a drained hydric soil may not continue to support hydrophytic vegetation. Only when a hydric soil supports hydrophytic vegetation and the area has indicators of wetland hydrology may the soil be referred to as a "wetland" soil.

During this investigation soil cores were taken using soil probes and spades to a depth of about 18 inches. The soils were examined at each sample location to compare their characteristics immediately below the A-horizon or 10 inches (whichever was shallower) with the hydric soil indicators described in Part III of the manual. These characteristics include, in order of decreasing reliability, a.) Organic Soils (Histosols), b.) Histic epipedons, c.) Sulfidic material d.) aquic or peraquic moisture regime, e.) Reducing soil conditions, f.) Soil color, including gleyed soils and soils with bright mottles and low matrix chromas, g.) Soil appearing on the hydric soils list, and h.) Iron and manganese concretions. The "Munsell Soil Color Charts" were used for identification of hydric soil color, chroma, and value. Table 3 is a list of the soil types that exist on the BWI property. Figure 3 is the Anne Arundel County Soil Survey Map for the area.

**TABLE 3**

**SUMMARY OF SOILS SERIES OCCURRING  
WITHIN STUDY LIMITS**

Symbol	Soil Series	Description	Hydric
Bm	Bibb	Silt loam	X
CaC3	Chillum	Silt loam	
CcB2	Christiana	Silt loam	
C5C2,C5D2	Croom	Gravelly Sandy Loam	
CtD	Croom-Urban land		
CuB,CuD	Cut & Fill		
EK	Elktron	Sandy loam	X
EoB	Evesboro	Loamy sand	
ErB, Erc	Evesboro	Loamy sand	
Esc, EsE	Evesboro & Galestown	Loamy sand	
Fa	Fallsington	Sandy loam	X
GaB	Galestown	Loamy sand	
Gp	Gravel/Borrow pit		
Ks	Klej	Loamy Sand	X
Mt	Mixed Alluvial Land		X
MVC2,MvD2	Monmouth	Fine Sandy Loam	
MyB,MyC,MyP	Muirkirk	Loamy Sand	
MzB, MzD	Muirkirk-Urban Land		
RuB2, RuC2	Rumford	Loamy Sand	
RUD2,RuC3	Rumford	Loamy Sand	
SaB2, SaC2, SaD3	Sassafras	Fine sandy loam	
SAB	Sassafras-Urban Land		
WdB	Woodstown	Sandy loam	

## HYDROLOGIC INDICATORS

The term "wetland hydrology" encompasses all hydrologic characteristics of areas that are periodically inundated or have soils saturated to the surface at some time during the growing season.

A hydrologic connection is the driving force creating wetlands and is often the most difficult parameter to determine in the field. It is defined as permanent or periodic inundation or soil saturation for a significant period (seven days or more) during the growing season. The duration of wetness is the most important factor in the definition: Soils must be wet for a long enough period to encourage reduced soil conditions (hydric soils) and therefore growth of specially adapted plants (hydrophytes). Other examples of hydrology may include runoff, flooding, tides, groundwater table, perennial streams, or a combination of these factors.

Indicators of wetland hydrology include drainage patterns, drift lines, sediment deposition, watermarks, stream gauge data and flood predictions, historic records, visual observation of saturated soils, and visual observation of inundation. Any of these indicators may be evidence of wetland hydrologic characteristics. Indicators of wetland hydrology observed on the site were noted during the field investigation, and will be discussed further in the following subsection.

The wetlands flagged and subsequently surveyed at BWI met all of the above parameters. Most were related directly to perennial streams in the Stony Run or Sawmill Creek watersheds. Others were drainage ditches or low-lying areas with poor drainage resulting from past grading and construction and the creation of stormwater management facilities. The limits of State and Federal regulatory jurisdiction within the stormwater management facilities need to be discussed with MDE and the Corps. For purposes of this

report the stormwater management facilities have been designated as wetlands on an interim basis. Each of these areas is described in the following subsection.

### **WETLAND DESCRIPTIONS**

Following are descriptions of each of the eleven wetland systems identified on BWI property. The general character of each wetland is described, including vegetation, soils, hydrology, and the wetland classification. The Classification of Wetlands and Deepwater Habitats (Cowardin et al., 1979), adopted by the U.S. Fish & Wildlife Service, was used to classify each wetland. The approximate acreage of each wetland system is provided in each discussion as well as on the Wetlands Location Map (Appendix B). The Wetlands Location Map also depicts the surveyed boundaries for each wetland system. Wetland Delineation Field Data Sheets are provided in Appendix A for additional detail concerning each wetland system.

### Wetland P (Phelps Branch)

Phelps Branch is part of the Sawmill Creek watershed. It is dominated by an intermittent stream system which originates from the forested areas in the southeast portion of the Airport Operations Area (AOA). The wetland system is supported by groundwater and surface water runoff and appears to originate from a seep. The headwaters is a wide vegetated area which progresses downstream to a narrow channel. Total acreage, all of which is contained on BWI property, is 1.1 acres.

The Phelps Branch wetland system is predominantly scrub-shrub. There are areas where the vegetation is confined to the streambanks, and areas where scrub-shrub vegetation has established adjacent to the streambanks. Table 8 presents the dominant vegetation for the scrub-shrub type of wetland classification in the Phelps Branch wetland system.

The Phelps Branch wetland system appears healthy. There exists a variety of wetland habitat types.

Although small, the Phelps Branch wetland likely provides typical scrub-shrub wetland functions, i.e., sediment retention and nutrient transformation, wildlife habitat, and production export.

The soils indicative to the Phelps Branch wetland system are Bibb Series. These soils are consistently poorly drained, silty soils, which exhibit a dark grayish-brown to light olive-brown color. During the time of field sampling, there was flowing water in the main channel area, water-stained leaves, shallow roots, and the upper 12 inches were saturated. The soils immediately below the "A" horizon were a matrix of 10YR 4/2 with mottles of 10YR 6/8.

**TABLE 8**

**SUMMARY OF WETLAND CLASSIFICATION TYPES AND DOMINANT  
VEGETATION FOR WETLAND P (PHELPS BRANCH)**

<b>Wetland Classification</b>	<b>Dominant Vegetation (common name)</b>	<b>Dominant Vegetation (scientific name)</b>
PSS1A-Palustrine, Scrub- shrub, Broad-leaved deciduous, Temporarily flooded	Sweet pepperbush Sycamore Common spicebush Red maple Black gum Common winterberry Arrowwood Sweetbay magnolia	<i>Clethra alnifolia</i> <i>Platanus occidentalis</i> <i>Lindera benzoin</i> <i>Acer rubrum</i> <i>Nyssa sylvatica</i> <i>Ilex verticillata</i> <i>Viburnum dentatum</i> <i>Magnolia virginiana</i>

### Wetland F (Fork Branch)

Fork Branch is a tributary of the Sawmill Creek watershed. It is located west and east of the 33L end of runway 15R-33L. The headwaters begin in an area 500 feet west of runway 33L and 600 feet northwest of Taxiway T. A storm drain system takes the surface water under the runway to a large ditch located adjacent to the 33L runup block. This ditch then runs in a southerly direction to an emergent wetland area just inside the AOA security fence adjacent to Dorsey Road. The water is then piped under Dorsey Road to a large pond on the south side of Dorsey Road and east of Friendship Park. Total acreage, all of which is contained on BWI property, is 2.4 acres.

The Fork Branch wetland system is predominantly emergent and scrub-shrub. There are areas where the vegetation is confined to the drainage ditch and areas of retention. The Fork Branch wetland system contains palustrine systems that are classified as scrub-shrub and emergent. Table 9 presents the dominant vegetation for the scrub-shrub and emergent type of wetland classification in the Fork Branch wetland system.

The Fork Branch wetland system appears healthy. There exists a variety of wetland habitat types.

The wetlands associated with Fork Branch do not provide significant wetland function. However, the ditches containing emergent wetland vegetation and the pond south of Dorsey road do provide the water quality functions of sediment retention and nutrient removal.

The soils indicative to the Fork Branch wetland system are Bibb Series. These soils are consistently poorly drained, silty soils, which exhibit a dark grayish-brown to light olive-brown color. During the time of field sampling, there was flowing water in the main channel area, water marks, drift lines, and the upper 12 inches were saturated. The soils immediately

below the "A" horizon were a matrix of 10YR 5/1 to 10YR 2/1 with common but faint mottling of 10YR 6/5.



**TABLE 9**

**SUMMARY OF WETLAND CLASSIFICATION TYPES AND DOMINANT  
VEGETATION FOR WETLAND F (FORK BRANCH)**

<b>Wetland Classification</b>	<b>Dominant Vegetation (common name)</b>	<b>Dominant Vegetation (scientific name)</b>
<b>PEM1E-Palustrine, Emergent, Broad-leaved deciduous, Seasonally flooded</b>	Broad-leaved cattail Soft rush Japanese honeysuckle Sedge species Arrow-leaved tearthumb	<i>Typha latifolia</i> <i>Juncus effusus</i> <i>Lonicera japonica</i> <i>Carex sp.</i> <i>Polygonum sagittatum</i>
<b>PSS1E-Palustrine, Scrub- shrub, Broad-leaved deciduous, Seasonally flooded</b>	Red maple Silky dogwood Black gum Sycamore Black willow	<i>Acer rubrum</i> <i>Cornus amomum</i> <i>Nyssa sylvatica</i> <i>Platanus occidentalis</i> <i>Salix nigra</i>

### Wetland C (Clark Branch)

Clark Branch is a perennial stream system located in the southwest corner of the AOA area of BWI property. The wetland system begins as a drainage swale near the AOA security fence along Dorsey Road. As the stream progresses westerly, the wetland area broadens out to include several small tributaries and/or drainage ditches. The stream then enters a very large retention area which is possibly an old pond that has filled with sediment. Once the stream leaves the retention area, it narrows down again. It then converges with the Hawkins Branch wetland system between Camp Meade Road and the AOA security fence, passes under MD Route 170 (Camp Meade Road), and finally terminates in a retention area between Camp Meade Road and the AMTRAK line. The Clark Branch wetland system also includes a small drainage swale located approximately 2,000 feet southwest of runway 4, east of the central wetland system. The area adjacent to the swale is a mowed field. The total acreage, all of which is located on BWI property, is 25.1 acres.

The Clark Branch wetland system is predominantly forested. There are areas that are scrub-shrub or emergent. The Clark Branch wetland system contains palustrine sections that are classified as forested, scrub-shrub, and emergent. Table 11 presents the dominant vegetation for the forested, scrub-shrub, and emergent type of wetland classification in the Clark Branch wetland system.

The Clark Branch wetland system appears healthy. There exists a variety of wetland habitat types.

The Clark Branch wetland system is the largest on the airport property, with a high wetland class richness (the system contains several wetland classes). These wetlands provide most wetland functions; floodflow attenuation, sediment retention, nutrient removal, production export, and wildlife habitat.

The soils indicative to the Clark Branch wetland system are Bibb Series. These soils are consistently poorly drained, silty soils, which exhibit a dark grayish-brown to light olive-brown color. During the time of field sampling the upper 12 inches were saturated, there were drift lines, and water marks. The soil matrix was 2.5Y 4/1 with mottles of 7.5YR 4/4.

**TABLE 11**

**SUMMARY OF WETLAND CLASSIFICATION TYPES AND DOMINANT  
VEGETATION FOR WETLAND C (CLARK BRANCH)**

<b>Wetland Classification</b>	<b>Dominant Vegetation (common name)</b>	<b>Dominant Vegetation (scientific name)</b>
<b>PFO1A</b> -Palustrine, Forested, Broad-leaved deciduous, Temporarily flooded	Red maple Black gum Sweet pepperbush Sycamore Pin oak	<i>Acer rubrum</i> <i>Nyssa sylvatica</i> <i>Clethra alnifolia</i> <i>Platanus occidentalis</i> <i>Quercus palustris</i>
<b>PSS1A</b> -Palustrine, Scrub- shrub, Broad-leaved deciduous, Temporarily flooded	Black willow Sweet pepperbush Highbush blueberry Speckled alder	<i>Salix nigra</i> <i>Clethra alnifolia</i> <i>Vaccinium corymbosum</i> <i>Alnus rugosa</i>
<b>PEM1A</b> -Palustrine, Emergent, Broad-leaved deciduous, Temporarily flooded	Soft rush Sedge species Slender rush	<i>Juncus effusus</i> <i>Carex sp.</i> <i>Juncus tenuis</i>

## Wetland H (Hawkins Branch)

Hawkins Branch is a perennial stream system located in the southwest corner of the AOA area of BWI property. The wetland system is fed by groundwater and surface water runoff from the surrounding forest. The headwaters are broad with an intermittent stream which becomes a perennial stream as it progresses westerly. The wetland area occasionally broadens out to include braided channel areas but the main channel is typically single-channel with a rocky bed. The stream finally converges with the Clark Branch wetland system between Camp Meade Road and the AOA security fence. The total acreage, all of which is located on BWI property, is 9.0 acres.

The Hawkins Branch wetland system is predominantly forested. There are areas that are emergent. The Hawkins Branch wetland system contains palustrine systems that are classified as forested and emergent. Table 12 presents the dominant vegetation for the forested and emergent type of wetland classification in the Hawkins Branch wetland system.

The Hawkins Branch wetland system appears healthy. There exists a variety of wetland habitat types. Wetland functions of Hawkins Branch include floodflow alteration, sediment retention, nutrient removal and transformation, production export, and wildlife habitat.

The soils indicative to the Hawkins Branch wetland system are Bibb Series. These soils are consistently poorly drained, silty soils, which exhibit a dark grayish-brown to light olive-brown color. During the time of field sampling the upper 12 inches were saturated, and hydrologic indicators included drainage patterns in the wetland, and water-stained leaves. The soil matrix was 2.5Y 4/2 with mottles of 7.5YR 4/2.

**TABLE 12**

**SUMMARY OF WETLAND CLASSIFICATION TYPES AND DOMINANT  
VEGETATION FOR WETLAND H (HAWKINS BRANCH)**

<b>Wetland Classification</b>	<b>Dominant Vegetation (common name)</b>	<b>Dominant Vegetation (scientific name)</b>
<b>PFO1A</b> -Palustrine, Forested, Broad-leaved deciduous, Temporarily flooded	Red maple Black gum Loblolly pine Sweetbay magnolia Slippery elm	<i>Acer rubrum</i> <i>Nyssa sylvatica</i> <i>Pinus taeda</i> <i>Magnolia virginiana</i> <i>Ulmus rubra</i>
<b>PEM1E</b> -Palustrine, Emergent, Broad-leaved deciduous, Seasonally flooded	Soft rush Sensitive fern Slender rush Arrow-leaved tearthumb Broad-leaved cattail	<i>Juncus effusus</i> <i>Onoclea sensibilis</i> <i>Juncus tenuis</i> <i>Polygonum sagittatum</i> <i>Typha latifolia</i>

### Wetland S (Signal Branch)

Signal Branch is an intermittent stream system located on the west side of the airport, south of the 10 end of runway 10-28. The stream begins as a broad, flat area fed by surface runoff and groundwater from the surrounding forest. The stream has a well-defined stream channel flowing in a westerly direction under MD Route 170 (Camp Meade Road). The Signal Branch wetland system is the northern-most tributary, on BWI property, to Stony Run. The total acreage, all of which is located on BWI property, is 1.2 acres.

The Signal Branch wetland system is predominantly forested. There are areas that are scrub-shrub or emergent. The Signal Branch wetland system contains palustrine sections that are classified as forested, scrub-shrub, and emergent. Table 13 presents the dominant vegetation for the forested, scrub-shrub, and emergent type of wetland classification in the Signal Branch wetland system.

The Signal Branch wetland system appears healthy. There exists a variety of wetland habitat types.

Signal Branch is a small tributary to Stony Run, with a narrow palustrine forested wetland associated with portions of the stream. The wetlands likely provide production export, sediment trapping, nutrient removal, and wildlife functions.

The soils indicative to the Signal Branch wetland system are Sassafras Series and Bibb Series. During the time of field sampling the upper 12 inches were saturated, there were drainage patterns in the wetland, and water marks. Bibb Series soils are consistently poorly drained, silty soils, which exhibit a dark grayish-brown to light olive-brown color. The soil matrix was 10YR 4/1 with mottles of 10YR 3/6. Sassafras Series soils are fine sandy loam that are typically deep and well-drained. The matrix was 10YR 6/1 with mottles of 10YR 6/8.

**TABLE 13**

**SUMMARY OF WETLAND CLASSIFICATION TYPES AND DOMINANT  
VEGETATION FOR WETLAND S (SIGNAL BRANCH)**

<b>Wetland Classification</b>	<b>Dominant Vegetation (common name)</b>	<b>Dominant Vegetation (scientific name)</b>
<b>PFO1E</b> -Palustrine, Forested, Broad-leaved deciduous, Seasonally flooded	Red maple Box elder Maple Black gum Pin oak	<i>Acer rubrum</i> <i>Acer negundo</i> <i>Nyssa sylvatica</i> <i>Quercus palustris</i>
<b>PSS1E</b> -Palustrine, Scrub- shrub, Broad-leaved deciduous, Seasonally flooded	Black willow Highbush blueberry Speckled alder Red maple Arrowwood	<i>Salix nigra</i> <i>Vaccinium corymbosum</i> <i>Alnus rugosa</i> <i>Acer rubrum</i> <i>Viburnum dentatum</i>
<b>PEM1E</b> -Palustrine, Emergent, Broad-leaved deciduous, Seasonally flooded	Sensitive fern Marsh fern Halbred-leaf tearthumb	<i>Onoclea sensibilis</i> <i>Thelypteris thelypteroides</i> <i>Polygonum arifolium</i>



### Wetland SR (Stony Run)

Stony Run is a perennial stream system located parallel to and west of the AMTRAK line. Parts of the Stony Run wetland system are on BWI property. The Stony Run wetland system on BWI property begins just south of Stony Run Road. The stream runs in a north-south direction and has a defined channel in some areas and wide retention areas in others. Stony Run has a 100-year floodplain associated with the stream of which 17.6 acres is on airport property. The total acreage of the Stony Run wetland system on BWI property is 1.8 acres.

Table 14 presents the dominant vegetation for the forested and scrub-shrub type of wetland classification in the Stony Run wetland system.

The Stony Run wetland system appears healthy. There exists a variety of wetland habitat types.

Like the Clark Branch system, the Stony Run system has a high wetland class richness, with palustrine forested and palustrine scrub-shrub wetlands being the most dominant. These wetlands provide floodflow attenuation, production export, sediment retention, nutrient removal, and fish and wildlife support functions.

The soils indicative to the Stony Run wetland system are Bibb Series. These soils are consistently poorly drained, silty soils, which exhibit a dark grayish-brown to light olive-brown color. During the time of field sampling the upper 12 inches were saturated and there were oxidized root channels.

**TABLE 14**

**SUMMARY OF WETLAND CLASSIFICATION TYPES AND DOMINANT  
VEGETATION FOR WETLAND SR (STONY RUN)**

<b>Wetland Classification</b>	<b>Dominant Vegetation (common name)</b>	<b>Dominant Vegetation (scientific name)</b>
<b>PFO1A-Palustrine, Forested, Broad-leaved deciduous, Temporarily flooded</b>	Tulip poplar Red maple Loblolly pine Sweet pepperbush Arrowwood Pin oak	<i>Liriodendron tulipifera</i> <i>Acer rubrum</i> <i>Pinus taeda</i> <i>Clethra alnifolia</i> <i>Viburnum dentatum</i> <i>Quercus palustris</i>
<b>PSS1E-Palustrine, Scrub- shrub, Broad-leaved deciduous, Seasonally flooded</b>	Black willow Sweet pepperbush Arrowwood Grape	<i>Salix nigra</i> <i>Clethra alnifolia</i> <i>Viburnum dentatum</i> <i>Vitis riparia</i>

**APPENDIX G**

**EXCERPTS FROM  
BWI AIR QUALITY PLAN  
SEPTEMBER 1994**

### III. PREVIOUS EMISSIONS ESTIMATES AND AIR QUALITY ANALYSES

A number of air quality assessments have been conducted previously for BWI in connection with the Airport Master Plan, Master Plan Updates and various other terminal area improvements. These studies are summarized in Table 3 and are briefly discussed below.

#### A. Emission Estimates

First, the 1975 *BWI Airport Master Plan* included an *Environmental Report* that contained emissions inventories for the years 1975, 1980, 1985 and 1995. Aircraft, aircraft service vehicle, motor vehicle and space heating emissions were analyzed and the results are summarized in Table 4. This assessment concluded that (1) by 1995, BWI would account for less than five percent of the total HC emissions, less than three percent of the total PM emissions and less than two percent of the CO and NO<sub>x</sub> emissions within Anne Arundel County; and (2) airport-related emissions would not create violations of the NAAQS for CO, HC, NO<sub>x</sub> or particulates at the BWI boundary.

An air quality assessment was prepared for the 1987 *Master Plan Update Environmental Report*. This assessment concluded that the extension of Runway 15L/33R was in conformance with the Maryland SIP and that no significant air quality impacts were expected in connection with this airfield improvement.

An *Air Quality Technical Report* was also prepared in 1987 in order to evaluate potential air quality impacts in connection with four airport expansion alternatives proposed in the 1987 *Master Plan Update*. Subsequent air quality assessments contained in the 1989 *Environmental Impact Statement* for the Runway 15L/33R extension and the 1993 *Finding of No Significant Impact* for the Runway 10/28 improvements are based on the results of this 1987 air quality technical report. The report included emissions inventories for VOC, NO<sub>x</sub>, CO, TSP and SO<sub>2</sub> and microscale dispersion modeling for CO for the year 2005. Notably, the 1987 *Master Plan Update* "Concept 3" alternative corresponds to the current BWI airfield layout configuration and "Concept 6" involves the addition of a new parallel Runway

TABLE 3

**PREVIOUS EMISSIONS INVENTORIES AND AIR QUALITY ANALYSES**  
**Baltimore/Washington International Airport**  
**Air Quality Plan**

Assessment	Year	Essential Elements	Findings
Airport Master Plan	1975	Emission inventories for 1975, 1980, 1985, and 1995.	BWI < 5% HC, < 3% PM, < 2% CO and NO <sub>x</sub> of county totals.
Master Plan Update for GA Runway Extension	1987	Preliminary information and data contained in 1987 Air Quality Technical Report.	GA runway extension in conformance with SIP.
Air Quality Technical Report	1987	Emission inventories of VOC, NO <sub>x</sub> , CO, TSP, and SO <sub>2</sub> ; dispersion modeling for CO.	All Master Plan Update proposed improvements including new Runway 10/28 in conformance with SIP.
Runway 15L/33R Extension EIS	1989	Assessment results based on 1987 Air Quality Technical Report cited above.	Same as above.
Main Terminal CO Monitoring Program	1989	Evaluation of planned modification to main terminal on air quality.	CO levels did not exceed EPA or OSHA standards.
MDE Aircraft Fuel Deposition Study	1990	Analysis of air samples from three sites near BWI.	No evidence of impacts from BWI activity.
Existing Runway 10/28 Improvements FONSI	1993	Same as above.	Same as above.
Pier "C" Extension Categorical Exclusion	1993	Emission inventory of additional aircraft operations.	Expected increase in VOC's < 0.05 ton/day and NO <sub>x</sub> < 1.0 ton/day.

Source: Greiner, Inc. 1994

TABLE 4

1975 BWI AIRPORT MASTER PLAN EMISSIONS ESTIMATES<sup>a</sup>  
Baltimore/Washington International Airport  
Air Quality Plan

Pollutant	Year			
	1975 <sup>b</sup>	1980 <sup>b</sup>	1985 <sup>b</sup>	1995 <sup>b</sup>
Carbon monoxide <sup>c</sup>	1,184	1,237	1,564	1,785
Total hydrocarbons <sup>c</sup>	406	432	536	546
Nitrogen oxides <sup>c</sup>	583	870	1,175	1,724
Solid particulates <sup>c</sup>	66	82	104	167

<sup>a</sup> This table is provided to show the results of former BWI air quality studies conducted prior to this Air Quality Plan.

<sup>b</sup> Emissions reported in tons/year.

<sup>c</sup> Includes emissions from aircraft, aircraft service vehicles, motor vehicles and space heating units.

Source: 1975 BWI Airport Master Plan - Environmental Report.

10/28. The year 2005 emissions inventory for these scenarios is reproduced as Table 5. This 1987 report concluded that none of the proposed Master Plan Update projects would hinder the attainment or maintenance of the NAAQS and, therefore, were in conformance with the SIP.

Finally, in 1993, a Categorical Exclusion for the Pier C Extension project was prepared and included an inventory of aircraft emissions at BWI. The predicted daily increases in VOC and NO<sub>x</sub> emissions were compatible with the revised SIP, according to a review by MDE and MAA.

**B. Air Monitoring**

Two air monitoring projects have also been conducted in the vicinity of BWI.

A short-term (32-day) motor vehicle traffic and air monitoring program was conducted at the BWI Main Terminal in 1989. The purpose of this study was to help evaluate the potential impact on air quality associated with planned modifications to the terminal building. The results indicated that CO levels were within the NAAQS and OSHA standards for this pollutant in this area.

In 1990, the MDE collected air samples from three sites located around the airport in order to assess the effects of aircraft fuel on nearby neighborhoods. The study provided no evidence that airport traffic was causing a deposition of oily substances nor were hydrocarbon levels elevated above background concentrations.

TABLE 5

1987 AIR QUALITY TECHNICAL REPORT 2005 AIR EMISSIONS SUMMARY<sup>a</sup>  
 Baltimore/Washington International Airport  
 Air Quality Plan

Source	Pollutant	Emissions (tons per year)	
		Current Airfield <sup>b</sup>	With New Runway 10/28 <sup>c</sup>
Aircraft	TSP	23	25
	SO <sub>2</sub>	57	59
	CO	1,414	1,446
	VOC	431	433
	NO <sub>x</sub>	653	709
Heating plant	TSP	1	1
	SO <sub>2</sub>	--	--
	CO	2	2
	VOC	1	1
	NO <sub>x</sub>	11	11
Storage tanks	VOC	45	47
Parking lots and garages	TSP	1	1
	SO <sub>2</sub>	1	1
	CO	490	503
	VOC	60	62
	NO <sub>x</sub>	14	14
Motor vehicles <sup>d</sup>	TSP	163	170
	SO <sub>2</sub>	98	102
	CO	6,793	7,076
	VOC	1,066	1,110
	NO <sub>x</sub>	1,308	1,362
Service vehicles	TSP	5	5
	SO <sub>2</sub>	2	2
	CO	1,319	1,367
	VOC	319	331
	NO <sub>x</sub>	117	116
All sources	TSP	193	202
	SO <sub>2</sub>	158	164
	CO	10,018	10,394
	VOC	1,922	1,984
	NO <sub>x</sub>	2,103	2,212

<sup>a</sup> This table is provided to show the results of former BWI air quality studies conducted prior to this Air Quality Plan.

<sup>b</sup> Corresponds to the current BWI airfield layout. Emissions are based on 459,364 operations per year.

<sup>c</sup> Includes addition of a new runway 10L/28R to the current airfield layout. Emissions are based on 477,330 operations/year.

<sup>d</sup> Consists of travel on all roads within 3 miles of the airport.

Note: The 1994 revised estimate for the year 2005 is 376,695 operations/year.

Source: BWI Expansions - Air Quality Technical Report, 1987.



#### IV. SOURCES OF EMISSIONS

On an area-wide basis, airports are generally not considered to be significant sources of air emissions in comparison to more traditional "smoke-stack" industries, power plants, and other mobile sources such as motor vehicles. However, based on an in-the-field survey, interviews with knowledgeable MAA staff, and an analysis of routine airport operations, several sources of air emissions have been identified in connection with the operation of BWI.

For the most part, these emissions comprise by-products of fuel combustion in aircraft; aircraft ground support equipment; and airport patron, employee and cargo motor vehicles. Emissions associated with a small assortment of other airport support services also occur. These various sources and emissions are summarized in Table 6 and are briefly discussed below. A BWI Airport Layout Plan is provided as Exhibit 2.

##### A. Aircraft

Most emissions from aircraft engines consist of substances that are not normally regarded as air pollutants such as elemental nitrogen, oxygen and water vapor. However, several exhaust components, including CO, HC and NO<sub>x</sub>, are identified pollutants and are emitted in varying amounts depending on the aircraft engine type and operational mode, as explained below.

In general terms, the operational cycle of an aircraft is comprised of two primary operations: (1) landing and (2) take off. This cycle is commonly referred to as a Landing Takeoff Operation (LTO). Landing operations include approach, taxi-in and ground delay, and take off operations included taxi-out, ground delay and climbout. Aircraft emissions vary between each mode because at power settings other than cruise, engine performance is less than optimum. For example, when aircraft are idling, CO and HC emissions are highest. In contrast, during take-off and climb-out, CO and HC emissions decrease and NO<sub>x</sub>

TABLE 6

PRIMARY SOURCES OF AIR EMISSIONS  
Baltimore/Washington International Airport  
Air Quality Plan

Source	Emission(s)	Characteristics
Aircraft	<ul style="list-style-type: none"> <li>- Carbon monoxide</li> <li>- Hydrocarbons</li> <li>- Nitrogen oxides</li> <li>- Particulate matter</li> <li>- Sulfur oxides</li> </ul>	<ul style="list-style-type: none"> <li>- Exhaust products of fuel combustion which vary greatly depending on aircraft engine type, power setting and period of operation. Except for short periods of take-off and approach, aircraft altitude precludes measurable off-site ground level impacts.</li> </ul>
Ground Support Equipment	<ul style="list-style-type: none"> <li>- Carbon monoxide</li> <li>- Hydrocarbons</li> <li>- Nitrogen oxides</li> <li>- Particulate matter</li> <li>- Sulfur dioxide</li> </ul>	<ul style="list-style-type: none"> <li>- Exhaust products of fuel combustion from service trucks, tugs, belt loaders and other portable equipment.</li> </ul>
Fuel Storage and Transfer	<ul style="list-style-type: none"> <li>- Hydrocarbons</li> </ul>	<ul style="list-style-type: none"> <li>- Formed from the evaporation and vapor displacement of fuel from storage tanks and fuel transfer facilities. Emissions vary with fuel usage, type of storage tank, refueling method, fuel type, vapor recovery, climate and ambient temperature.</li> </ul>
Motor Vehicles	<ul style="list-style-type: none"> <li>- Carbon monoxide</li> <li>- Hydrocarbons</li> <li>- Nitrogen oxides</li> <li>- Particulate matter</li> <li>- Sulphur oxides</li> </ul>	<ul style="list-style-type: none"> <li>- Exhaust products of fuel combustion from patrons, employees and cargo traffic approaching, departing and moving about the airport site. Emissions vary greatly depending on vehicle type, distance travelled, operating speed and ambient conditions. On-site emissions confined to access/egress roadways and parking facilities.</li> </ul>
Fire Training Facilities	<ul style="list-style-type: none"> <li>- Smoke</li> </ul>	<ul style="list-style-type: none"> <li>- Short-term by-product of burning jet fuel during periodic drills.</li> </ul>
Utilities	<ul style="list-style-type: none"> <li>- Diesel exhaust</li> </ul>	<ul style="list-style-type: none"> <li>- Exhaust products from back-up diesel powered generators during emergency conditions.</li> </ul>
Space Heating and Cooling	<ul style="list-style-type: none"> <li>- Carbon monoxide</li> <li>- Hydrocarbons</li> <li>- Nitrogen oxides</li> <li>- Steam</li> <li>- Chlorofluorocarbons</li> </ul>	<ul style="list-style-type: none"> <li>- Exhaust products of fossil fuel combustion from boilers dedicated to indoor heating requirements.</li> <li>- Incidental discharges from air conditioning systems.</li> </ul>

Source: Greiner, Inc., 1994.

emissions are predominant. PM and SO<sub>x</sub> emissions are also emitted during the LTO cycle, but in minor amounts.

On the ground, aircraft emissions are also a function of airfield operational characteristics. For example, long taxiing distances, taxiway queues and terminal area delay periods contribute to "excess" emissions. Wind patterns and other weather conditions also play important roles.

Except for the short periods of take-off, climb-out, landing and approach, aircraft altitude above 3,000 feet diminishes the chance of off-site aircraft emissions having any discernible ground level impact.

"Fuel dumping" from aircraft is a rare and uncommon practice and is only permitted during emergency situations at specified altitudes and remote locations.

**B. Aircraft Ground Support Equipment**

Aircraft ground support vehicles and equipment at BWI include light and heavy duty trucks, tractors, tow-tugs, belt loaders, and power generators. Emissions are a function of the type and amounts of fuel consumed, periods of operation and such other factors as airport activity levels, aircraft type serviced and local weather conditions. Currently, most of these vehicles are powered either by diesel or gasoline at BWI.

**C. Fuel Storage and Transfer**

Fuel storage and transfer facilities at BWI represent minor sources of evaporative HC emissions. Basically, emissions occur in two ways: (1) breathing losses and (2) working losses. Breathing losses are a result of the natural expansion and contraction of the fuel caused by daily changes in ambient temperature and barometric pressure.

Working loss is the combined vapor loss from filling and emptying the tanks. Filling causes increased pressure in the tank, thus expelling vapors from the tank. Emptying loss occurs when air drawn into the storage tank during fuel removal becomes saturated with HC vapors; expands, thus exceeding the vapor space capacity; and again, expelling vapors out of the tank. Working losses also occur during the refueling of aircraft and aircraft support equipment.

Because of the low vapor pressure of jet fuel, JP-A and diesel, facilities containing these fuels are not considered by EPA to be significant sources of HC emissions.

**D. Fire Training Facility**

The BWI fire training facility, remotely located in the southwest sector of the airport, is used intermittently for fire training exercises and is a periodic source of smoke. Currently, the "fire pit" is utilized about 40 times a year by the Crash/Fire/Rescue Department and as a Regional Training Facility for other airports. Reportedly, individual test burns last one to three minutes. Approximately 300 to 500 gallons of fuel (diesel, Jet-A and/or gasoline) are burned during each training session, most of which occur at night and when meteorological conditions are favorable. Flames are extinguished with water and aqueous film forming foam (AFFF).

**E. Utilities**

Electric power is supplied to BWI by Baltimore Gas & Electric, the local power company. Therefore, with the minor exception of small back-up generators used only during emergency conditions, there is no fossil fuel burned on-site for the generation of electricity.

**F. Space Heating and Cooling**

The heating plant at BWI contains two 40 million Btu/hour (1,200 boiler h.p.) steam boilers. One boiler is reserved as a "back-up" and both are fueled primarily with natural gas or No.

2 fuel oil only when necessary (reportedly six times a year). The proposed expansion to Concourse E includes the addition of a third 300 h.p. boiler steam boiler.

Air conditioning requirements at BWI are met by individual building units. During repair and maintenance, a chloroflorocarbon/hydrochloroflorocarbon (CFC/HCFC) recovery and recycling program is in place to minimize the release of these coolants to the atmosphere.

**G. Motor Vehicles**

BWI-related motor vehicle emissions are attributable to airport passenger, employee and cargo ground traffic travelling to, from, and moving around the airport site. These emissions are primarily a function of traffic volume, distance travelled, operating speeds, fleet characteristics, and various climatic factors.

On-site, motor vehicle emissions are generally confined to access/egress roadways, enplaning and deplaning curb sides, and parking facilities located within airport boundaries. Outside the airport boundaries, motor vehicle access/egress routes to and from the airport extend over many segments of the surrounding roadway network, making these "off-site" emissions difficult to distinguish from other non-airport-related traffic operating on the same roadways. With minor exceptions, most BWI motor vehicle trips enter and exit the airport site via the airport main entrances on I-195 and Elm Road. One exception is the general aviation traffic which enters and exists from Aviation Boulevard (Rt. 162).

**H. Other Miscellaneous Sources**

A number of other small, miscellaneous sources of air emissions are known to exist in connection with BWI. These sources include the following:

**1. Food Preparation**

Steam, grease and odors are considered normal air emissions associated with food preparation services. At BWI, these services are performed by private vendors within the main terminal, at the nearby hotel and by independent, off-site airline caterers such as Caterer Air. Overall, food preparation services are very minor sources of air emissions at BWI.

**2. Airfield Maintenance**

Routine airfield maintenance at BWI involves a small variety of activities that potentially involve air emissions. For example, the sealing of concrete and asphalt cracks requires a hot, hydrocarbon-based compound; runway rubber removal (twice a year) requires a vaporous solvent; small vehicles/equipment require fueling and periodic painting; and a limited amount of herbicides are applied by certified personnel to help control weeds. Overall, these activities are very minor sources of air emissions at BWI.

**3. Environmental Remediation Operations**

Because of past spills or leaks at the BWI fuel storage area, a limited soil/groundwater treatment program is underway. The small amount of HC emissions associated with this remediation project is normally expected, permitted by MDE, and not considered significant.

**4. Fugitive Dust and Debris**

From time-to-time, uncontrollable particles of dust, dirt and other debris are unavoidably blown about the BWI site by the wind. However, because most of the airport site is either covered by concrete, asphalt, buildings or vegetation, the impact of fugitive dust and debris is kept to a minimum.

There are no open dumps, stock piles of raw materials or large tracts of exposed land at BWI which would contribute to the generation of fugitive dust and debris.

**5. Construction Activities**

Construction activities represent a short-term source of fugitive dust and exhaust products from construction equipment. Mandatory controls are required of every development project involving grading. As a result, dust emissions are usually well controlled with water spraying, covered trucks and vegetative cover. Exhaust emissions are generally confined to the project site and are temporary in duration.

These five miscellaneous sources of air emissions described above are short-term or temporary in duration and in combination would represent less than one percent of the total amount of emissions associated with BWI.

## VI. EMISSION REDUCTION MEASURES

Because the Baltimore area is designated as non-attainment for O<sub>3</sub>, emission reduction measures contained in the SIP focus on VOCs; precursors to the formation of O<sub>3</sub>. Some potential emission reduction measures are discussed below for the three principal sources of air emissions at BWI: aircraft, aircraft ground service vehicles and motor vehicles.

### A. Aircraft

The most effective measure for minimizing, or reducing, aircraft emissions is through reducing ground-based delay times during arrival and departure operations. Based on the BWI Master Plan, Master Plan Updates and current operational forecasts, BWI is expected to function with adequate capacity at least through the year 2003. Adequate airfield and terminal capacity minimizes aircraft delay, thus minimizing excess air emissions from idling aircraft. MAA will continually update the BWI Master Plan to help further reduce delay times and ensure the airport has adequate capacity to match the demand beyond the year 2003.

Emission standards for more efficient, less polluting aircraft engines are controlled by the EPA, FAA and aircraft engine manufacturers. As airlines continually acquire these newer aircraft, older aircraft which emit more CO and VOC emissions are gradually phased out. The BWI emissions inventory reflects this anticipated reduction in CO and VOC emissions due to aircraft fleet modernization.

The centralized location of the BWI terminal area on the airfield also helps minimize taxi/idle emissions.

### B. Ground Service Vehicles

As the number of aircraft operations at BWI increase, the use of ground service vehicles will also likely increase. Because "off-road" vehicles, including aircraft ground support



equipment, are not currently subject to EPA emission control standards, service vehicle emissions are essentially uncontrolled. Converting the service vehicle fleet to fuels that emit fewer emissions or are electric-powered is a potential mitigation measure. However, the type and use of aircraft service vehicles is controlled by individual airlines or airline contractors at BWI and, thereby, may not be an option readily available to MAA at the present time.

C. Motor Vehicles

SIPs for O<sub>3</sub> non-attainment areas typically target the control of motor vehicle VOC emissions through transportation control measures (TCMs). In general terms, there are four ways by which TCMs portend to reduce motor vehicle emissions: 1) reduce persons trips; 2) reduce trip length; 3) increase vehicle occupancy rate; and 4) reduce rate of emissions per vehicle miles traveled (VMT).

TCMs targeting patron trip reduction strategies generally cannot be effectively applied to airports. Airports provide a unique service that must be available to the travelling public at all times. Airports also provide a service for which, in most cases, there is no practical substitute.

TCMs that reduce trip length come under the general heading of "land use controls". This strategy provides alternatives to longer vehicle trips by concentrating development within activity centers. For example, zoning for a shopping center may be restricted near office and residential land uses, thus reducing VMT for shopping. Again, airport services are unique, do not lend themselves to land use control TCMs and are often located away from population centers for noise abatement considerations.

Increasing vehicle occupancy is a commonly used TCM and is a principal component of the Baltimore area SIP emission reduction effort. Although this measure does not eliminate person trips, it can reduce vehicle trips and VMT. Programs such as ride sharing, van pooling, transit pass subsidy, guaranteed emergency ride home, preferential or reduced cost

for carpooler parking and ride matching assistance have been implemented at the airport. Examples include BWI's free train-to-plane passes and the future light rail extension to the airport. The designation of a transportation coordinator aids in promoting and encouraging use of these programs.

Perhaps the most effective means of reducing motor vehicle emissions at the airport is to incorporate measures into the access/egress roadway system that will help reduce congestion and optimize operating speeds. In general terms, faster operating motor vehicles generate less pollution than slower moving motor vehicles. Many of these emission reduction measures already exist at BWI.

For example, the high speed, limited access, main entrance; the grade-separated upper (enplaning) and lower (deplaning) level main terminal roadways; and the segregation of slower moving (buses) from faster moving (cars) vehicles helps to obtain these preferred operating conditions. The new pedestrian overpass from the main terminal to the parking garage helps resolve motor vehicle/pedestrian conflicts, thereby reducing periods of stop-and-go driving. The provision of adequate on-site parking and the availability of remote parking prevents airport patrons and employees from "roaming" about the airport generating excess emissions. The natural gas-powered shuttle buses between the patron/employee remote parking lots is another effective motor vehicle emission reduction measure.

Table 12 provides a summary of the current emission reduction programs already in place at BWI. Table 13 contains a listing of other similar programs for consideration.

TABLE 12

EXISTING AIR EMISSIONS REDUCTION MEASURES  
 Baltimore/Washington International Airport  
 Air Quality Plan

Strategy	Measure	Effect	Comment
Reduce Motor Vehicle Emissions	One-way, limited access, entrance/exit roadway system	Reduces congestion, increases free-flow speeds, and eliminates stop-and-go driving.	Minimizes on-site motor vehicle emissions.
	Passenger side of vehicle aligned along arrival and departing curbsides	Reduces congestion and decreases curbside delay for "drop-off" vehicles.	Same as above.
	Two through lanes, one maneuvering lane and a curbside lane at terminal	Reduces congestion by segregating stopped vehicles from through traffic.	Same as above.
	Segregation of arrival and departure traffic on separate (upper and lower) roadways	Reduces congestion by elimination potential traffic conflicts and bottlenecks.	Same as above.
	Two lanes on the at-grade (lower) terminal level dedicated to bus and taxi use	Reduces congestion by removing vehicles with longer curb dwell times from thru traffic flow.	Same as above.
	Adequate on-site parking spaces	Reduces on-site VMT by eliminating need for vehicles to "roam" looking for empty spaces.	Same as above.
	Main terminal to parking garage pedestrian overpass	Reduces congestion by reducing pedestrian/motor vehicle conflict.	Minimizes on-site motor vehicle emissions.
	Main terminal/parking garage segregated by open space	Eliminates building "canyons" and entrances natural ventilation.	Prevents build-up of motor vehicle exhaust.
	Traffic control officer to encourage parking in garage	Reduces congestion and excess emissions in front of terminal.	Same as above.
	Shuttle buses for patron and employee remote parking lots; several fueled with natural gas	Reduces on-site VMT and uses clean burning fuel.	Same as above.
	Several MAA staff and utility vehicles fueled with natural gas	Use clean burning fuel.	Same as above.
Progressive emissions control	Reduces engine emissions.	EPA has issued motor vehicle engine emissions standards. Anticipated emissions reductions have been incorporated into the MOBILE5a emissions factor model.	

TABLE 12

EXISTING AIR EMISSIONS REDUCTION MEASURES  
 Baltimore/Washington International Airport  
 Air Quality Plan  
 (Continued)

Strategy	Measure	Effect	Comment
Increase Motor Vehicle Occupancy	BWI Business Partnership, Inc.	Promotes and coordinates programs to reduce employee trips.	BWI is a member.
	Ride share/Car Pooling/Van pooling	Reduces employee motor vehicle trips.	Participation with other BWI Business Partnership Members.
	Guaranteed emergency ride home	Makes ride share/van pooling program more attractive.	Same as above.
Alternate Transportation Mode	Transit pass subsidy	Reduces employee motor vehicle trips by making an alternate transportation mode more attractive.	Same as above.
	Maryland Rail Commuter Service (MARC)	Reduces patron and employee motor vehicle trips by providing alternate transportation mode.	Currently has a station in the BWI area. Provides free shuttle transportation to airport.
	Mass Transit Administration (MTA) Bus service	Same as above.	MTA bus service provided between BWI Airport area, Baltimore, North County, and Annapolis.
	Mass Transit Administration Light Rail Service	Same as above.	Nearest station is the Linthicum Light Rail Stop with shuttle to BWI.
	Park-and-ride lots	Same as above.	Seventeen park-and-ride lots are located in Anne Arundel County. Baltimore City and Baltimore County have 18 and 20 park-and-ride lots, respectively.
	Amtrak-Shuttle to BWI	Same as above.	Approximately 20 miles from BWI to Amtrak station; estimated ridership 18,000 people/month.
	Reduce Aircraft Emissions	Provide sufficient airfield capacity	Reduces aircraft delay period and idle emissions.
Improved emissions control		Reduces aircraft engine emissions.	EPA has issued aircraft engine emission standards. More modern engine designs reduce VOC and CO emissions but increase NO <sub>x</sub> emissions.

Source: Greiner, Inc., 1994.

TABLE 13

POTENTIAL AIR EMISSIONS REDUCTION MEASURES  
 Baltimore/Washington International Airport  
 Air Quality Plan

Strategy	Operation/Design Measure	Effect	Comment
Reduce Motor Vehicle Emissions	Increase capacity of internal circulation roadways	Reduces congestion and increases free-flow speeds.	Improvements to Route 46, Elm Road, and the terminal loop road were recommended in the 1987 BWI Master Plan Update.
	Construct dedicated shuttle bus road from satellite parking	Reduces congestion by removing slower bus traffic from main traffic flow.	Recommended in the 1987 BWI Master Plan Update.
Person Trip Reduction	Reduce/compressed work week for employees	Reduces employee trips to work.	Very limited application at airports because on-site services are required.
	Telecommuting	Same as above.	Same as above.
Reduce Trip Length	Land use planning	Reduces average trip length of airport patrons.	MAA has no control over land use planning.
Alternative Transportation Mode	Light rail service to Airside "F"	Reduces patron and employee motor vehicle trips by providing alternate transportation mode.	Light rail extension to BWI was evaluated in a Draft Environmental Impact Statement/Alternatives Analysis (May 1991).
Increase Vehicle Occupancy	Preferential carpooler parking	Reduces employee motor vehicle trips by encouraging use of ride share/van pooling programs.	Potential limited application to BWI.
	Reduced Carpooler Parking Costs	Same as above.	Same as above.
	Ride matching assistance	Same as above.	Same as above.
	Parking fees/Parking limitations	Reduces patron motor vehicle trips by providing incentive to use alternate transportation modes.	Same as above.

Source: Greiner, Inc., 1994.

## VII. CONCLUSIONS AND RECOMMENDATIONS

This proactive approach by the MAA to address air emissions associated with BWI is intended to help MAA, MDE, FAA, and EPA to more effectively measure, manage, and minimize airport-related air quality impacts. Moreover, this Air Quality Plan will ensure that future improvements to BWI will remain consistent with the goals of the SIP for this area and conform to the General Conformity Rule requirements of the CAA. The essential conclusions and recommendations from this plan are provided below.

### A. Conclusions

This Air Quality Plan has identified and characterized all current and known future sources of air emissions associated with BWI. From this information, several general conclusions have been developed which are summarized below:

- Aircraft and airport patron/employee motor vehicles traveling to, from and moving about the airport site represent two primary sources of air emissions at BWI. This finding is common to most major metropolitan airports in the U.S. and around the world.
- Based on current operations data for existing and future years at BWI, aircraft and motor vehicle emissions are expected to change and potential increases will be partially offset by (1) the continual replacement of old aircraft with newer, more efficient aircraft; (2) adequate airfield and terminal area capacity; and (3) the reduction in motor vehicle emissions attributable to the federal motor vehicle emission reduction program.
- Aircraft service vehicles are shown to be a leading source of emissions at BWI and portend to increase in future years. However, these emissions are likely overestimated due to the inherent limitations of the emissions inventory process to anticipate changes in this equipment over time.
- Fuel storage and space heating represent comparatively small percentages of total air emissions at BWI. The fire training facility is a periodic source of smoke.
- There are no other potentially significant sources of air emissions associated with BWI such as large scale industrial/manufacturing processes, incineration, power generation, etc.

- Several design and operational elements of BWI are already in place which help reduce air emissions from aircraft and motor vehicles. BWI also participates in a number of other TCMs which have the potential for reducing motor vehicle emissions further as these programs develop.
- Many of the emission reduction measures in effect at BWI are not currently quantifiable in terms that can be included in the emissions inventory as emission reduction "credits".

Table 14 provides a comparison of the Air Quality Plan and SIP emission inventories for aircraft. As shown, the range of agreement (86 percent for CO, 73 percent for NO<sub>x</sub>, and 55 percent for VOCs) varies and is likely attributable to differences in the input data. However, a comparison of total areawide VOC emissions to BWI indicates that the airport (including off-site emissions) only generates about 1 percent of the total amount.

#### B. Recommendations

Based on the results of this Air Quality Plan, summarized below are several recommendations for the continued use and development of this plan by MAA and MDE. For clarification, each recommendation is followed by a brief discussion.

- Incorporate the Results of the Air Quality Plan Into the SIP - Because of past violations of the O<sub>3</sub> standard, the Baltimore area has been designated as a "severe" non-attainment area for this pollutant. Baltimore is one of eight areas in the country so designated including Los Angeles, New York, Chicago, San Diego, Houston, Milwaukee and Philadelphia. In accordance with Title I of the CAA, MDE has developed, for EPA approval, a revised SIP. Essentially, the goal of this plan is a 15 percent reduction in VOCs region-wide by 1995 and attainment of the O<sub>3</sub> standard by 2005. The results of this Plan should be provided to the MDE for incorporation into the SIP.
- Compare Individual Project Emissions with Conformity Determination Rates - Under the CAA General Conformity Rule, new federally-funded projects or activities must conform to the SIP. EPA has established threshold or "deminimus" emission rates, below which conformity determinations are not required. Because of the Baltimore area O<sub>3</sub> "severe" non-attainment designation, the deminimus level is set at 25 tons/year for VOC and NO<sub>x</sub> emissions. Airport projects that generate less than this level, do not require conformity determinations.

TABLE 14

COMPARISON OF SIP AND AIR QUALITY PLAN  
EMISSION ESTIMATES FOR 1990  
Baltimore/Washington International Airport  
Air Quality Plan

Source	VOC (tons/day)	NO <sub>x</sub> (tons/day)	CO (tons/day)
SIP (Aircraft <sup>a</sup> )	0.51	1.40	2.61
BWI (Aircraft <sup>b</sup> )	0.92	1.92	2.28
Total Areawide Emissions <sup>c</sup>	344.6	n.a.	n.a.
Total BWI Emissions <sup>d</sup>	3.52	n.a.	n.a.

- <sup>a</sup> Includes commercial, general, and military aircraft operations in Anne Arundel County (from MDE Rate of Progress Plan, 1994).
- <sup>b</sup> Includes commercial, general, and military aircraft operations at BWI (from Air Quality Plan).
- <sup>c</sup> Includes all point, area, mobile, and non-road mobile emissions in Baltimore non-attainment area.
- <sup>d</sup> Includes aircraft, aircraft service vehicle, fuel storage, and both on-site and off-site motor vehicle emissions for BWI.

Source: Greiner, Inc., 1994.



• Utilize Air Quality Plan Emission Inventory Results for Aiding Conformity Determinations - Should projects require conformity determination under the CAA, conformity for airport-related projects can be demonstrated several ways:

1. The airport project is specifically included in the SIP;
2. The emissions are offset by other reductions;
3. The emissions are consistent with the SIP emission budget;
4. The SIP is revised to accommodate the emissions;
5. The airport project is included in a SIP-conforming Transportation Plan; or
6. In some cases, there is no increase in emissions in a build/no-build comparison.

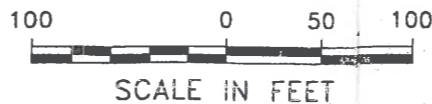
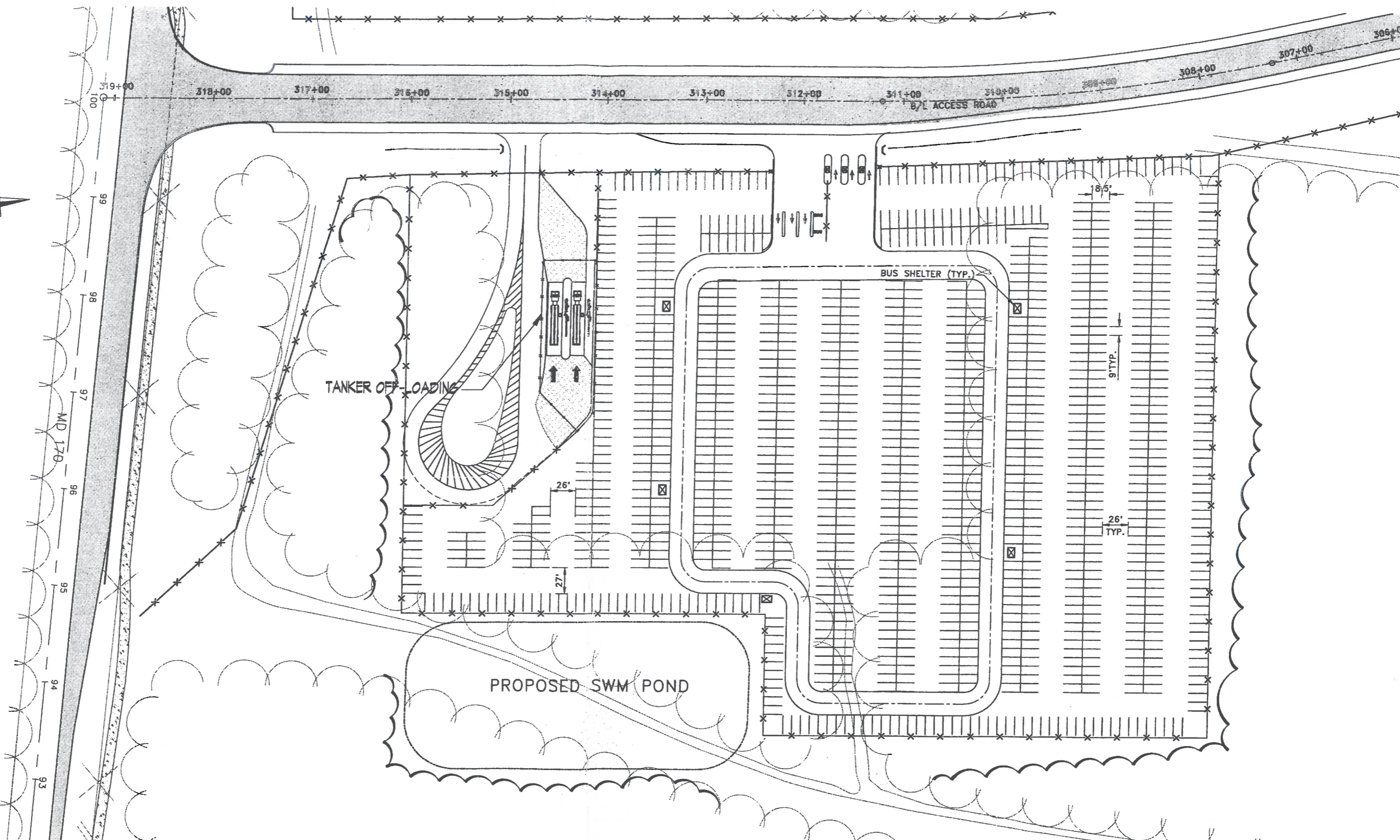
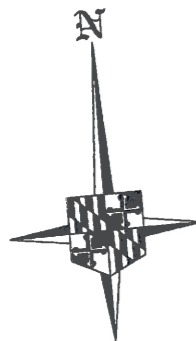
The data contained in this plan provides a baseline of air emissions at BWI that are consistent with General Conformity Rule and SIP guidelines. Therefore, the potential application of these conformity-determination methods are made easier.

• Update Air Quality Plan Periodically as New Information Becomes Available - This 1994 version of the plan and the accompanying emissions inventory were developed using the most current information available at this time. This information and data may require updating as operational forecasts change, new airport improvement projects are developed or more advanced air quality assessment techniques become available. Specifically, updates to the Air Quality Plan/emission inventory should be accomplished in connection with the following "triggers":

1. Significant changes to airport operational levels or forecasts;
2. Significant changes to aircraft fleet mix;
3. Significant changes in airfield delay data;
4. Planning or development of airport improvement projects not included in the Master Plan or this Air Quality Plan;
5. Introduction of any new air emission sources not identified in the Air Quality Plan;
6. Significant changes to surface traffic, internal roadway system or airport access/egress patterns;

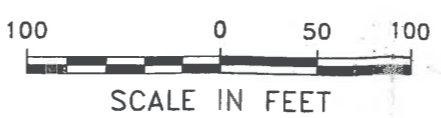
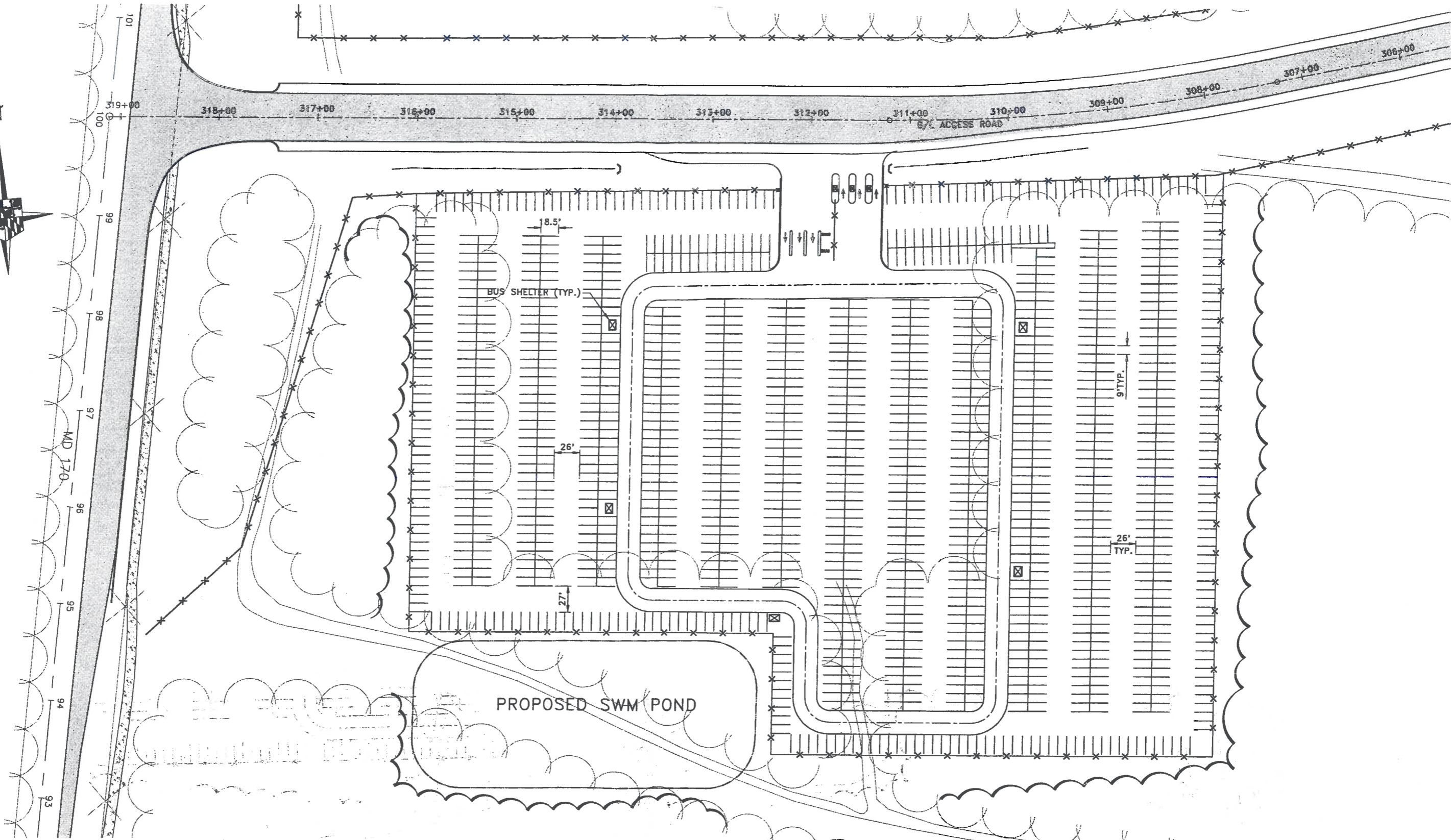
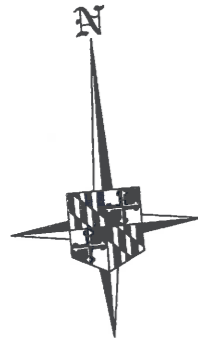
7. Introduction or significant increase usage of any TCM by airport patrons or employees; and/or
  8. Updates to aircraft, motor vehicle or aircraft service vehicle emission rates that significantly affect the results of this assessment.
- Quantify Current and Future Air Emission Reduction Benefits - Tables 12 and 13 of this report identify a variety of air emission control measures that are either already in place or are possibly applicable to BWI. In some cases, sufficient data does not currently exist to quantify the potential reduction in air emissions as a result of these measures. This information may include, but may not necessarily be limited to, the following:
    1. Airfield improvements that increase capacity, decrease taxi time or reduce delay;
    2. Terminal area improvements that resolve capacity limitations or reduce delay;
    3. BWI patron and employee participation in vehicle trip reduction/increase vehicle occupancy programs; and/or
    4. Motor vehicle trip reductions in connection with the proposed light rail connection, other mass transit facilities or alternate forms of transportation to the airport.
  - Perform Atmospheric Dispersion Modeling Using EDMS - According to the new EPA draft General Conformity Rule, federally-funded projects must show conformance with the SIP by demonstrating that they will not cause or create a new violation of any NAAQS. Emissions inventory results do not always satisfy this requirement. EDMS dispersion modeling, based on airport-related emissions and local meteorological data, will provide the information to make this determination, whenever necessary. Dispersion modeling for roadway or parking facility improvement projects can also be conducted using other EPA-approved models.
  - Coordinate with State and Federal Agencies - The Federal Airport and Airway Improvement Act of 1982 and the 1990 Amendments of the CAA requires that, with a few exceptions, federally-funded projects must be located, designed, constructed and operated in compliance with applicable state and federal air quality standards and goals. Therefore, the BWI Air Quality Plan and accompanying emission inventory should be used to help satisfy these requirements. In addition, this plan should be used to demonstrate to EPA and MDE that MAA is actively engaged in a

comprehensive effort to minimize actual and potential air quality impacts associated with BWI.




1127 PARKING SPACES

	MARYLAND DEPARTMENT OF TRANSPORTATION MARYLAND AVIATION ADMINISTRATION OFFICE OF PLANNING AND ENGINEERING	
	<b>MATHISON WAY PARKING AREA</b>	
<b>URS Greiner Woodward Clyde</b> <small>CONSULTING ENGINEERING AND PLANNING          LITTLE ROCK, MARYLAND 21090</small>	SCALE AS SHOWN DATE OCT. 1999	EXHIBIT NO. <b>1</b>



SCALE IN FEET

1366 PARKING SPACES

 BW BALTIMORE/WASHINGTON INTERNATIONAL AIRPORT	MARYLAND DEPARTMENT OF TRANSPORTATION MARYLAND AVIATION ADMINISTRATION OFFICE OF PLANNING AND ENGINEERING	
	<b>MATHISON WAY PARKING AREA</b>	
<b>URS Greiner Woodward Clyde</b> <small>CONSULTING ENGINEERING AND PLANNING          LINTHICUM, MARYLAND 21086</small>	SCALE AS SHOWN DATE OCT. 1999	EXHIBIT NO. <b>2</b>