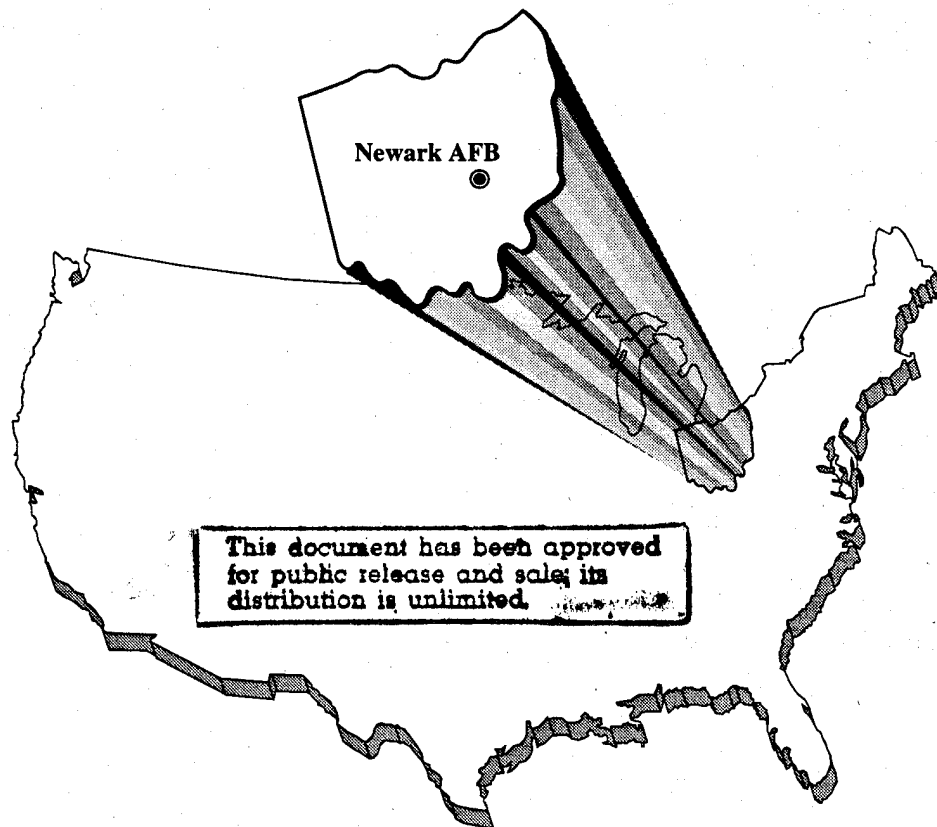




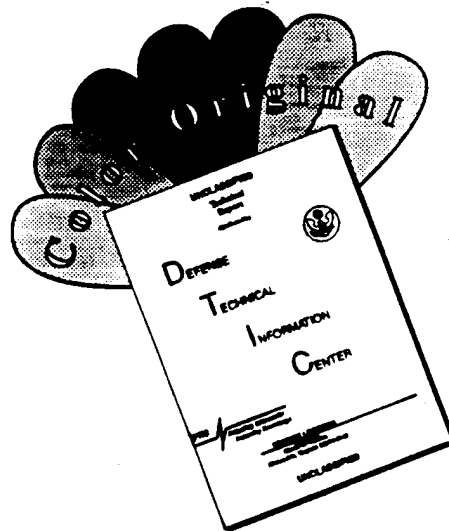
ENVIRONMENTAL ASSESSMENT May 1995



DISPOSAL AND REUSE OF NEWARK AIR FORCE BASE, OHIO

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DEPARTMENT OF THE AIR FORCE
AIR FORCE BASE CONVERSION AGENCY

MAY 25 1995

TO: ALL INTERESTED GOVERNMENT AGENCIES, PUBLIC GROUPS, AND
INDIVIDUALS

I am pleased to provide you with a copy of the Environmental Assessment (EA) and Finding of No Significant Impact (FONSI) for the Disposal and Reuse of Newark AFB, OH. The document has been prepared in accordance with the National Environmental Policy Act as implemented by the Regulations of the President's Council on Environmental Quality and analyzes the potential environmental consequences of the disposal and reasonable alternatives for reuse of the base.

Should you require additional information, please contact:

Colonel Thomas Gross, USAF
AFCEE/EC
8106 Chennault Road
Brooks AFB TX 78255-5310
(210) 536-3807

Thank you for your cooperation.

A handwritten signature in black ink, appearing to read "Alan K. Olsen", is positioned above the printed name and title.

ALAN K. OLSEN
Director

Attachments:

1. EA
2. FONSI

FINDING OF NO SIGNIFICANT IMPACT

DISPOSAL AND REUSE OF NEWARK AIR FORCE BASE, OHIO

Newark Air Force Base (AFB), Ohio, was recommended for closure by the 1993 Defense Base Closure and Realignment Commission. The Commission's recommendations were accepted by the President and submitted to Congress on July 2, 1993. As Congress did not disapprove the recommendations in the time given under the Defense Base Closure and Realignment Act (DBCRA) of 1990 (Public Law 101-510, Title XXIX), the recommendations have become law. Newark AFB is scheduled to close in September 1996.

Pursuant to the Council on Environmental Quality regulations for implementing the procedural provisions of the National Environmental Policy Act (40 Code of Federal Regulations (CFR) 1500-1508), Air Force Instruction 32-7061, and the Department of Defense (DOD) Directive 6050.1, the U.S. Department of the Air Force has conducted an assessment of the potential environmental consequences of the disposal and reuse of Newark AFB, Ohio. An environmental assessment (EA) has been prepared to provide information on the potential impacts resulting from disposal and proposed reuse of base property. This finding of no significant impact summarizes the results of the evaluations of these activities at Newark AFB. The discussion focuses on activities that have the potential to change both the natural and human environments.

Alternatives Including the Proposed Action

Newark AFB encompasses approximately 70 acres, including industrial, institutional (educational and medical), commercial, public facilities/recreation, and vacant land uses. Building 4, which houses the Aerospace Guidance and Metrology Center, is the largest building on the base with approximately 750,000 square feet of floor space. DOD has recently determined that Building 2 and the associated parking are not excess and are required for use by Defense Finance and Accounting Service (DFAS). All of the remaining base property is potentially unavailable for disposal. The entire base was evaluated in the EA.

A Proposed Action and two alternatives, including the No-Action Alternative, were assessed in the EA for the purposes of evaluating potential environmental impacts resulting from subsequent reuse of Newark AFB. The Air Force adopted as the Proposed Action the Reuse Plan of the Newark-Heath Air Force Base Reuse Commission (NHAFBRC). The Air Force has also developed a light industrial alternative for reuse analysis. The No-Action Alternative was also addressed.

Listed below are brief descriptions of the Proposed Action and alternatives:

The **Proposed Action** focuses on the continuation and expansion of current base activities under the management of a civilian contractor. Activities would include the repair and maintenance of guidance systems; the metrology calibration program would continue under DOD management. In addition, other DOD and similar civilian high-technology reuses would be conducted at the facility. Continuation of base activities under civilian management is referred to as privatization-in-

place. In addition, a DFAS operation would utilize Building 2 for office space. Other land uses would include institutional (educational), commercial (office), public facilities/recreation, and vacant land.

The **Industrial Alternative** proposes light manufacturing (i.e., furniture or computer assembly) and warehousing usage for most of the base. Other land uses would include commercial, public facilities/recreation, and vacant land.

The **No-Action Alternative** would result in the property being retained by the U.S. Government and placed in caretaker status; the property would be put to no further use.

After consideration of the Proposed Action and reuse alternatives analyzed in the EA, the Air Force will prepare decision documents stating the terms and conditions under which property disposition will be made. The summary of environmental consequences discussed below are associated with any of the proposed reuses.

Summary of Environmental Consequences

Each of the reuse proposals was analyzed over a 20-year period. Air quality impacts were assessed over a 10-year period due to the speculative nature of projecting pollution concentrations far into the future. No new construction or ground-disturbing activities were proposed under the reuse proposals. The baseline conditions for the purpose of analysis are the conditions of the base at full operation. Impacts associated with disposal and reuse activities were then addressed by comparing projected conditions under the reuse proposals to baseline conditions.

Aspects of the local community, transportation, utility demand (including water, wastewater, solid waste, electricity, and natural gas), geology and soils, and water resources would not be affected.

No hazardous materials/waste management impacts would occur from increased activities, and proposed reuses would not interfere with Installation Restoration Program (IRP) and Resource Conservation and Recovery Act (RCRA) remediation. Air emissions from the reuse proposals would not affect maintenance of the attainment status of the respective pollutant standards in the Licking County area. A potential impact has been identified to any facilities at the base which are determined to be eligible for nomination to the NR of HPA and are conveyed to a non-federal entity. Neither the Proposed Action nor Industrial Alternative provide any adverse impact upon or degradation of the wetlands at Newark AFB.

Mitigations

The environmental assessment concluded that no significant impacts to the environment would result from the reuse proposals if the following mitigation measures are implemented:

- Section 4 of Executive Order 11990 states that if federally owned wetlands are leased or disposed to non-federal or private parties, the federal agency shall (a) reference in the conveyance the uses that are restricted under identified federal, state, or local wetland regulations; and (b) attach other appropriate restrictions to the uses of the property by the grantee or purchaser and any successor, except where prohibited by law; or (c)

withhold such properties from disposal. Implementation of Executive Order 11990 will provide protection for wetland resources.

- Conduct consultation under Section 7 of the Endangered Species Act prior to committing resources to any project that could adversely impact threatened or endangered species.
- If facilities eligible for inclusion on the National Register of Historic Places are conveyed to a non-federal entity (state, local, or private), and an adverse effect is identified, placement of preservation covenants on the lease or disposal document could reduce impacts to a nonadverse level.

Remediation of hazardous waste sites under the IRP and RCRA is and will continue to be the responsibility of the Air Force.

Cumulative Impacts

The EA reviewed cumulative impacts which could result from the incremental impact of the action when added to other past, present, or reasonably foreseeable future actions. No other known projects in the vicinity of Newark AFB were determined to have the ability to cause cumulative impacts in combination with disposal and reuse activities.

Decision

As a result of the analysis of impacts in the EA, it was concluded that the proposed disposal and reuse of Newark AFB would not have a significant effect on human health or the natural environment and, therefore, an environmental impact statement will not be prepared.

Approved: _____

Alan K. Olsen

Director, Air Force Base Conversion Agency

Date: _____

MAY 25 1995

ENVIRONMENTAL ASSESSMENT

DISPOSAL AND REUSE OF NEWARK AIR FORCE BASE, OHIO

May 1995

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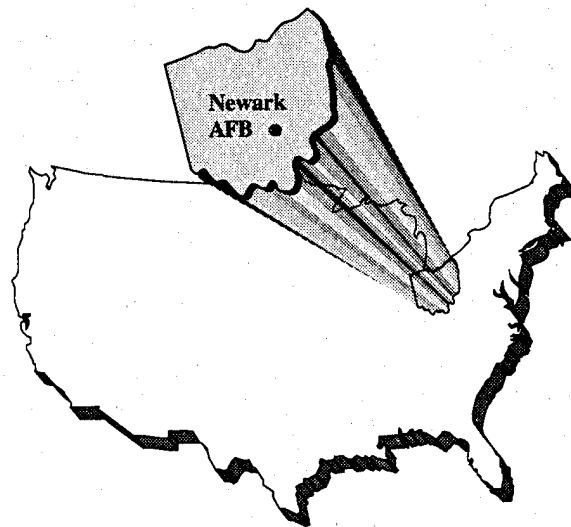
COVER SHEET

ENVIRONMENTAL ASSESSMENT DISPOSAL AND REUSE OF NEWARK AIR FORCE BASE, OHIO

- a. Lead Agency: U.S. Air Force
- b. Cooperating Agencies: Federal Aviation Administration and Headquarters Air Force Materiel Command
- c. Proposed Action: Disposal and Reuse of Newark Air Force Base (AFB), Licking County, Ohio
- d. Inquiries on this document should be directed to: Chief of Environmental Planning Division, HQ AFCEE/EC, 8106 Chennault Road, Building 1155, Brooks AFB, Texas, 78235-5318, (210) 536-3787.
- e. Designation: Environmental Assessment
- f. Abstract: Pursuant to the Defense Base Closure and Realignment Act of 1990 (Public Law 101-510), Newark AFB is scheduled for closure in September 1996. This environmental assessment has been prepared in accordance with the National Environmental Policy Act to analyze the potential environmental consequences of the disposal and reasonable alternatives for reuse of the base. The document includes analysis of community setting, land use and aesthetics, transportation, utilities, hazardous materials and hazardous waste management, geology and soils, water resources, air quality, biological resources, and cultural resources. Two reuse alternatives were examined: a Proposed Action that includes continuation and expansion of current base activities under the management of a civilian contractor (i.e., privatization-in-place) with a Defense Finance and Accounting Service (DFAS) operation; and an Industrial Alternative that proposes to use the base for light manufacturing and warehousing. The No-Action Alternative, which would entail no reuse of base property, was also evaluated.

Potential environmental impacts of the Proposed Action are increased traffic over preclosure baseline conditions and possible adverse effects to historic properties. Roadways in the area would continue to operate at acceptable levels of service. Cultural resources could be impacted by conveyance of the property to a non-federal entity. Preservation covenants within disposal documents could eliminate or reduce these effects to a nonadverse level. Impacts from the Industrial Alternative would be similar to those for the Proposed Action with the addition of increased air emissions. The increase in emissions would not jeopardize the attainment status of any criteria pollutant. There would be no adverse effects from the No-Action Alternative. Because the Air Force is disposing of property, some mitigations are beyond the control of the Air Force. Remediation of existing hazardous waste sites is and will continue to be the responsibility of the Air Force.

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SUMMARY

SUMMARY

PURPOSE OF AND NEED FOR ACTION

Newark Air Force Base (AFB), Ohio, was one of the bases recommended by the 1993 Defense Base Closure and Realignment Commission for closure. The Commission's recommendations were accepted by the President and submitted to Congress on July 2, 1993. Since Congress did not disapprove the recommendations in the time given under the Defense Base Closure and Realignment Act (DBCRA) of 1990 (Public Law 101-510, Title XXIX), the recommendations have become law. Newark AFB is scheduled to close in September 1996.

The Air Force is required to comply with the National Environmental Policy Act (NEPA) in the implementation of base disposal and reuse. The Air Force must now make a series of interrelated decisions concerning the disposition of base property. This environmental assessment (EA) has been prepared to provide information on the potential environmental consequences resulting from disposal and proposed reuse of this property. DBCRA exempts from NEPA consideration all decisions to close, realign, or transfer military functions and installations. Two alternative reuse concepts are studied to identify potential direct and indirect environmental consequences of disposal and reuse of the property.

After completion and consideration of this EA, the Air Force will prepare decision documents stating the terms and conditions under which the dispositions will be made. These decisions may affect the environment by influencing the nature of the future use of the property.

ALTERNATIVES INCLUDING THE PROPOSED ACTION

Newark AFB is composed of 70 acres of federal property which shall be available for disposal for reuse. The land uses within the current base boundary include industrial, institutional (medical and educational), commercial, public facilities/recreation, and vacant land or open space.

For the purpose of evaluating potential environmental impacts resulting from the reuse of this land, the Proposed Action is based on the community's reuse plan, presented by the Newark-Heath Air Force Base Reuse Commission. The Proposed Action is a comprehensive plan for redevelopment of the base for continuation and expansion of current base activities under the management of a civilian contractor. Activities would include maintenance of guidance systems and managing the metrology calibration program. In addition, other Department of Defense and similar civilian high-technology or metrology reuses would be conducted at the facility. Continuation of base activities under civilian management is also

referred to as privatization-in-place. In addition, a Defense Finance and Accounting Service (DFAS) office will be located at Newark AFB. Other land uses include institutional (educational), commercial (office), public facilities/recreation, and vacant land.

The following alternatives to the Proposed Action were considered:

- The **Industrial Alternative** proposes the use of Building 4 and other support buildings for manufacturing and associated warehousing. Industrial uses would be complemented by commercial (office), public facilities/recreation, and vacant land uses.
- The **No-Action Alternative** would result in the property being placed in caretaker status. The property would not be put to further use. Current mission activities would be contracted out and moved to a different location.

SCOPE OF STUDY

The Notice of Intent to prepare an environmental impact statement (EIS) for the disposal and reuse of Newark AFB was published in the Federal Register on October 29, 1993. Issues related to the disposal and reuse of property at Newark AFB were identified during the ensuing scoping period. A public scoping meeting was held on May 10, 1994, at the Heath City Hall. After review of the information obtained during scoping, it was determined that, based on the few issues and limited scope of reuse activities, an EA would be prepared. Subsequent to this decision, the Air Force published a notice in the Federal Register that an EIS would not be prepared for the disposal and reuse of Newark AFB if the decision maker determines, through the analysis provided in the EA, that the action qualifies for a Finding of No Significant Impact.

This EA discusses the potential environmental consequences associated with the Proposed Action and reasonable alternatives. In order to establish the context in which these environmental impacts may occur, potential changes in employment and population, land use and aesthetics, transportation, and utility service are discussed as reuse-related influencing factors. Issues related to current and future management of hazardous materials and hazardous wastes are also discussed. Potential impacts to the physical and natural environment are evaluated for geology and soils, water resources, air quality, biological resources, and cultural resources. These impacts may occur as a direct result of disposal and reuse actions or as an indirect result of changes to the local communities.

The baseline conditions assumed for the purpose of analysis are the conditions of the base at full operation. Data used to describe the baseline conditions are those that depict conditions as close as possible to the closure announcement date (1992-1993 time frame). Impacts associated

with disposal and/or reuse activities may then be addressed by comparing projected conditions under various reuses to baseline conditions. This will assist the decision maker and agencies in understanding potential long-term impacts in comparison to conditions when the base was active.

SUMMARY OF ENVIRONMENTAL IMPACTS

This EA considers environmental impacts of the Air Force's disposal of the installation and portrays selected potential land uses. Three alternative scenarios, including the community's proposed plan, were used to group land uses and to examine the environmental effects of likely reuse.

Environmental impacts of the Proposed Action and alternatives are briefly described below. Impacts of the Proposed Action and alternatives over the 20-year study period are summarized in Tables S-1 and S-2. Impacts for air quality are summarized over a 10-year period due to the speculative nature of projecting pollution concentrations far into the future.

Mitigations and Pollution Prevention. Options for mitigating potential environmental impacts that might result from the Air Force disposing of property or from the implementation of the Proposed Action or alternatives by property recipients are presented and discussed. Since most potential environmental impacts would result directly from the reuse by others, the Air Force would not typically be responsible for implementing such mitigations. Full responsibility for these suggested mitigations, therefore, would be borne primarily by future property recipients or local government agencies. Mitigation suggestions for affected resource areas, where appropriate, are summarized along with the environmental impacts of the Proposed Action and alternatives in Table S-2. However, remediation of hazardous waste sites under the Installation Restoration Program (IRP) and other applicable regulatory programs is and will continue to be the responsibility of the Air Force.

PROPOSED ACTION

Local Community. Redevelopment of the excessed base property under the Proposed Action would result in an increase in employment and a slight decrease in population in the Region of Influence (ROI) compared to preclosure. The ROI consists of Licking County, with most increases affecting the communities of Newark and Heath. Reuse activities would increase employment levels by 1,197 direct jobs and 1,263 secondary jobs by 2016, resulting in a total ROI employment of 71,417 by 2016. With the Proposed Action, the ROI population would have a net decrease of 89 persons by 2016 compared to preclosure conditions resulting in a total ROI population of 145,234.

No noticeable changes to on-base land use would occur due to civilian redevelopment. Proposed on-base land uses would generally be compatible

Table S-1. Summary of Reuse-Related Influencing Factors in the ROI

Factor	Proposed Action			Industrial Alternative			No-Action Alternative		
	2001	2006	2016	2001	2006	2016	2001	2006	2016
Ground disturbance (acres by phase) ^(a)	0	0	0	0	0	0	0	0	0
Direct employment ^(a)	72	447	1,197	-1,675	-1,246	-387	-2,111	-2,111	-2,111
Secondary employment	379	674	1,263	-1,178	-934	-445	-1,424	-1,424	-1,424
Population	-300	-228	-89	-1,604	-1,553	-1,452	-1,654	-1,654	-1,654
Traffic (total daily trips) ^(a)	-250	500	2,100	-4,400	-3,350	-1,300	-5,500	-5,500	-5,500
Increase in water demand (MGD)	-0.11	0.34	0.80	-1.02	-0.77	-0.29	-1.26	-1.26	-1.26
Increase in wastewater production (MGD)	0.08	0.25	0.58	-0.73	-0.55	-0.21	-0.90	-0.90	-0.90
Increase in solid waste (tons/day)	1.80	4.80	10.90	-13.30	-10.20	-4.10	-16.40	-16.40	-16.40
Increase in electricity demand (MWH/day)	11.23	69.35	185.57	-307.54	-247.11	-126.16	-369.01	-369.01	-369.01
Increase in natural gas demand (MMCF/day)	0.12	0.40	0.97	-1.34	-1.03	-0.41	-1.65	-1.65	-1.65

Notes: Values shown represent increases/decreases over preclosure conditions in each year as a result of implementing that alternative.

(a) Values represent increases/decreases for on-base activities only.

MGD = million gallons per day

MMCF = million cubic feet

MWH = megawatt-hours

ROI = region of influence

Table S-2. Summary of Environmental Impacts and Suggested Mitigation from the Proposed Action and Reasonable Reuse Alternatives
Page 1 of 5

Resource Category	Proposed Action	Industrial Alternative	No-Action Alternative
Local Community			
• Land Use and Aesthetics	- Impacts: - Revisions to local zoning and plans required to reflect redevelopment plans	- Impacts: - Revisions to local zoning and plans required to reflect redevelopment plans	- Impacts: - Vacant land allowed to revert to its natural condition
• Transportation	- Impacts: - Increase of 2,100 daily vehicular trips	- Impacts: - Decrease of 1,300 daily vehicular trips	- Impacts: - Decrease of 5,500 daily vehicular trips
• Utilities Use	- Impacts: - Up to 46 percent increase in ROI utility use. Current systems would be able to accommodate these increased demands	- Impacts: - Decrease in base-related and ROI utility use	- Impacts: - Decrease in base-related and ROI utility use
Hazardous Materials and Hazardous Waste Management			
• Hazardous Materials Management	- Impacts: - Similar types and a slight increase in quantities of materials used. Compliance with applicable regulations would preclude significant impacts	- Impacts: - Similar quantities of materials used. Compliance with applicable regulations would preclude significant impacts	- Impacts: - Materials used for caretaker activities will be managed in compliance with applicable regulations
• Hazardous Waste Management	- Impacts: - Slight increase in quantities of wastes generated. Compliance with applicable regulations would preclude significant impacts	- Impacts: - Similar quantities of wastes generated. Compliance with applicable regulations would preclude significant impacts	- Impacts: - Wastes generated by caretaker activities will be managed in accordance with applicable regulations

Note: Impacts are based on the changes from preclosure baseline conditions, which are projected to occur as a result of implementing that alternative.
ROI = region of influence

Table S-2. Summary of Environmental Impacts and Suggested Mitigation from the Proposed Action and Reasonable Reuse Alternatives
Page 2 of 5

Resource Category	Proposed Action	Industrial Alternative	No-Action Alternative
Hazardous Materials and Hazardous Waste Management (Continued)			
Installation Restoration Program	Impacts: Possible reuse delays and land use restrictions due to remediation. Coordination between OL and planning agencies would minimize potential delays	Impacts: Possible reuse delays and land use restrictions due to remediation. Coordination between OL and planning agencies would minimize potential delays	Impacts: IRP remediation activities continued as needed
Storage Tanks	Impacts: USTs to be removed; aboveground storage tanks and oil/water separators to be emptied and cleaned New storage tanks required by new owner/operator subject to all regulations to avoid significant impacts	Impacts: USTs to be removed; aboveground storage tanks and oil/water separators to be emptied and cleaned New storage tanks required by new owner/operator subject to all regulations to avoid significant impacts	Impacts: Storage tanks removed or maintained in place according to required standards
Asbestos	Impacts: Management in accordance with applicable regulations to minimize potential risk to human health or the environment	Impacts: Management in accordance with applicable regulations to minimize potential risk to human health or the environment	Impacts: Continued management of asbestos in accordance with Air Force policy
Pesticide Usage	Impacts: Management in accordance with FIFRA and state guidelines would preclude significant impacts	Impacts: Management in accordance with FIFRA and state guidelines would preclude significant impacts	Impacts: Management in accordance with FIFRA and state guidelines would preclude significant impacts

Note: Impacts are based on the changes from preclosure baseline conditions, which are projected to occur as a result of implementing that alternative.

FIFRA = Federal Insecticide, Fungicide, and Rodenticide Act

OL = Operating Location

UST = underground storage tank

Table S-2. Summary of Environmental Impacts and Suggested Mitigation from the Proposed Action and Reasonable Reuse Alternatives
Page 3 of 5

Resource Category	Proposed Action	Industrial Alternative	No-Action Alternative
Hazardous Materials and Hazardous Waste Management (Continued)			
• Polychlorinated Biphenyls	- Impacts: - All federally regulated PCBs removed prior to base closure	- Impacts: - All federally regulated PCBs removed prior to base closure	- Impacts: - All federally regulated PCBs removed prior to base closure
• Radon	- Impacts: - No facilities registered radon levels above 4 pCi/l	- Impacts: - No facilities registered radon levels above 4 pCi/l	- Impacts: - No facilities registered radon levels above 4 pCi/l
• Medical/Biohazardous Waste	- Impacts: - Decrease in amounts generated. Proper management under applicable regulations would avoid significant impacts	- Impacts: - Decrease in amounts generated. Proper management under applicable regulations would avoid significant impacts	- Impacts: - No wastes would be generated
• Radioactive Materials	- Impacts: - Management of radioactive materials using all appropriate regulations would preclude any significant impacts	- Impacts: - All radioactive materials will be removed from base prior to closure	- Impacts: - All radioactive materials will be removed from base prior to closure
• Lead-Based Paint	- Impacts: - Potential exposure to lead-based paint in facilities constructed prior to or during 1978	- Impacts: - Potential exposure to lead-based paint in facilities constructed prior to or during 1978	- Impacts: - Potential exposure to lead-based paint in facilities constructed prior to or during 1978

Note: Impacts are based on the changes from preclosure baseline conditions, which are projected to occur as a result of implementing that alternative.

PCBs = polychlorinated biphenyls
pCi/l = picocuries per liter

Table S-2. Summary of Environmental Impacts and Suggested Mitigation from the Proposed Action and Reasonable Reuse Alternatives
Page 4 of 5

Resource Category	Proposed Action	Industrial Alternative	No-Action Alternative
Natural Environment			
• Geology and Soils	- Impacts: - No ground disturbance	- Impacts: - No ground disturbance	- Impacts: - No ground disturbance
• Water Resources	- Impacts: - No ground disturbance. Adequate water supply for limited on-base demand - Increase in ROI water demand would not affect water supply	- Impacts: - No ground disturbance. Reduced water demand	- Impacts: - No ground disturbance. Reduced water demand
• Air Quality	- Impacts: - Decrease in reuse-related emissions in 2006: NO_x: -3.71 tons/year VOC: -4.37 tons/year PM₁₀: 0 tons/year SO₂: 0 tons/year CO: -65.55 tons/year Air pollutant emissions would remain below preclosure levels during operations and would not affect the region's progress toward attainment of the ozone standard - No adverse impacts for other criteria pollutants	- Impacts: - Increase/decrease in reuse-related emissions in 2006: NO_x: 167.66 tons/year VOC: 89.15 tons/year PM₁₀: 0 tons/year SO₂: 12.31 tons/year CO: -140.76 tons/year Increased air pollutant emissions during operations would not produce an adverse impact or affect the attainment status of the area - No adverse impacts for other criteria pollutants	- Impacts: - Air pollutant emissions generated from caretaker activities would remain below preclosure conditions
• Biological Resources	- Impacts: - No impact to potential wetlands or threatened or endangered species	- Impacts: - No impact to potential wetlands or threatened or endangered species	- Impacts: - Potential increase in habitat value due to long-term decrease in human activity

Note: Impacts are based on the changes from preclosure baseline conditions, which are projected to occur as a result of implementing that alternative.

CO = carbon monoxide
NO_x = nitrogen oxides
PM₁₀ = particulate matter equal to or less than 10 microns in diameter
ROI = region of influence
SO₂ = sulfur dioxide
VOC = volatile organic compound

Table S-2. Summary of Environmental Impacts and Suggested Mitigation from the Proposed Action and Reasonable Reuse Alternatives
Page 5 of 5

Resource Category	Proposed Action	Industrial Alternative	No-Action Alternative
Natural Environment (Continued) Cultural Resources	- Impacts: No archaeological, Native American, or paleontological resources Potential adverse effects to one building potentially eligible for listing on the NRHP - Mitigations: Properties may be conveyed to non-federal owners with preservation covenants. SHPO and Advisory Council on Historic Preservation would be consulted during development and implementation of procedures and mitigation strategies. Prepare agreement document to establish acceptable mitigation measures	- Impacts: No archaeological, Native American, or paleontological resources Potential adverse effects to one building potentially eligible for listing on the NRHP - Mitigations: Properties may be conveyed to non-federal owners with preservation covenants. SHPO and Advisory Council on Historic Preservation would be consulted during development and implementation of procedures and mitigation strategies. Prepare agreement document to establish acceptable mitigation measures	- Impacts: One building potentially eligible for listing on the NRHP - Mitigations: None

Note: Impacts are based on the changes from preclosure baseline conditions, which are projected to occur as a result of implementing that alternative.
 NRHP = National Register of Historic Places
 SHPO = State Historic Preservation Officer

with each other. The West Gate would be opened to improve access to the western portion of the base. Reuse-related traffic would not degrade the level of service (LOS) on local roadways to unacceptable levels. Utility consumption associated with the Proposed Action would represent an increase to the ROI demand and could be accommodated by existing system capacities.

Hazardous Materials and Hazardous Waste Management. The quantities of hazardous materials and hazardous waste used and generated under the Proposed Action are expected to be slightly greater than preclosure conditions due to increased workloads. The responsibility of managing hazardous materials and hazardous wastes would shift from a single user to multiple, independent users. This may reduce the capability of responding to hazardous materials and hazardous waste spills and would increase the regulatory burden. Remediation of Resource Conservation and Recovery Act (RCRA) sites would not be affected by reuse; however, site remediation, if required, could result in short-term land use restrictions or reuse delays.

Reuse activities are not expected to affect remediation under the IRP, which is proceeding according to Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) regulations. However, reuse of some properties may be delayed or land use restrictions may be required due to the extent and type of site contamination and future IRP remediation activities. Based on the results of IRP investigations, the Air Force may, where appropriate, place limits on land reuses through deed restrictions on conveyances and use restrictions on leases. Prior to property disposal, existing underground storage tanks (USTs) would be deactivated and removed in accordance with all applicable regulations with the exception of the UST at Facility 89 which would remain in place. Unused aboveground storage tanks would be purged and assessed, and remedial action taken, if necessary. Oil/water separators would be pumped, cleaned, and assessed, and remedial action taken, if necessary. Removal of USTs, aboveground storage tanks, and oil/water separators would reduce the likelihood of a release of hazardous substances to the environment. All of the polychlorinated biphenyl (PCB) equipment and PCB-contaminated equipment has been removed from the base with the exception of enclosed systems (i.e., small capacitors and light ballasts). However, these systems are not likely to result in a PCB release to the environment. Generation of medical/biohazardous waste would decrease. Radioactive materials would be properly permitted by operators.

Proper management of asbestos remaining in existing facilities would minimize the potential risk to human health and the environment. Renovation of structures with asbestos-containing material (ACM) would be subject to applicable regulations and National Emission Standards for Hazardous Air Pollutants (NESHAP). Pesticide usage would remain the same and be subject to the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) and state guidelines. No radon levels registered above 4 picocuries

per liter during testing. Generation of medical/biohazardous waste would decrease. Recipients of facilities constructed prior to or during 1978 would be notified that lead-based paint may exist on the premises. Renovation activities for facilities containing lead-based paint would be subject to all applicable regulations.

Natural Environment. The Proposed Action would have minimal effects on soil and water resources as only routine maintenance activities are expected to occur. No ground-disturbing activities are planned. There is an abundant water supply from groundwater sources in the ROI.

Since there would be no additional reuse-related sources and more stringent exhaust requirements would be in place, air pollutant emissions generated from the Proposed Action would be equal to or less than those at preclosure and would not interfere with the region's progress in reaching and maintaining the NAAQS for ozone. In addition, the Proposed Action would not cause any new violations of the NAAQS for the other criteria pollutants.

Negligible effects to biological resources would occur under the Proposed Action. Property disposal activities could affect Building 4, which is potentially eligible for listing in the National Register of Historic Places (NRHP). However, preservation covenants with minimal effect to reuse could be placed in the transfer documents to reduce impacts, associated with conveyance to a non-federal entity, to a nonadverse level.

INDUSTRIAL ALTERNATIVE

Local Community. Redevelopment of the base property under this alternative would result in a decrease in employment and population in the ROI compared to preclosure. Reuse activities would cause a decrease in employment levels by 387 direct jobs and 445 secondary jobs by 2016, resulting in a total ROI employment of 68,125 by 2016. The Industrial Alternative would result in a net decrease of 1,452 persons over preclosure conditions by 2016 resulting in a total ROI population of 143,871.

No noticeable changes to on-base land use would occur due to civilian redevelopment. Proposed on-base land uses would generally be compatible with each other. The West Gate would be opened to improve access to the western portion of the base. Reuse-related traffic would not degrade the LOS on local roadways to unacceptable levels. Utility consumption associated with this alternative could be accommodated by existing system capacities.

Hazardous Materials and Hazardous Waste Management. The quantities of hazardous materials and hazardous waste used and generated under this alternative are expected to be slightly less than preclosure conditions. The responsibility of managing hazardous materials and hazardous wastes would shift from a single user to multiple, independent users. This may reduce the

capability of responding to hazardous materials and hazardous waste spills and would increase the regulatory burden. Remediation of RCRA sites would not be affected by reuse; however, site remediation, if required, could result in short-term land use restrictions or reuse delays.

Reuse activities are not expected to affect remediation under the IRP, which is proceeding according to CERCLA regulations. However, reuse of some properties may be delayed or land use restrictions may be required due to the extent and type of site contamination and future IRP remediation activities. Based on the results of IRP investigations, the Air Force may, where appropriate, place limits on land reuses through deed restrictions on conveyances and use restrictions on leases. Prior to property disposal, existing USTs (except for the UST at Facility 89) would be deactivated and removed in accordance with all applicable regulations. Unused aboveground storage tanks would be purged and assessed, and remedial action taken, if necessary. Oil/water separators would be pumped, cleaned, and assessed, and remedial action taken, if necessary. Removal of USTs, aboveground storage tanks, and oil/water separators would reduce the likelihood of a hazardous substance release to the environment. All of the PCB equipment and PCB-contaminated equipment has been removed from the base with the exception of enclosed systems (i.e., small capacitors and light ballasts). However, these systems are not likely to result in a PCB release to the environment.

Proper management of asbestos remaining in existing facilities would minimize the potential risk to human health and the environment. Renovation of structures with ACM would be subject to applicable regulations and NESHAP. Pesticide usage would remain the same and would be subject to FIFRA and state guidelines. No radon levels above recommended guidelines were identified. Generation of medical/biohazardous waste would decrease. Radioactive materials would be properly permitted by operators. Recipients of facilities constructed prior to or during 1978 would be notified that lead-based paint may exist on the premises. Renovation activities would be subject to all applicable regulations.

Natural Environment. The Industrial Alternative would have minimal effects on soil and water resources as only routine maintenance activities are expected to occur. No ground-disturbing activities are planned. There is an abundant water supply from groundwater sources in the ROI.

Air pollutant emissions generated from the Industrial Alternative would be greater than those at preclosure except for carbon monoxide. Increased air pollutant emissions would not produce an adverse impact or affect the attainment status of the area. In addition, this alternative would not cause any new violations of the NAAQS for the other criteria pollutants.

Negligible effects to biological resources would occur under this alternative. Property disposal activities could affect Building 4, which is potentially eligible for listing in the NRHP. However, preservation covenants with minimal effect to reuse could be placed in the transfer documents to reduce impacts associated with conveyance to a non-federal entity to a nonadverse level.

NO-ACTION ALTERNATIVE

Local Community. The base would not be put to further use and would be placed under caretaker status. The base would be placed in a condition intended to limit deterioration and ensure public safety. Caretaker activities would consist of resource protection, grounds maintenance, existing utility operations as necessary, and building care. Approximately five direct jobs and two secondary jobs would remain at the base after closure. The number of jobs would remain unchanged throughout the 20-year analysis period. No impacts to local roadways or utilities are expected.

Hazardous Materials and Hazardous Waste Management. Reduced quantities of hazardous materials and pesticides would be used to support facility and grounds maintenance activities. The reduction in the use of these substances would also reduce the likelihood of a release to the environment. The Air Force Base Conversion Agency (AFBCA) Operating Location (OL) would be responsible for hazardous materials and waste management in accordance with applicable regulations. RCRA and IRP investigations and remediation would continue to be managed by the OL. USTs, aboveground storage tanks, and oil/water separators would be removed or maintained in place according to required standards. Removal of these systems would reduce the likelihood of a hazardous substance release to the environment. All of the PCB equipment and PCB-contaminated equipment has been removed from the base with the exception of enclosed systems (i.e., small capacitors and light ballasts). However, these systems are not likely to result in a PCB release to the environment. ACM would be managed in accordance with Air Force policy to protect human health and the environment. Pesticide usage would continue to be managed in accordance with FIFRA and state guidelines. Only enclosed systems (i.e., small capacitors and light ballasts) would remain on base and are not likely to result in a release to the environment. All medical/biohazardous wastes and radioactive materials would be removed from the base prior to closure. Facilities constructed prior to or during 1978 may contain lead-based paint and would be secured.

Natural Environment. Little to no ground disturbance would occur under this alternative; therefore, impacts to geology and soils, water resources, air quality, biological resources, and cultural resources would be negligible. Biological resources may be enhanced due to the reduction in human activity on the property. Adequate caretaker maintenance would preclude

deterioration of the property potentially eligible for listing in the NRHP. The requirements for management of natural and cultural resources would be regulated under NEPA and the National Historic Preservation Act.

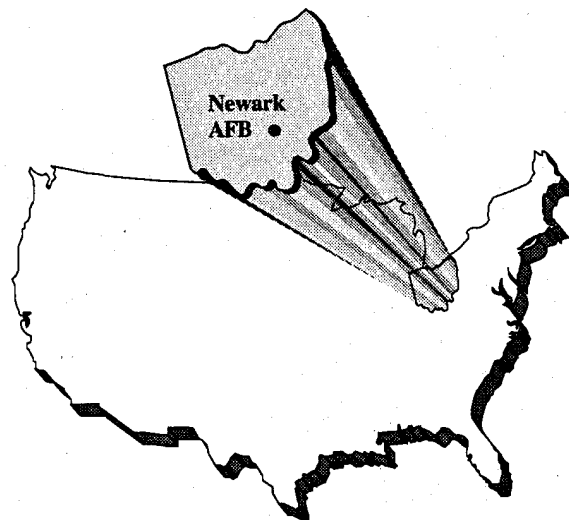


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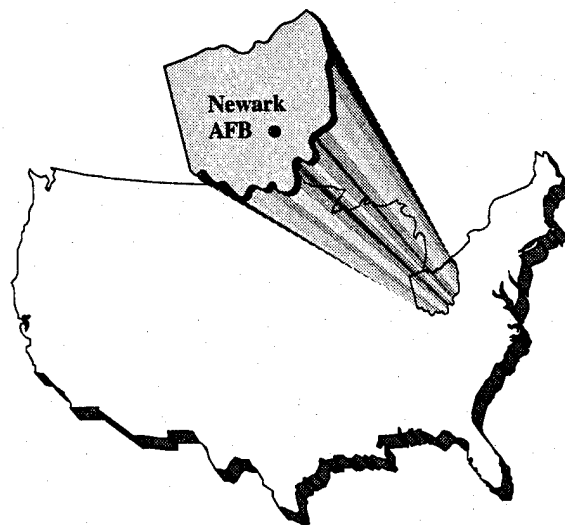
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CHAPTER 1

PURPOSE OF AND NEED FOR ACTION

1.0 PURPOSE OF AND NEED FOR ACTION

This environmental assessment (EA) examines the potential for impacts to the environment as a result of the disposal and reuse of Newark Air Force Base (AFB), Ohio. This document has been prepared in accordance with the National Environmental Policy Act (NEPA) of 1969 and the Council on Environmental Quality (CEQ) regulations implementing NEPA. Appendix A presents a glossary of terms, acronyms, and abbreviations used in this document.

1.1 PURPOSE OF AND NEED FOR

Due to the changing international political scene and the resultant shift toward a reduction in defense spending, the Department of Defense (DOD) must realign and reduce its military forces pursuant to the Defense Base Closure and Realignment Act (DBCRA) of 1990 (Public Law [P.L.] 101-510, Title XXIX). DBCRA established new procedures for closing or realigning military installations in the United States.

DBCRA established an independent Defense Base Closure and Realignment Commission (hereafter "Commission") to review the Secretary of Defense's base closure and realignment recommendations. After reviewing these recommendations, the 1993 Commission forwarded its recommended list of base closures and realignments to the President, who accepted the recommendations and submitted them to Congress on July 2, 1993. Since Congress did not disapprove the recommendations within the time period provided under DBCRA, the recommendations have become law.

Because Newark AFB was on the Commission's list, the decision to close the base is final. Newark AFB is scheduled to close in September 1996.

To fulfill the requirement of reducing defense expenditures, the Air Force plans to dispose of excess and surplus real property and facilities at Newark AFB. DBCRA requirements relating to disposal of excess and surplus property include:

- Environmental restoration of the property as soon as possible with funds made available for such restoration
- Consideration of the local community's reuse plan prior to Air Force disposal of the property
- Compliance with specific federal property disposal laws and regulations.

The Air Force action, therefore, is to dispose of Newark AFB property and facilities. Usually, this action is taken by the Administrator of General

Services. However, DBCRA required the Administrator to delegate to the Secretary of Defense the authorities to utilize excess property, dispose of surplus property, convey airport and airport-related property, and determine the availability of excess or surplus real property for wildlife conservation purposes. The Secretary of Defense has since redelegated these authorities to the respective Service Secretaries.

1.2 DECISIONS TO BE MADE

The purpose of this EA is to provide information for interrelated decisions concerning the disposition of Newark AFB. The EA is to provide the decision maker with sufficient evidence and analysis for determining whether to prepare an environmental impact statement (EIS) or a Finding of No Significant Impact (FONSI).

The methods of disposal granted by the Federal Property and Administrative Services Act of 1949 and the Surplus Property Act of 1944 and implemented in the Federal Property Management Regulations (FPMR) are:

- Transfer to another federal agency
- Public benefit conveyance to an eligible entity
- Negotiated sale to a public body for a public purpose
- Competitive sale by sealed bid or auction.

In addition, amendments in the National Defense Authorization Act for 1994 (P.L. 103-160), Chapter XXIX, authorize conveyances of surplus property to the local redevelopment authority at discounted prices when a public benefit will result.

The EA analyzes the potential environmental consequences of the Air Force's disposal of the installation using all of the above-mentioned procedures and by portraying specific future uses of the property and facilities by others. Several alternative scenarios were used to group specific land uses and to examine the environmental effects of redevelopment of Newark AFB. This methodology was employed because, although the disposal will have few, if any, direct effects, future use and control of use by others will create indirect effects. This EA, therefore, seeks to analyze specific redevelopment scenarios to determine the potential indirect environmental effects of Air Force decisions.

1.3 DISPOSAL PROCESS

DBCRA requires compliance with NEPA (with some exceptions) in the implementation of the base closures and realignments. Among the issues that were excluded from NEPA compliance are:

- The selection of installations for closure or realignment
- Analysis of closure impacts.

The Air Force goal is to dispose of Newark AFB property through transfer and/or conveyance to other government agencies or private parties. The Proposed Action in the EA reflects the community's goal for base reuse, which is to privately operate current base activities. Also known as privatization-in-place, this reuse would include maintenance and repair of inertial and navigation guidance systems, management of the metrology calibration (METCAL) program, and operation of the Measurement Standards Laboratory. In addition, a Defense Finance and Accounting Service (DFAS) office will be located at Newark AFB.

The Air Force has based the Proposed Action on plans developed by the Newark-Heath Air Force Base Reuse Commission (NHRC) for the purpose of conducting the required environmental analysis. The Air Force also developed additional reasonable alternatives. Subject to any terms of transfer or conveyance, the recipients of the property, planning and zoning agencies, elected officials, and other factors would ultimately determine the reuse of the property. In addition to the Proposed Action, two alternatives have been identified, an Industrial Alternative and a No-Action Alternative; the No-Action Alternative would not involve reuse.

The Secretary of the Air Force has full discretion in determining how the Air Force will dispose of the property. DBCRA requires the Air Force to comply with federal property disposal laws and FPMR (41 Code of Federal Regulations [CFR] 101-47). The Services were authorized to issue additional regulations, if required, to implement their delegated authorities, and the Air Force has issued supplemental regulations 41 CFR 132. Another provision of the act requires the Services to consult with the state governor and heads of local governments or equivalent political organizations for the purpose of considering any plan for the use of such property by the local community concerned. Accordingly, the Air Force is working with state authorities and the NHRC to meet this requirement.

In some cases compliance with environmental laws may delay reuse of some parts of the base. Until property can be disposed of, the Air Force may execute interim or long-term leases to allow reuse to begin as quickly as possible. The Air Force would structure the leases to provide the lessees with maximum control over the property, consistent with the terms of the final disposal. Restrictions may be necessary to ensure protection of human health and the environment, to allow implementation of required remedial actions, and to maintain compliance with the terms of the final disposal. Environmental analysis in the EA encompasses those possible interim or long-term leasing decisions.

DOD has proposed Newark AFB as the site of a DFAS satellite office in an effort to consolidate approximately 300 offices, scattered at military installations nationwide, to 25 locations. The DFAS may use this document to tier more site-specific environmental analysis to fulfill their NEPA requirements for establishing a satellite office at Newark AFB.

1.4 ENVIRONMENTAL IMPACT ANALYSIS PROCESS

NEPA established a national policy to protect the environment and ensure that federal agencies consider the environmental effects of actions in their decision making. The CEQ is authorized to oversee and recommend national policies to improve the quality of the environment, and has published regulations that describe how NEPA should be implemented. The CEQ regulations encourage federal agencies to develop and implement procedures that address the NEPA process in order to avoid or minimize adverse effects on the environment. The Air Force Instruction (AFI) 32-7061 for the Environmental Impact Analysis Process (EIAP) addresses implementation of NEPA as part of the Air Force planning and decision-making process.

An EA is a concise public document, for which a federal agency is responsible, that serves to briefly provide sufficient analysis for determining whether to prepare an EIS or a FONSI. The EA can also facilitate the preparation of an EIS if one is necessary. If it is determined that the action qualifies for a FONSI, the FONSI will be made known to the affected public before starting the action (AFI 32-7061).

Prior to the decision to prepare an EA, the Air Force published a Notice of Intent (NOI) to prepare an EIS for the disposal and reuse of Newark AFB in the Federal Register on October 29, 1993 (see Appendix B). After publication of the NOI, the Air Force began notification of public scoping through the local media, as well as through letters to federal, state, and local agencies and officials, and interested groups and individuals. A public meeting was held on May 10, 1994, at the City Hall, in Heath, Ohio, to solicit comments and concerns from the general public on the disposal and reuse of Newark AFB. Representatives of the Air Force presented an overview of the meeting's objectives, agenda, and procedures, and described the process and purpose for the development of a disposal and reuse EIS. In addition to verbal comments, written comments were received during the scoping process. These comments, as well as information from an initial scoping meeting held November 18, 1993, experience with similar programs, and NEPA requirements, were used to determine the scope and direction of studies/analysis to be accomplished. After review of the information obtained during scoping, it was determined that, based on the few issues raised and the limited scope of reuse activities, an EA will be prepared. Subsequent to this decision, the Air Force published in the Federal Register that an EIS will not be prepared for the disposal and reuse of Newark AFB if the decision maker determines, through the analysis provided in the EA, that the action qualifies for a FONSI (Appendix B).

1.5 ORGANIZATION OF THIS EA

This EA is organized into the following chapters and appendices: Chapter 2 provides a description of the Proposed Action and limited alternatives to the Proposed Action for reuse of Newark AFB property. Chapter 2 also briefly

discusses alternatives eliminated from further consideration. Finally, Chapter 2 provides a comparative summary of the effects of the Proposed Action and alternatives with respect to effects on the local community and the natural environment. Chapter 3 presents the affected environment under the baseline conditions of preclosure, providing a basis for analyzing the impacts of the Proposed Action and alternatives. Preclosure conditions describe a point in time at or near the closure announcement and depict an active base condition. The results of the environmental analysis are presented in Chapter 4 and form the basis for the summary table at the end of Chapter 2. Chapter 5 lists individuals and organizations consulted during the preparation of the EA; Chapter 6 provides a list of the document's preparers; and Chapter 7 contains references.

In addition to the main text, the following appendices are included in this document:

- Appendix A - a glossary of terms, acronyms, and abbreviations used in this document
- Appendix B - the NOI to prepare an EIS and the NOI to prepare this disposal and reuse EA in lieu of the EIS
- Appendix C - an Installation Restoration Program (IRP) bibliography
- Appendix D - a description of the methods used to evaluate the impacts of base reuse on resources of the local community and the environment
- Appendix E - a list of current environmental permits held by Newark AFB
- Appendix F - Air Force policy for management of asbestos-containing material (ACM) at closure bases and results of asbestos survey
- Appendix G - biological resources
- Appendix H - air quality analysis methods and air emissions inventory for Newark AFB
- Appendix I - agency letters and consultation.

1.6 RELATED ENVIRONMENTAL DOCUMENTS

The environmental documents listed below have been or are being prepared separately and address environmental issues at Newark AFB. These documents provided supporting information for the environmental analysis.

- Investigation of Proffered Donation of 13.39 acres to Newark Air Force Station
- Hydrologic Investigation, Risk Assessment, and Remedial Alternatives Evaluation of the Former Facility 87 Area at Newark AFB
- Basewide Environmental Baseline Survey for Newark AFB
- IRP Bibliography (Appendix C).

1.7 FEDERAL PERMITS, LICENSES, AND ENTITLEMENTS

Representative federal permits, licenses, and entitlements that may be required of recipients of Newark AFB for purposes of redevelopment are presented in Table 1.7-1. This table is presented for illustrative purposes only and does not include state or local permits, licenses, or entitlements that may be required.

Table 1.7-1. Representative Federal Permits, Licenses, and Entitlements Potentially Required for Reusers or Developers of Disposed Base Property
Page 1 of 2

Federal Permit, License, or Entitlement	Typical Activity, Facility, or Category of Persons Required to Obtain the Federal Permit, License, or Entitlement	Authority	Regulatory Agency
Title V permit under the CAA	Any major source (source that emits more than 100 tons per year of criteria pollutant in nonattainment area for that pollutant or is otherwise defined in Title I of CAA as a major source); affected sources as defined in Title IV of CAA; sources subject to Section 111 regarding New Source Performance Standards; sources of air toxics regulated under Section 112 of CAA; sources required to have new source or modification permits under Parts C or D of Title I of CAA; and any other source designated by U.S. EPA regulations	Title V of CAA, as amended by the 1990 CAA Amendments	U.S. EPA; Ohio EPA
NPDES permit	Discharge of pollutant from any point source into waters of the United States	Section 402 CWA, 33 U.S.C. §1342	U.S. EPA; Ohio EPA
Section 404 (Dredge and Fill) Permit	Any project activities resulting in the discharge of dredged or fill material into bodies of water, including wetlands, within the United States	Section 404 CWA, 33 U.S.C. §1344	U.S. Department of Defense - Army Corps of Engineers, in consultation with U.S. EPA
Hazardous waste TSDF permit	Owners or operators of a new or existing hazardous waste TSDF	RCRA, as amended; 42 U.S.C. §6901; 40 CFR 270	U.S. EPA; Ohio EPA

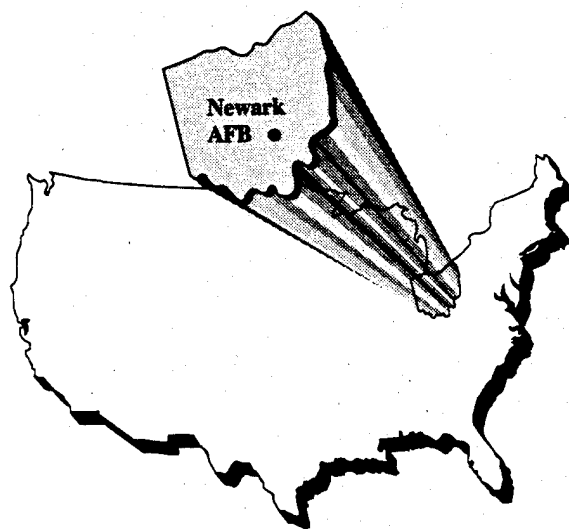
CAA = Clean Air Act
 CFR = Code of Federal Regulations
 CWA = Clean Water Act
 EPA = Environmental Protection Agency
 NPDES = National Pollutant Discharge Elimination System
 RCRA = Resource Conservation and Recovery Act
 TSDF = Treatment, Storage, and Disposal Facility
 U.S.C. = U.S. Code

Table 1.7-1. Representative Federal Permits, Licenses, and Entitlements Potentially Required for Reusers or Developers of Disposed Base Property
Page 2 of 2

Federal Permit, License, or Entitlement	Typical Activity, Facility, or Category of Persons Required to Obtain the Federal Permit, License, or Entitlement	Authority	Regulatory Agency
U.S. EPA identification number	Generators or transporters (off-site transport) of hazardous waste	40 CFR 262.10 (generators); 40 CFR 263, Subpart B (transporters)	U.S. EPA
Archaeological Resources Protection Act permit	Excavation and/or removal of archaeological resources from public lands or Indian lands and carrying out activities associated with such excavation and/or removal	Archaeological Resources Protection Act of 1979, 16 U.S.C. §470cc	U.S. Department of the Interior - National Park Service
Endangered Species Act Section 10 permit	Taking endangered or threatened wildlife species; engaging in certain commercial trade of endangered or threatened plants or removing such plants on property subject to federal jurisdiction	Section 10 of Endangered Species Act, 16 U.S.C. §1539; 50 CFR 17 Subparts C, D, F, and G	U.S. Department of the Interior - Fish and Wildlife Service

CFR = Code of Federal Regulations
EPA = Environmental Protection Agency
U.S.C. = U.S. Code

Newark AFB Disposal and Reuse EA



CHAPTER 2

ALTERNATIVES INCLUDING THE PROPOSED ACTION

2.0 ALTERNATIVES INCLUDING THE PROPOSED ACTION

2.1 INTRODUCTION

This section describes the Proposed Action, an alternative to the Proposed Action, and the No-Action Alternative.

Generally, the Administrator of the General Services Administration (GSA) has authority to dispose of excess and surplus real property belonging to the federal government. With regard to closure bases, however, the DBCRA requires the GSA Administrator to delegate disposal authority to the Secretary of Defense. The FPMR, which govern property disposal methods associated with base closure, allow the Secretary of Defense to dispose of closure property by transfer to another federal agency, by public benefit conveyance, by negotiated sale to state or local government, by economic development conveyance to the local redevelopment authority, and by public sale at auction or sealed bid. These methods, or a combination of them, could be used to dispose of property at Newark AFB.

Provisions of DBCRA and FPMR require that the Air Force first notify other DOD departments of the availability of property at closing or realignment bases. Any proposals from these departments for the transfer of base property are given priority consideration.

Should the Air Force identify any surplus property at the base, the NHRC has selected to address homeless assistance needs through provisions in the Base Closure Community Redevelopment and Homeless Assistance Act of 1994, which amended the DBCRA of 1990 (P.L. 101-510). Under this act, the NHRC will work with the U.S. Department of Housing and Urban Development (HUD) to attempt to meet homeless needs.

Native American tribes have potential statutory rights relating to both "excess" and "surplus" federal property. Excess real property may be transferred to the Department of the Interior (DOI) pursuant to 40 U.S. Code (U.S.C.) 483(a)(1) under the following three conditions: (1) DOI requests the property; (2) Air Force approves the DOI request based on an evaluation of criteria contained in the FPMR at 41 CFR 101-47; and (3) DOI pays Fair Market Value (FMV) for the land or obtains an FMV waiver from the Office of Management and Budget. Former reservation property which was utilized by a military department for military basing purposes may be transferred to the Secretary of the Interior pursuant to 40 U.S.C. 483(a)(2), after the property becomes excess to the needs of the DOD. Under the provisions of the Indian Self Determination Act, the Secretary of the Interior may contract with a tribe for the tribe to execute certain functions of the DOI in providing services to the members of the tribe. For the execution of these contracts, the tribe may use available federal facilities under the control of the DOI.

Moreover, the DOI may request the transfer of excess or surplus federal real or personal property to DOI for these purposes (25 U.S.C. 450j[f](3)). Surplus federal real property may be transferred to Indian tribes under one of the public benefit conveyance authorities if the tribe is eligible for such public benefit or reduced cost transfer. Notwithstanding the aforementioned disposal methods, Native American tribes may also acquire surplus federal real property by public sale much like any other private entity.

Because current mission activities may continue and the property has not been determined excess, a decision was made to delay federal screening until after privatization-in-place requirements are known. In addition, DOD has proposed Newark AFB as the site of a DFAS satellite office as part of an effort to consolidate approximately 300 offices, scattered at military installations nationwide, at 25 locations. Therefore, DFAS has been included under the Proposed Action in this EA. DFAS is accounted for in the tables and figures in Section 2.2 as commercial (office) for analysis purposes.

An Air Force Base Conversion Agency (AFBCA) Operating Location (OL) has been established at Newark AFB. The responsibilities of the OL include coordinating post-closure activities with the active Air Force closure activities, establishing a caretaker force to maintain Air Force-controlled properties after closure, and managing the remediation activities of contaminated sites. For the purposes of environmental analysis, it was assumed that this team would consist of approximately five people at the time of closure. The OL, as used in this document, may refer to either AFBCA or non-federal personnel.

In some cases, contractor organizations (i.e., grounds maintenance) may have distinct responsibilities. For example, under the No-Action Alternative the non-federal contractor personnel would be responsible for the management and disposition of their own hazardous materials and waste. The Air Force OL would be responsible for inspection and oversight to ensure that hazardous substance practices on Air Force-controlled property are in compliance with pertinent regulations.

The following limited reuse alternatives have been developed.

- The **Proposed Action** focuses on the continuation and expansion of current base activities under the management of a civilian contractor and the addition of a DFAS satellite office. Continued activities would include repair and maintenance of guidance systems with expansion, including other similar DOD and civilian activities; the METCAL program would continue under DOD management. Continuation of base activities under civilian management is also referred to as privatization-in-place. Other land uses include institutional (educational), commercial (office), public facilities/recreation, and vacant land.

- The **Industrial Alternative** proposes the use of Building 4 and other support buildings for manufacturing and associated warehousing. Industrial uses would be complemented by commercial, public facilities/recreation, and vacant land. Current mission activities would be contracted out and moved to a different location.
- The **No-Action Alternative** would result in the property being placed in caretaker status. The property would not be put to further use. Current mission activities would be contracted out and moved to a different location.

In order to accomplish the impact analysis for disposal and reuse, several general assumptions were made. These assumptions include on-site employment and population changes arising from implementation of each reuse plan, consistent land use designations, transportation and utility effects of each proposal, and anticipated phasing of the various elements of each reuse plan (as measured at the September 1996 closure date and at the closure date plus 5, 10, and 20 years). Details regarding the generation of these assumptions are found in Appendix D, Methods of Analysis. Specific assumptions developed for individual reuse plans are identified in the discussion of each proposal within Sections 2.2 and 2.3.

During the development of alternatives addressed in the EA, the Air Force considered the compatibility of future land uses with current site conditions that may restrict reuse activities to protect human health and the environment. These conditions include potential contamination from past releases of hazardous substances and Air Force efforts to remediate the contamination under the IRP. IRP remediation at Newark AFB and other environmental studies may result in lease/deed restrictions that limit reuse options at certain locations within the base. Additionally, the Air Force may retain access rights to these sites to implement IRP remediation (e.g., temporary easement for access to monitoring wells).

2.2 DESCRIPTION OF PROPOSED ACTION

Section 2905(b)(2)(E) of DBCRA requires the Air Force, as part of the disposal process, to consult with the applicable state governor, heads of local governments, or equivalent political organizations for the purposes of considering any plan for the use of such property by the local community. Air Force policy is to encourage timely community reuse planning by offering to use the community's plan for reuse or development of the land and facilities as the Air Force's Proposed Action in the EA.

The NHRC was established in August 1993 by the Heath City Council to develop a reuse plan for Newark AFB. The city of Newark and the county of Licking have adopted resolutions supporting the establishment of the NHRC.

The NHRC consists of seven commission members appointed by the Mayor of Heath.

In March 1995 the NHRC submitted to the Air Force a reuse plan consisting of privatization-in-place alternatives and other potential reuses for the base property. The plan addressed the following:

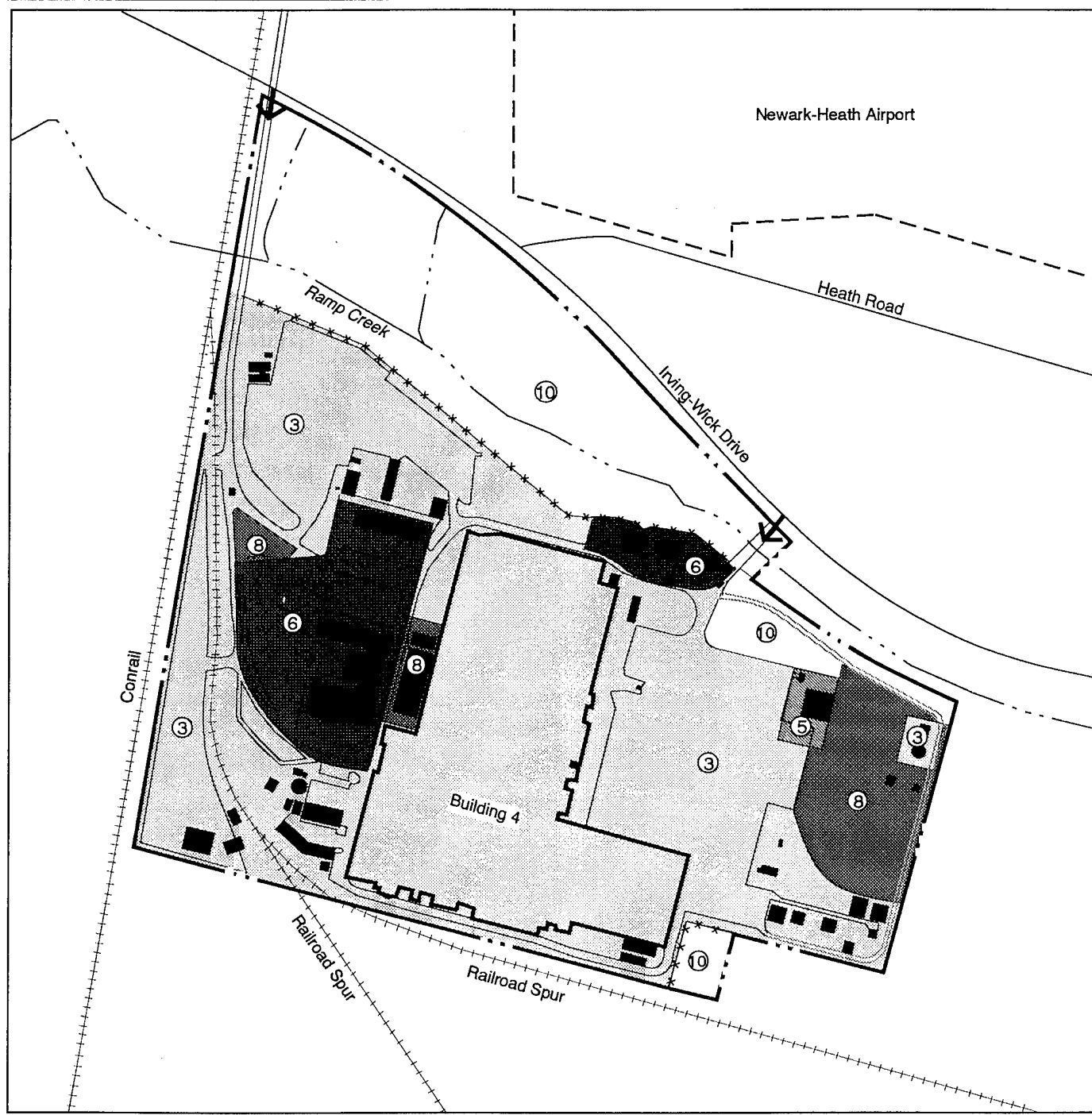
- Goals and objectives/strategy
- Uses of base facilities
- Projected workload and predicted increase in employment.

The Air Force has used this document to develop the Proposed Action for environmental analysis. The land uses presented in the Proposed Action (Figure 2.2-1) focus on the reuse of Building 4 for privatization-in-place of current base activities and the use of the administrative/headquarters building for a DFAS operation. Centrally located, Building 4 comprises 85 percent of the base's building space including parking. Building 4 houses the Aerospace Guidance and Metrology Center (AGMC), which maintains and repairs guidance systems and manages the Air Force METCAL program. Current guidance system repair and maintenance activities at the base would be contracted to a non-federal entity; transition of management responsibilities would begin in November 1995. Management of the METCAL component currently at Newark AFB would remain under DOD control. In addition to the industrial classification of Building 4, other land uses include institutional (educational), commercial (office), public facilities/recreation, and vacant land. The acreage associated with each land use category is provided in Table 2.2-1. All acreages used in this document are approximate.

Table 2.2-1. Land Use Acreage - Proposed Action

Land Use	Acreage
Industrial	41
Institutional (educational)	1
Commercial (office)	7
Public facilities/recreation	4
Vacant land	17
Total	70

Prior to deed transfer of the property, the Air Force may lease the property under a long-term agreement until requirements of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Section 120(h)(3) are met. See Section 4.3 for a discussion of CERCLA issues as they relate to reuse.



EXPLANATION

- | | |
|-------------------------------|---------------------------------|
| ① Airfield * | ⑥ Commercial (Office) |
| ② Aviation Support * | ⑦ Residential * |
| ③ Industrial | ⑧ Public Facilities/ Recreation |
| ④ Institutional (Medical) * | ⑨ Agriculture * |
| ⑤ Institutional (Educational) | ⑩ Vacant Land |

- ← Access Point
- Base Boundary
- Newark-Heath Airport Boundary
- *** Fence

Proposed Action (Privatization-in-Place)



* Standard land use designation not applicable to this figure.

Figure 2.2-1

When specific data were not available in the NHRC planning documents, assumptions were made to support the analysis as follows:

- Land use acreage
- Reuse plan phasing
- Traffic generation and daily trip projections
- Utility requirement projections
- Proposed roadway access points
- Employment and population projections
- Employees work in shifts.

The amount of existing building retention through 2016 for each land use under the Proposed Action is provided in Table 2.2-2. No building demolition is proposed. No land areas would be disturbed by construction of buildings, infrastructure improvements, or other operational activities under the Proposed Action.

Table 2.2-2. Building Development - Proposed Action

Land Use	Existing Building Retention (in thousands of square feet of floor space)
Industrial	802
Institutional (educational)	5
Commercial (office)	57
Public facilities/recreation	18
Vacant land	0
Total	882

Note: No building demolition is proposed.

2.2.1 Industrial

The industrial land use area contains 41 acres, or 59 percent of the base property, in two parcels and includes Building 4 for privatization-in-place of current base activities.

Privatization-in-place operations would include the repair and maintenance of inertial and navigational guidance systems for missiles and aircraft. Other activities would include operation of the METCAL laboratory located in the lower levels of Building 4. This laboratory technically and procedurally directs the integrated measurement system, as well as the design and calibration of measurement standards used in all precision measurement equipment laboratories. Other DOD and similar civilian high-technology or metrology reuses would also be conducted at the facility. This increased workload would be accommodated through shift work. The Radiation, Detection, Indication and Computation (RADIAC) laboratory, located underground in the southeast portion of the base, would continue

operations. Laboratory activities include the use of radioactive sources to calibrate instruments.

Other industrial use areas include storage buildings in the southeast and southwest corners of the base, and the sanitary sewage lift station in the northwest corner of the base. The vehicle maintenance and storage buildings, located northwest of Building 4, would continue to be utilized for their designed purposes. The fire station, including an emergency medical service, would continue operations to serve the local area. The second industrial parcel in the northeast corner of the base contains a water tank and pump station for base fire suppression. Reuse of these buildings would continue through the closure date (September 1996), with operations continuing and expanding under civilian management.

2.2.2 Institutional (Educational)

Educational activities (child-care) would continue to be conducted at the child-care center located southeast of the East Gate. This parcel is approximately 1 acre, or 1 percent of the base property, and contains classrooms, a playground, and tornado shelter. Reuse would occur immediately after the transition date.

2.2.3 Commercial (Office)

The proposed commercial (office) land use area encompasses two parcels covering 7 acres, or 10 percent of the base. A 1-acre parcel adjacent to the East Gate includes the Base Exchange and Pass and Identification office, which would be utilized as office space. A 6-acre parcel immediately west of Building 4 includes the administrative/headquarters building that would be utilized by DFAS for administrative functions. This building and the former medical aid station would be renovated for office use. DFAS would utilize existing base roadways and approximately 200 parking spaces adjacent to the administrative/headquarters building. Commercial and administrative facilities would be fully utilized.

2.2.4 Public Facilities/Recreation

The public facilities/recreation land use category utilizes existing recreation facilities and includes three parcels totaling 4 acres, or 6 percent of the base area. The first parcel, in the eastern portion of the base, includes a tennis court, volleyball court, softball field, and picnic facilities. The second parcel consists of the gymnasium facilities adjacent to the west side of Building 4. The third parcel consists of the static display area on the western side of the base. Recreational reuse of these facilities would occur immediately after the transition date.

2.2.5 Vacant Land

The vacant land use category consists of two parcels totaling 17 acres, or 24 percent of the base. The first parcel includes the land north of Ramp Creek and east of the East Gate. The undeveloped 14 acres north of Ramp Creek would be conveyed to the local airport authority and would remain vacant to provide a safe runway approach to the Newark-Heath Airport. The area east of the East Gate would remain as open space. The second parcel near the southeast corner of Building 4 would remain vacant.

2.2.6 Employment and Population

The Proposed Action would generate approximately 3,313 direct jobs, working in shifts, by 2016. Employment effects are shown in Table 2.2-3. There would be no on-site population associated with the Proposed Action.

Table 2.2-3. On-Site Employment and Population - Proposed Action

	Closure (September 1996)	2001	2006	2016
Direct employment	1,500	2,188	2,563	3,313
On-site population	0	0	0	0

2.2.7 Transportation

Under the Proposed Action, access from Irving-Wick Drive would be provided by the two existing gated entrances. Based on land use and on-site employment projections, average daily vehicular traffic to and from base property would be approximately 7,600 by 2016.

2.2.8 Utilities

By 2016 the projected activities associated with the Proposed Action would generate the following on-site utility demands:

- Water - 0.18 million gallons per day (MGD)
- Wastewater - 0.1 MGD
- Solid waste - 4.8 tons per day
- Electricity - 144.0 megawatt-hours (MWH) per day
- Natural gas - 0.3 million cubic feet (MMCF) per day.

Minor modifications to some utility systems would be required to maintain existing service.

Water Supply. All potable water would continue to be supplied by on-base wells. The existing system would be retained and operated by the new owner.

Wastewater. Wastewater from on-site activities would continue to be treated at the City of Heath Wastewater Treatment Plant. Individual meters would be required for civilian reuse.

Solid Waste. Refuse disposal services, currently provided by a private contractor, would continue. Waste would continue to be deposited in an off-base landfill.

Electricity. Electrical power would continue to be provided by the Ohio Power Company. Individual meters would be required for civilian reuse.

Natural Gas. Natural gas would continue to be provided by the National Gas and Oil Corporation. Individual meters would be required for civilian reuse.

2.3 DESCRIPTION OF ALTERNATIVES

2.3.1 Industrial Alternative

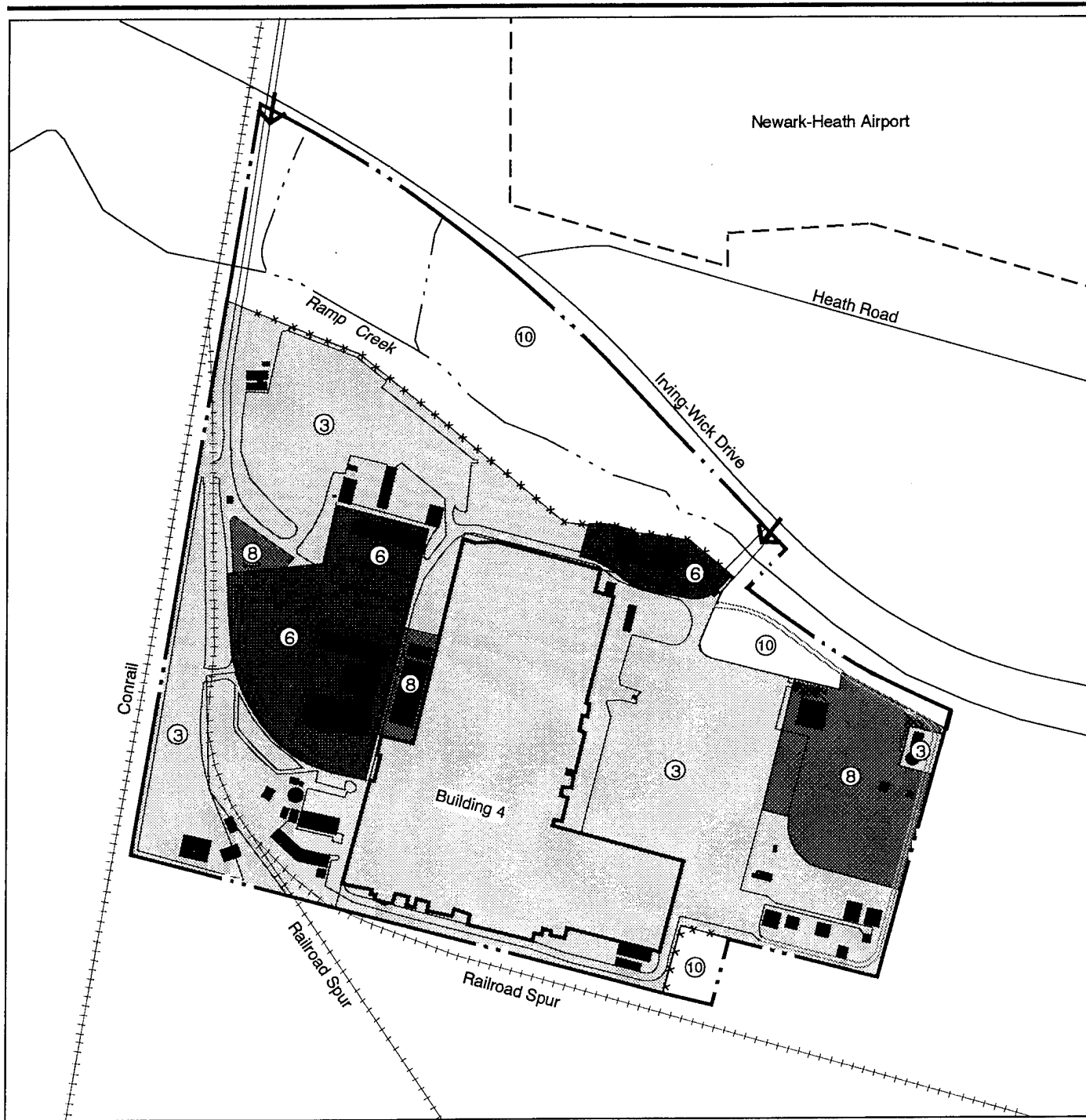
The land uses presented in the Industrial Alternative (Figure 2.3-1) focus on the reuse of Building 4 for manufacturing and associated warehousing activities. Other land uses include commercial, public facilities/recreation, and vacant land. Current mission activities conducted at Newark AFB would be accomplished elsewhere. Separate EIAP documentation would be necessary to address potential environmental impacts associated with siting current Newark AFB mission activities at a different location. The acreage associated with each land use category is provided in Table 2.3-1.

Table 2.3-1. Land Use Acreage - Industrial Alternative

Land Use	Acreage
Industrial	41
Commercial	7
Public facilities/recreation	5
Vacant land	17
Total	70

Assumptions were made to support the analysis of the Industrial Alternative as follows:

- Land uses and acreages
- Reuse plan phasing
- Building retention
- Traffic generation and daily trip projections
- Utility requirement projections
- Proposed roadway access points
- Employment and population projections.



EXPLANATION

- | | |
|---------------------------------|---------------------------------|
| ① Airfield * | ⑥ Commercial |
| ② Aviation Support * | ⑦ Residential * |
| ③ Industrial | ⑧ Public Facilities/ Recreation |
| ④ Institutional (Medical) * | ⑨ Agriculture * |
| ⑤ Institutional (Educational) * | ⑩ Vacant Land |

- ← Access Point
 --- Base Boundary
 - - - Newark-Heath Airport Boundary
 - x - x - Fence



* Standard land use designation not applicable to this figure.

Industrial Alternative

Figure 2.3-1

The amount of existing building retention through 2016 for each land use under the Industrial Alternative is provided in Table 2.3-2. No building demolition is proposed. No land areas would be disturbed by construction of buildings, infrastructure improvements, or other operational activities under the Industrial Alternative.

Table 2.3-2. Building Development - Industrial Alternative

Land Use	Existing Building Retention (in thousands of square feet of floor space)
Industrial	802
Commercial	57
Public facilities/recreation	23
Vacant land	0
Total	882

Note: No building demolition is proposed.

2.3.1.1 Industrial. The industrial land use category includes two parcels covering 41 acres, or 59 percent of the base property. The first parcel would occupy most of the developed portion of the base including Building 4. The primary use could include light manufacturing, such as computer components or furniture, which would begin during the first 5 years of development. Other industrial activities within this parcel include warehouse storage facilities in the southeast and southwest corners of the base, and the sanitary sewage pump station in the northwest corner of the base. The RADIAC laboratory in the southeast portion of the base would be utilized for storage. The fire station, including an emergency medical service, would continue to serve the local area.

The vehicle maintenance and storage facility, northwest of Building 4, would be reused for similar uses in support of the industrial land use. Reuse of the industrial facilities would be complete by 2016.

The second parcel in the northeast corner of the base contains a water tank and pump station for base fire suppression, which would continue operation.

2.3.1.2 Commercial. The proposed commercial land use includes two parcels covering 7 acres, or 10 percent of the base property. A 1-acre parcel adjacent to the East Gate includes the Base Exchange and Pass and Identification office. This area would be utilized as office space. The second parcel, covering 6 acres, is immediately west of Building 4. The buildings in this parcel would also be utilized for office space. In addition, a small restaurant would continue to operate in the administrative/headquarters building. Commercial buildings would be fully utilized by 2016.

2.3.1.3 Public Facilities/Recreation. The public facilities/recreation land use category consists of three parcels totaling 5 acres, or 7 percent of the base area. The first parcel, in the eastern portion of the base, includes a tennis court, volleyball court, softball field, and picnic facilities. The child-care center could be used for its designed purpose or converted for use as a recreation center. The second parcel consists of the gymnasium adjacent to the west side of Building 4. The third parcel consists of the static display area on the western side of the base. Reuse of these facilities would occur within the first 5 years.

2.3.1.4 Vacant Land. The vacant land use category includes two parcels totaling 17 acres, or 24 percent, of the base. The first parcel includes the land north of Ramp Creek and east of the East Gate. The undeveloped 14 acres north of Ramp Creek would be conveyed to the local airport authority and remain vacant to provide a safe runway approach to the Newark-Heath Airport. The area east of the East Gate would remain open space. The second parcel near the southeast corner of Building 4 would remain vacant.

2.3.1.5 Employment and Population. The Industrial Alternative would generate approximately 1,728 new direct jobs on site by 2016. Employment effects are shown in Table 2.3-3. There would be no on-site population associated with this alternative.

Table 2.3-3. On-Site Employment and Population - Industrial Alternative

	Closure (September 1996)	2001	2006	2016
Direct employment	5	441	870	1,728
On-site population	0	0	0	0

2.3.1.6 Transportation. Under the Industrial Alternative, access from Irving-Wick Drive would be provided by the existing East and West gates. Based on land use and on-site employment projections, average daily vehicular traffic to and from base property would be approximately 4,200 by 2016.

2.3.1.7 Utilities. By 2016, the projected activities associated with the Industrial Alternative would generate the following on-site utility demands:

- Water - 0.12 MGD
- Wastewater - 0.07 MGD
- Solid waste - 3.7 tons per day
- Electricity - 57.7 MWH per day
- Natural gas - 0.19 MMCF per day.

Minor modifications to some utility systems would be required to maintain existing service as discussed under the Proposed Action.

2.3.2 No-Action Alternative

Under the No-Action Alternative, the property would not be put to further use. The base would be preserved (i.e., placed in a condition intended to limit deterioration and ensure public safety). Caretaker activities would consist of base resource protection; ground maintenance; existing utilities operations, as necessary; building care; and management of environmental cleanup. No other military activities are anticipated to be performed on the property.

The future land uses and levels of maintenance would be as follows:

- Maintain structures to limit deterioration
- Isolate or deactivate utility distribution lines on base
- Provide limited maintenance of roads to ensure access
- Provide limited grounds maintenance of open areas to eliminate fire, health, and safety hazards.

Current mission activities conducted at Newark AFB would be accomplished elsewhere. Separate EIAP documentation would be necessary to address potential environmental impacts associated with siting current Newark AFB mission activities at a different location. With the relocation of current mission activities to a different location, on-site employment would decrease to five caretaker personnel in September 1996. Caretaker activities would continue through the 20-year analysis period with employment remaining constant. Employment effects are shown in Table 2.3-4. There would be no on-site population associated with the No-Action Alternative.

Table 2.3-4. On-Site Employment and Population - No-Action Alternative

	Closure (September 1996)	2001	2006	2016
Direct employment	5	5	5	5
On-site population	0	0	0	0

Average daily vehicular traffic for the No-Action Alternative is estimated to be 50. Water for caretaker activities would continue to be obtained from the base water system, although the amount would be substantially reduced. Nonessential water lines would be drained and shut off. The reduced flow of wastewater would continue to be treated by the City of Heath Wastewater Treatment Plant. Solid waste collection from the base would likely be continued at a reduced level. The natural gas and heating systems serving

Newark AFB would also likely be utilized at reduced levels. Electrical power would be required for security lighting and other essential systems.

2.4 ALTERNATIVES ELIMINATED FROM FURTHER CONSIDERATION

No alternatives were eliminated from this study. The only reuse proposal submitted for Newark AFB was addressed as the Proposed Action. In addition, the Air Force identified a potential reuse alternative that would be reasonable for Newark AFB. No other reasonable alternatives have been identified.

2.5 OTHER FUTURE ACTIONS IN THE REGION

Other actions within the region were evaluated to determine whether cumulative environmental impacts could result due to the implementation of the base disposal action in conjunction with other past, present, or reasonably foreseeable future actions. No actions within the geographic region were determined to have the ability to cause cumulative impacts in combination with the Proposed Action or alternatives.

2.6 COMPARISON OF ENVIRONMENTAL IMPACTS

A summary comparison of the influencing factors and environmental impacts, along with their potential mitigation on each biophysical resource affected by the Proposed Action and alternatives over the 20-year study period, is presented in Tables 2.6-1 and 2.6-2. Impacts for air quality are summarized over a 10-year period due to the speculative nature of projecting pollutant emissions and concentrations far into the future under changing regulatory and climatic conditions. Influencing factors are nonbiophysical elements, such as population, employment, land use and aesthetics, transportation networks, and public utility systems that directly impact the environment. These activities have been analyzed to determine their effects on the environment. Impacts to the environment are described briefly in the summary and discussed in detail in Chapter 4.

Table 2.6-1. Summary of Reuse-Related Influencing Factors in the ROI

Factor	Proposed Action			Industrial Alternative			No-Action Alternative		
	2001	2006	2016	2001	2006	2016	2001	2006	2016
Ground disturbance (acres by phase) ^(a)	0	0	0	0	0	0	0	0	0
Direct employment ^(a)	72	447	1,197	-1,675	-1,246	-387	-2,111	-2,111	-2,111
Secondary employment	379	674	1,263	-1,178	-934	-445	-1,424	-1,424	-1,424
Population	-300	-228	-89	-1,604	-1,553	-1,452	-1,654	-1,654	-1,654
Traffic (total daily trips) ^(a)	-250	500	2,100	-4,400	-3,350	-1,300	-5,500	-5,500	-5,500
Increase in water demand (MGD)	-0.11	0.34	0.80	-1.02	-0.77	-0.29	-1.26	-1.26	-1.26
Increase in wastewater production (MGD)	0.08	0.25	0.58	-0.73	-0.55	-0.21	-0.90	-0.90	-0.90
Increase in solid waste (tons/day)	1.80	4.80	10.90	-13.30	-10.20	-4.10	-16.40	-16.40	-16.40
Increase in electricity demand (MWH/day)	11.23	69.35	185.57	-307.54	-247.11	-126.16	-369.01	-369.01	-369.01
Increase in natural gas demand (MMCF/day)	0.12	0.40	0.97	-1.34	-1.03	-0.41	-1.65	-1.65	-1.65

Notes: Values shown represent increases/decreases over preclosure conditions in each year as a result of implementing that alternative.

(a) Values represent increases/decreases for on-base activities only.

MGD = million gallons per day

MMCF = million cubic feet

MWH = megawatt-hours

ROI = region of influence

Table 2.6-2. Summary of Environmental Impacts and Suggested Mitigation from the Proposed Action and Reasonable Reuse Alternatives
Page 1 of 5

Resource Category Local Community	Proposed Action	Industrial Alternative	No-Action Alternative
Land Use and Aesthetics	Impacts: Revisions to local zoning and plans required to reflect redevelopment plans	Impacts: Revisions to local zoning and plans required to reflect redevelopment plans	Impacts: Vacant land allowed to revert to its natural condition
Transportation	Impacts: Increase of 2,100 daily vehicular trips	Impacts: Decrease of 1,300 daily vehicular trips	Impacts: Decrease of 5,500 daily vehicular trips
Utilities Use	Impacts: Up to 46 percent increase in ROI utility use. Current systems would be able to accommodate these increased demands	Impacts: Decrease in base-related and ROI utility use	Impacts: Decrease in base-related and ROI utility use
Hazardous Materials and Hazardous Waste Management			
Hazardous Materials Management	Impacts: Similar types and a slight increase in quantities of materials used. Compliance with applicable regulations would preclude significant impacts	Impacts: Similar quantities of materials used. Compliance with applicable regulations would preclude significant impacts	Impacts: Materials used for caretaker activities will be managed in compliance with applicable regulations
Hazardous Waste Management	Impacts: Slight increase in quantities of wastes generated. Compliance with applicable regulations would preclude significant impacts	Impacts: Similar quantities of wastes generated. Compliance with applicable regulations would preclude significant impacts	Impacts: Wastes generated by caretaker activities will be managed in accordance with applicable regulations

Note: Impacts are based on the changes from preclosure baseline conditions, which are projected to occur as a result of implementing that alternative.
ROI = region of influence

Table 2.6-2. Summary of Environmental Impacts and Suggested Mitigation from the Proposed Action and Reasonable Reuse Alternatives
Page 2 of 5

Resource Category	Proposed Action	Industrial Alternative	No-Action Alternative
Hazardous Materials and Hazardous Waste Management (Continued)	Installation Restoration Program	Impacts: Possible reuse delays and land use restrictions due to remediation. Coordinating between OL and planning agencies would minimize potential delays	Impacts: IRP remediation activities continued as needed
	Storage Tanks	Impacts: USTs to be removed; aboveground storage tanks and oil/water separators to be emptied and cleaned New storage tanks required by new owner/operator subject to all regulations to avoid significant impacts	Impacts: Storage tanks removed or maintained in place according to required standards
	Asbestos	Impacts: Management in accordance with applicable regulations to minimize potential risk to human health or the environment	Impacts: Continued management of asbestos in accordance with Air Force policy
Pesticide Usage	Impacts: Management in accordance with FIFRA and state guidelines would preclude significant impacts	Impacts: Management in accordance with FIFRA and state guidelines would preclude significant impacts	Impacts: Management in accordance with FIFRA and state guidelines would preclude significant impacts

Note: Impacts are based on the changes from preclosure baseline conditions, which are projected to occur as a result of implementing that alternative.

FIFRA = Federal Insecticide, Fungicide, and Rodenticide Act

OL = Operating Location

UST = underground storage tank

Table 2.6-2. Summary of Environmental Impacts and Suggested Mitigation from the Proposed Action and Reasonable Reuse Alternatives
Page 3 of 5

Resource Category	Proposed Action	Industrial Alternative	No-Action Alternative
Hazardous Materials and Hazardous Waste Management (Continued)			
Polychlorinated Biphenyls	Impacts: All federally regulated PCBs removed prior to base closure	Impacts: All federally regulated PCBs removed prior to base closure	Impacts: All federally regulated PCBs removed prior to base closure
Radon	Impacts: No facilities registered radon levels above 4 pCi/l	Impacts: No facilities registered radon levels above 4 pCi/l	Impacts: No facilities registered radon levels above 4 pCi/l
Medical/Biohazardous Waste	Impacts: Decrease in amounts generated. Proper management under applicable regulations would avoid significant impacts	Impacts: Decrease in amounts generated. Proper management under applicable regulations would avoid significant impacts	Impacts: No wastes would be generated
Radioactive Materials	Impacts: Management of radioactive materials using all appropriate regulations would preclude any significant impacts	Impacts: All radioactive materials will be removed from base prior to closure	Impacts: All radioactive materials will be removed from base prior to closure
Lead-Based Paint	Impacts: Potential exposure to lead-based paint in facilities constructed prior to or during 1978	Impacts: Potential exposure to lead-based paint in facilities constructed prior to or during 1978	Impacts: Potential exposure to lead-based paint in facilities constructed prior to or during 1978

Note: Impacts are based on the changes from preclosure baseline conditions, which are projected to occur as a result of implementing that alternative.

PCBs = polychlorinated biphenyls
pCi/l = picocuries per liter

Newark AFB Disposal and Reuse EA

Table 2.6-2. Summary of Environmental Impacts and Suggested Mitigation from the Proposed Action and Reasonable Reuse Alternatives
Page 4 of 5

Resource Category	Proposed Action	Industrial Alternative	No-Action Alternative
Natural Environment			
• Geology and Soils	- Impacts: - No ground disturbance	- Impacts: - No ground disturbance	- Impacts: - No ground disturbance
• Water Resources	- Impacts: - No ground disturbance. Adequate water supply for limited on-base demand - Increase in ROI water demand would not affect water supply	- Impacts: - No ground disturbance. Reduced water demand	- Impacts: - No ground disturbance. Reduced water demand
• Air Quality	- Impacts: - Decrease in reuse-related emissions in 2006: NO_x: -3.71 tons/year VOC: -4.37 tons/year PM₁₀: 0 tons/year SO₂: 0 tons/year CO: -65.55 tons/year - Air pollutant emissions would remain below preclosure levels during operations and would not affect the region's progress toward attainment of the ozone standard - No adverse impacts for other criteria pollutants	- Impacts: - Increase/decrease in reuse-related emissions in 2006: NO_x: 167.66 tons/year VOC: 89.15 tons/year PM₁₀: 0 tons/year SO₂: 12.31 tons/year CO: -140.76 tons/year - Increased air pollutant emissions during operations would not produce an adverse impact or affect the attainment status of the area - No adverse impacts for other criteria pollutants	- Impacts: - Air pollutant emissions generated from caretaker activities would remain below preclosure conditions
• Biological Resources	- Impacts: - No impact to potential wetlands or threatened or endangered species	- Impacts: - No impact to potential wetlands or threatened or endangered species	- Impacts: - Potential increase in habitat value due to long-term decrease in human activity

Note: Impacts are based on the changes from preclosure baseline conditions, which are projected to occur as a result of implementing that alternative.

CO = carbon monoxide
NO_x = nitrogen oxides
PM₁₀ = particulate matter equal to or less than 10 microns in diameter
ROI = region of influence
SO₂ = sulfur dioxide
VOC = volatile organic compound

Table 2.6-2. Summary of Environmental Impacts and Suggested Mitigation from the Proposed Action and Reasonable Reuse Alternatives
Page 5 of 5

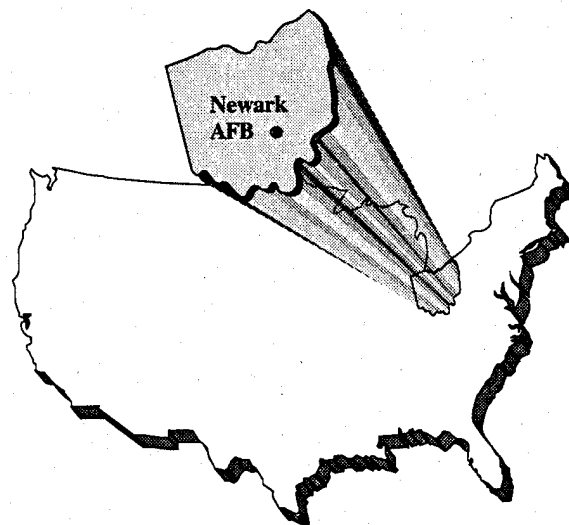
Resource Category	Proposed Action	Industrial Alternative	No-Action Alternative
Natural Environment (Continued)			
Cultural Resources	- Impacts: No archaeological, Native American, or paleontological resources Potential adverse effects to one building potentially eligible for listing on the NRHP - Mitigations: Properties may be conveyed to non-federal owners with preservation covenants. SHPO and Advisory Council on Historic Preservation would be consulted during development and implementation of procedures and mitigation strategies. Prepare agreement document to establish acceptable mitigation measures	- Impacts: No archaeological, Native American, or paleontological resources Potential adverse effects to one building potentially eligible for listing on the NRHP - Mitigations: Properties may be conveyed to non-federal owners with preservation covenants. SHPO and Advisory Council on Historic Preservation would be consulted during development and implementation of procedures and mitigation strategies. Prepare agreement document to establish acceptable mitigation measures	- Impacts: One building potentially eligible for listing on the NRHP - Mitigations: None

Note: Impacts are based on the changes from preclosure baseline conditions, which are projected to occur as a result of implementing that alternative.

NRHP = National Register of Historic Places

SHPO = State Historic Preservation Officer

Newark AFB Disposal and Reuse EA



CHAPTER 3

AFFECTED ENVIRONMENT

3.0 AFFECTED ENVIRONMENT

3.1 INTRODUCTION

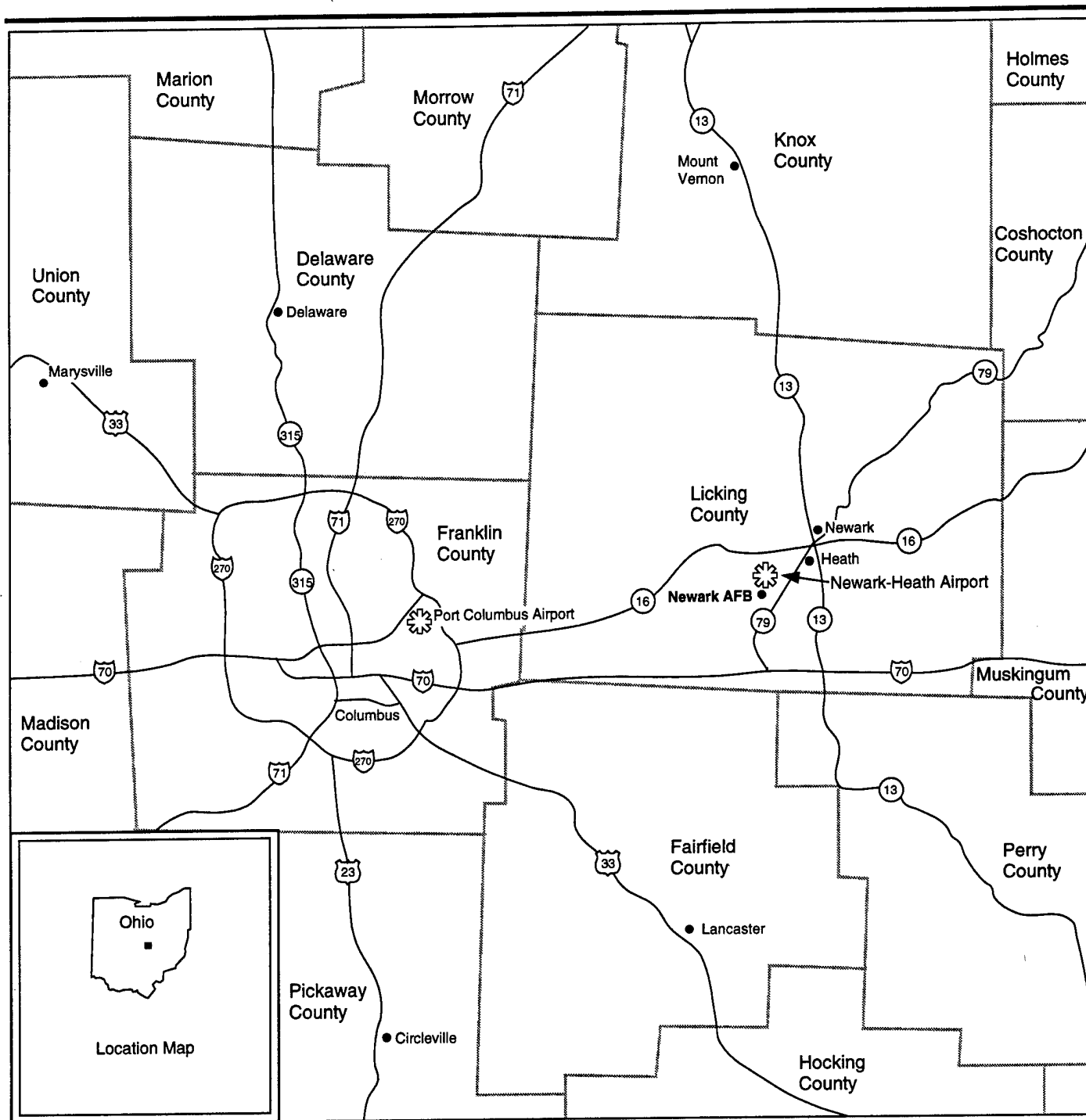
This chapter describes the environmental conditions of Newark AFB and its region of influence (ROI) as it was at full mission operation. It provides information to serve as a baseline from which to identify and evaluate environmental changes resulting from the disposal and reuse of Newark AFB. Although this EA focuses on the biophysical environment, some nonbiophysical elements are addressed. The nonbiophysical elements (influencing factors) of population and employment, land use and aesthetics, transportation networks, and public utility systems in the region and local communities are addressed. This chapter also describes the storage, use, and management of hazardous materials found on base including storage tanks, asbestos, pesticides, polychlorinated biphenyls (PCBs), radon, medical/biohazardous waste, radioactive materials, and lead-based paint. Ordnance will not be discussed as part of the existing environment because no ordnance-related activities, such as ordnance disposal or small arms training, have taken place on base. The current status of the IRP is also described. Finally, the chapter describes the pertinent natural resources of geology and soils, water resources, air quality, biological resources, and cultural resources.

The ROI to be studied will be defined for each resource area affected by the Proposed Action and alternatives. The ROI determines the geographical area to be addressed as the affected environment. Although the base boundary may constitute the ROI limit for many resources, potential impacts associated with certain issues (e.g., air quality, utility systems, water resources) transcend these limits.

The baseline conditions assumed for the purposes of analysis are the conditions of the base at full operation prior to the announcement of closure (1992-1993 time frame). Impacts associated with disposal and/or reuse activities may then be addressed by comparing projected conditions under various reuses to baseline conditions. This will assist the decision maker and agencies in understanding potential long-term impacts in comparison to conditions when the installation was active.

3.2 LOCAL COMMUNITY

Newark AFB is in central Ohio in Licking County, approximately 35 miles east of Columbus (Figure 3.2-1). The 70-acre base is located within the Heath city limits.



EXPLANATION

- | | |
|-------------------------|--------------------|
| --- Base Boundary | (16) State Highway |
| ✱ Airports | (33) U. S. Highway |
| (70) Interstate Highway | — County Boundary |

Regional Map



Base Map: U.S. Geological Survey 1967, 1978.

Figure 3.2-1

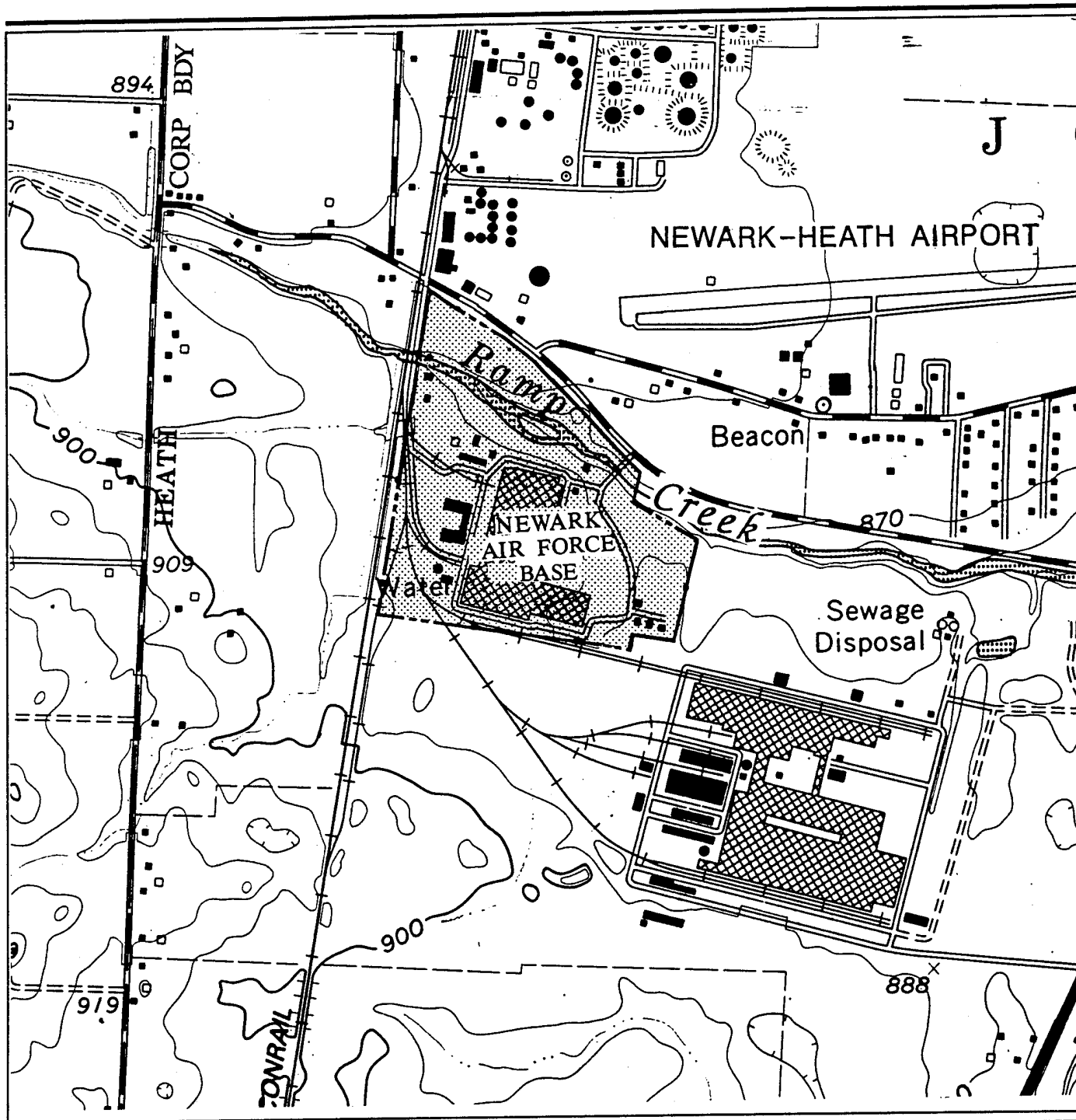
The terrain of Licking County is gently rolling to hilly as a result of glaciation modification. The topography in western Licking County tends to be flat, and the eastern portion is characterized by steeper slopes and hills. The topography at Newark AFB is relatively flat, with elevations ranging from 890 feet above mean sea level (MSL) in the southwest corner of the base to 870 feet above MSL along Ramp Creek in the northeast (Figure 3.2-2). Steeper slopes are found along Ramp Creek.

The climate in central Ohio is classified as continental with warm, humid summers and cold, cloudy winters. The warmest month of the year is July, with a mean monthly temperature of 73 degrees Fahrenheit (°F); the coolest month of the year is January, with a mean monthly temperature of 29°F. Precipitation in central Ohio averages 39 inches annually, with the summer months receiving slightly more rainfall than the rest of the year. Snowfall in the region primarily occurs from November through March and averages 24 inches annually.

Access to Newark AFB is provided by Irving-Wick Drive, an east-west roadway adjacent to the northern boundary of the base. State Highway (SH) 79, a north-south highway 1 mile east of the base, connects the area to Interstate 70 and Columbus to the west. The closest commercial airport is in Columbus; however, the Newark-Heath Airport, offering general aviation services, is located adjacent to the northern boundary of Newark AFB. Rail service to the region is provided by Conrail and the Baltimore and Ohio (B&O) railroads. A railroad spur leading to an industrial facility southeast of Newark AFB crosses the southwest portion of the base. The railroad spur does not service Newark AFB.

Installation Background. The main facility at Newark AFB (Building 4) was constructed in the early 1950s as part of the Air Force Heavy Press Program. The facility was designed to house heavy aluminum presses that were capable of fabricating aircraft wings up to 35 feet long. In 1952 the Air Force contracted Kaiser Aluminum and Chemical Corporation to construct and operate the aluminum presses. The Air Force canceled the Heavy Press Program in 1953. However, because the facility was partially constructed, the decision was made to complete construction. This was accomplished in 1954, and the facility was designated as Air Force Industrial Plant Number 48. The facility was primarily used for storage of industrial equipment (Dames & Moore, Inc., 1993).

In 1959 the industrial plant was designated as the Heath Maintenance Annex of Dayton Air Force Depot. Modifications were made to the facility from 1961 to 1962 to house inertial guidance system repair shops and calibration laboratories. In 1962, the 2802nd Inertial Guidance and Calibration Group (IGCG) was designated and the Annex became known as Newark Air Force Station. The IGCG was deactivated in 1968, and the AGMC was activated as a replacement organization. In 1987, the facility was redesignated as Newark AFB (Dames & Moore, Inc., 1993).



EXPLANATION

----- Base Boundary

Newark AFB and Vicinity



Map Source: U.S. Geological Survey, 1982.

Figure 3.2-2

Newark AFB Disposal and Reuse EA

3.2.1 Community Setting

The region surrounding Newark AFB is mostly rural with small isolated areas of residential, commercial, and industrial development. The development occurs near major highways and within the incorporated cities. Licking County is considered the ROI for purposes of describing and analyzing employment and population effects for communities affected by disposal and reuse of Newark AFB. The cities primarily impacted are Heath and Newark. Employment and population projections were estimated using data from the Ohio Bureau of Employment Services and the Ohio Department of Development.

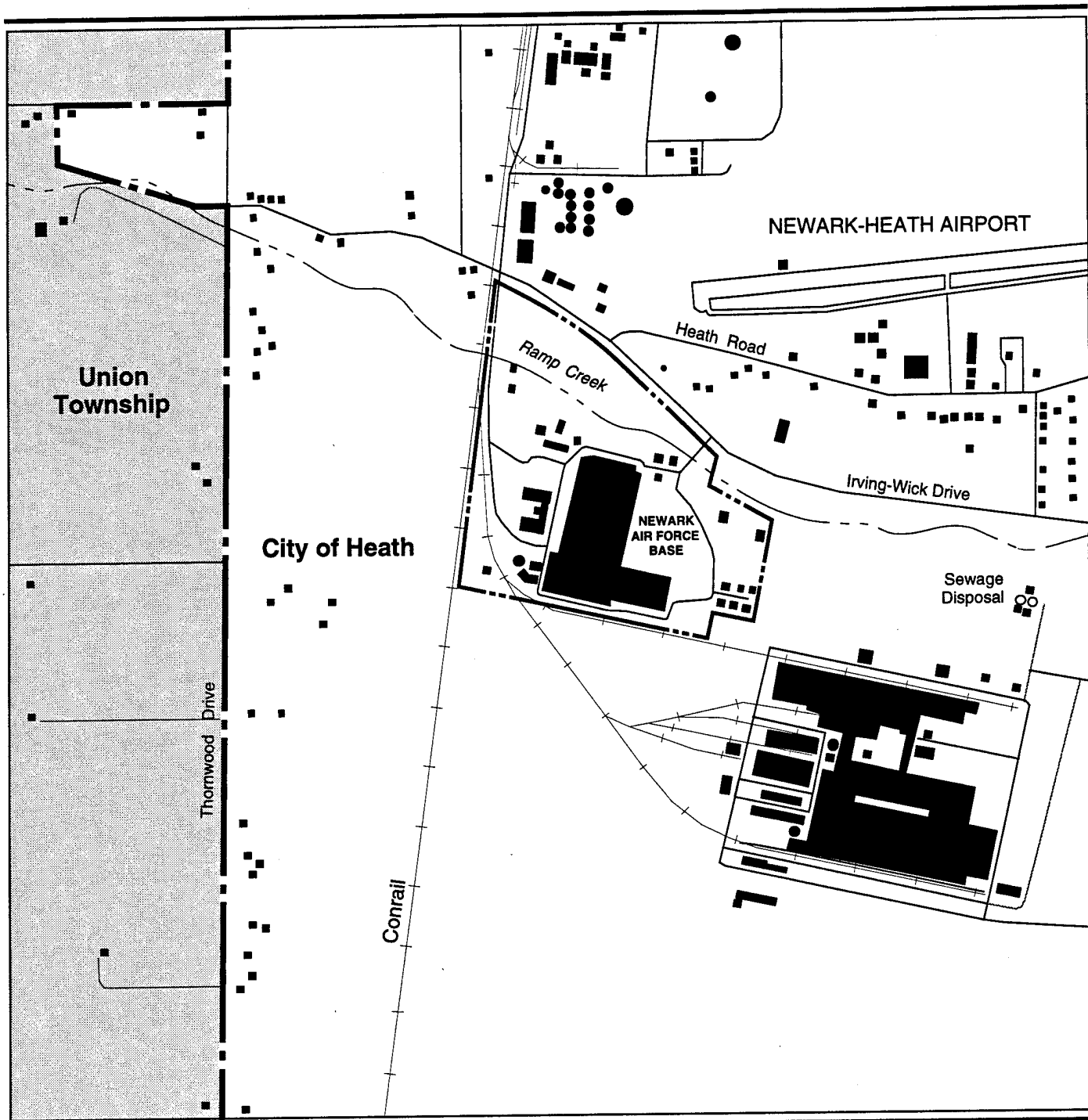
The total employment in the ROI was estimated to be 58,327 jobs in 1992. Overall employment growth in the region was 1.5 percent per year from 1970 to 1990, which is greater than the state employment growth rate of 1.2 percent per year and less than the national employment growth rate of 2.1 percent per year. Manufacturing and agriculture are Licking County's two largest employment sectors. There are over 100 manufacturing businesses, and it is the fourth largest agriculture-producing county in the state. Even with a large presence in the county, the manufacturing sector showed the largest decrease over the 1970-1990 period. The services and retail sectors showed the largest increase over the 20-year period. The site-related employment in 1992 consisted of 3,542 jobs: 2,116 direct (excluding reservists) and 1,426 secondary.

The ROI population estimated for 1992 was 129,587 persons. For the same year, the population for the city of Heath was estimated to be 7,303 and the population for the city of Newark was estimated to be 44,834. Population in the ROI increased 0.9 percent per year from 1970 to 1990. This growth rate is greater than the state growth rate of 0.1 percent per year and slightly less than the national growth rate of 1.0 percent per year. The site-related population (i.e., direct and secondary employees and their dependents) in 1992 was 10,304.

3.2.2 Land Use and Aesthetics

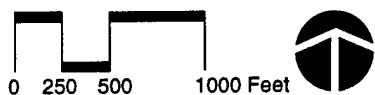
This section describes the land uses and aesthetics for the base property and the areas surrounding Newark AFB. The ROI includes the base property and potentially affected adjacent properties.

Newark AFB property is owned by the U.S. Government and falls within the city of Heath's jurisdiction. Land adjacent to Newark AFB falls within the jurisdiction of the city of Heath and Union Township to the west of the base (Figure 3.2-3).



EXPLANATION

- Base Boundary
- Unpaved Road
- Jurisdictional Boundary
- Union Township
- City of Heath



Local Boundaries

Figure 3.2-3

3.2.2.1 Land Use

Land Use Plans and Regulations. The comprehensive plan for a jurisdiction represents the official position on long-range development and resource management. The position is expressed in goals, policies, plans, and actions regarding the physical, social, and economic environments, both short and long term.

Heath's 1985 Land Use and Thoroughfare Plan identifies the base property for industrial uses with open space along Ramp Creek. Surrounding uses would include residential, industrial park, and airport development. The city of Heath plans to update its comprehensive plan in the near future to incorporate proposed land uses at Newark AFB.

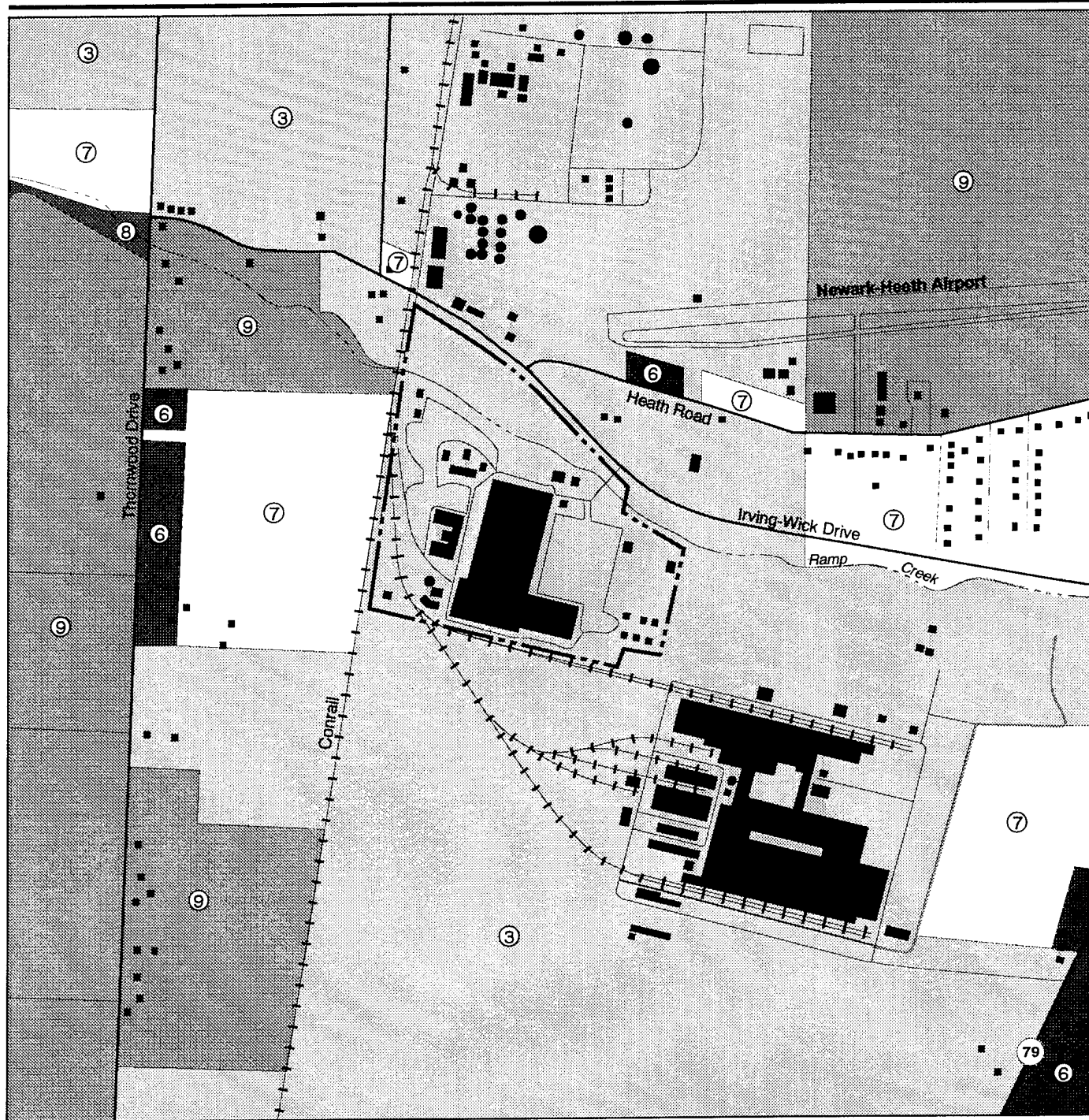
Since Union Township does not have a comprehensive plan, Licking County's comprehensive plan would be applicable. The Licking County Optimum Land Use Policy and Plan (Licking County Planning Commission, 1976) suggests urban development for fringe areas surrounding cities such as Heath; therefore, urban development is recommended for the area immediately west of the base within Licking County. The intent is to achieve a logical pattern of growth where city services and utilities can be economically provided.

Zoning. Zoning provides for the division of the jurisdiction, in conformity with the comprehensive plan, into districts within which the height, open space, building coverage, density, and types of future land uses are set forth. Zoning is designated to achieve various community development goals, including implementation of comprehensive plans. The city of Heath and Union Township zoning ordinances apply to the land in the vicinity of Newark AFB.

Heath's Zoning Ordinance (Heath, 1992) designates the base property for heavy manufacturing (Figure 3.2-4). The area north of the base is zoned industrial, with a small commercial and residential zone. The area northeast of the base is zoned agricultural and residential. The area east and south of the base is zoned industrial, and west of the base is zoned industrial, residential, and agricultural with some commercial.

Union Township Zoning Ordinance (1990) includes a large area west and southwest of the base for agricultural uses.

On-Base Land Use. Land use identifies the present usage by various general categories. Existing land uses at Newark AFB are shown in Figure 3.2-5 and described in this section. Land use acreages are shown below.



EXPLANATION

- | | | |
|-----------------------------|---------------------------------|-------------------|
| ① Airfield * | ⑤ Institutional (Educational) * | ⑨ Agriculture |
| ② Aviation Support * | ⑥ Commercial | ⑩ Vacant Land * |
| ③ Industrial | ⑦ Residential | --- Base Boundary |
| ④ Institutional (Medical) * | ⑧ Public Facilities/ Recreation | ⑦⑨ State Highway |

0 225 500 1000 Feet



* Standard land use designation not applicable to this figure.

Local Zoning

Figure 3.2-4

<u>Land Use</u>	<u>Acreage</u>
Industrial	41
Institutional (medical)	1
Institutional (educational)	1
Commercial	6
Public facilities/recreation	4
Vacant	17
Total	70

Industrial land uses account for approximately 60 percent of the base. This use includes Building 4 and the vehicle maintenance facility in the central portion of the base; the RADIAC laboratory and hazardous/nonhazardous storage in the southeast corner of the base; the grounds maintenance, fire station, and storage facilities in the southwest corner; and the sewage lift station in the northwest corner of the base. Building 4 is the largest building with approximately 750,000 square feet of floor space. Civil engineering, accounting and finance, security police, communications-computer systems, and base supply distribution are some of the offices within Building 4.

Institutional land uses are separated into two categories: medical and educational. The medical land use consists of the medical aid station, directly west of Building 4, which provides basic medical service to base personnel. The only educational land use category is the child-care center southeast of the East Gate.

The **commercial** land uses include the Base Exchange, Pass and Identification office, and the administrative/headquarters building. The Base Exchange and the Pass and Identification office are located adjacent to the East Gate. The administrative/headquarters building is located directly west of Building 4.

Public facilities/recreation land use areas consist of a tennis court, volleyball court, softball field, and several picnic facilities in the eastern portion of the base; the gym and racquetball court immediately west of Building 4; and the static display area on the western side of the base.

Vacant land consists of the undeveloped area in the northern portion of the base adjacent to Ramp Creek and a small area acquired in 1991 southeast of Building 4.

Leases and Easements. The Air Force typically outgrants a number of leases, easements, and licenses to other agencies and private individuals for use of the base property. At Newark AFB, these include right-of-way easements for the city of Heath, railroad siding, and various public utility companies. In addition, there are agreements for use of base property with the Civil Air Patrol and the Hopewell Federal Credit Union. The terms of these outgrants are displayed in Table 3.2-1. Newark AFB also has several ingrants to use property outside the base boundaries. These ingrants

Table 3.2-1. Inventory of Easement Agreements, Licenses, Permits, and Leases

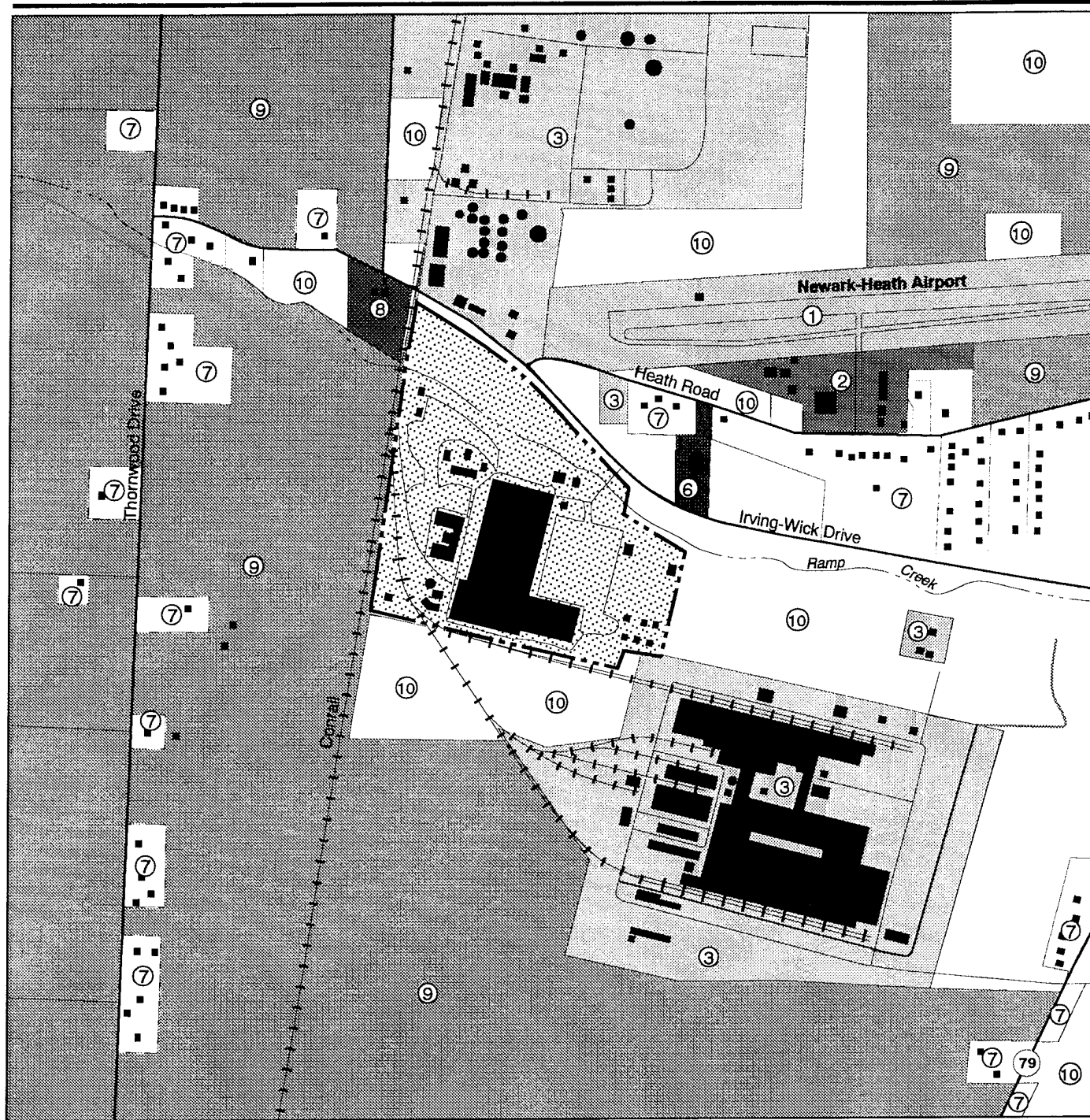
Document Number	Expiration Date	Description/Location	Responsible Party
Outgrants			
052-AFP-48-1	8/4/2008	Easement for electric transmitter	Ohio Power Company
NAFB-AGMC-91-0001	8/31/1995	Office and training space	Civil Air Patrol
DA-15-029-ENG-7230	10/3/1999	Easement for sewer pipe	City of Heath
DACA-27-2-68-631	3/18/1999	Easement for pipeline	National Gas and Oil Corporation
DACA-31-2-72-665	3/23/1999	Easement for road	City of Heath
NAFB-AGMC-90-0001	6/27/1995	Credit Union Office	Hopewell Federal Credit Union
N/A	Unknown	Easement for telephone line	Ohio Bell
N/A	Perpetual	Easement for 12-inch tile ditch	Pure Oil Company
N/A	Unknown	Easement for railroad track	New York Central Railroad
N/A	Perpetual	Easement for pipeline	Columbia Gas
N/A	Perpetual	Easement for telephone line	Newark Telephone
Ingrants			
DACA-27-5-92-098	3/31/1997	Warehouse space	Freight Service, Inc.
DACA-27-5-91-160	8/5/2005	Office space	Southgate Corporation
DACA-31-9-76-71	9/10/1999	Vegetation maintenance	Kaiser Aluminum and Chemical Company
DACA-31-9-76-857	7/5/1999	Vegetation maintenance	R. M. and H. J. Orr

N/A = not available

Source: U.S. Air Force, 1993b.

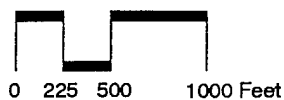
are for office/warehouse space and maintenance of vegetation along the base boundary (see Table 3.2-1).

Adjacent Land Use. Off-base land uses adjacent to Newark AFB are predominantly industrial and agricultural with several vacant land areas in the vicinity of the base (Figure 3.2-6). North of Newark AFB, are an abandoned



EXPLANATION

① Airfield	⑤ Institutional (Educational) *	⑨ Agriculture
② Aviation Support	⑥ Commercial	⑩ Vacant Land
③ Industrial	⑦ Residential	Base Property
④ Institutional (Medical) *	⑧ Public Facilities/ Recreation	Base Boundary
		⑦⑨ State Highway



* Standard land use designation not applicable to this figure.

Existing Off-Base Land Use

Figure 3.2-6

oil refinery, a petroleum storage yard, and an asphalt production plant. Large lot residential areas are located along the north side of Irving-Wick Drive, south of the Newark-Heath Airport. Smaller areas of vacant and commercial land uses are interspersed among the residential and industrial areas. Land uses west of the base include agricultural with scattered residences along Thornwood Drive. A small recreation land use and vacant land area are located northwest of the base. South and southeast of the base, the predominant land uses are agricultural and industrial with vacant land adjacent to the southern base boundary. East of the base, the area is predominantly vacant with a small industrial area.

3.2.2.2 Aesthetics. Visual resources include natural and man-made features that give a particular environment its aesthetic qualities. Criteria used in the analysis of these resources include visual sensitivity, which is the degree of public interest in a visual resource and concern over adverse changes in its quality. Visual sensitivity is categorized in terms of high, medium, or low levels.

High visual sensitivity exists in areas where views are rare, unique, or in other ways special, such as in remote or pristine environments. High-sensitivity views would include landscapes that have landforms, vegetative patterns, water bodies, or rock formations of unusual or outstanding quality.

Medium visual sensitivity areas are more developed than those of high sensitivity, and the presence of motorized vehicles and other evidence of modern civilization is commonplace. These landscapes generally have features containing varieties in form, line, color, and texture, but tend to be more common than high visual sensitivity areas.

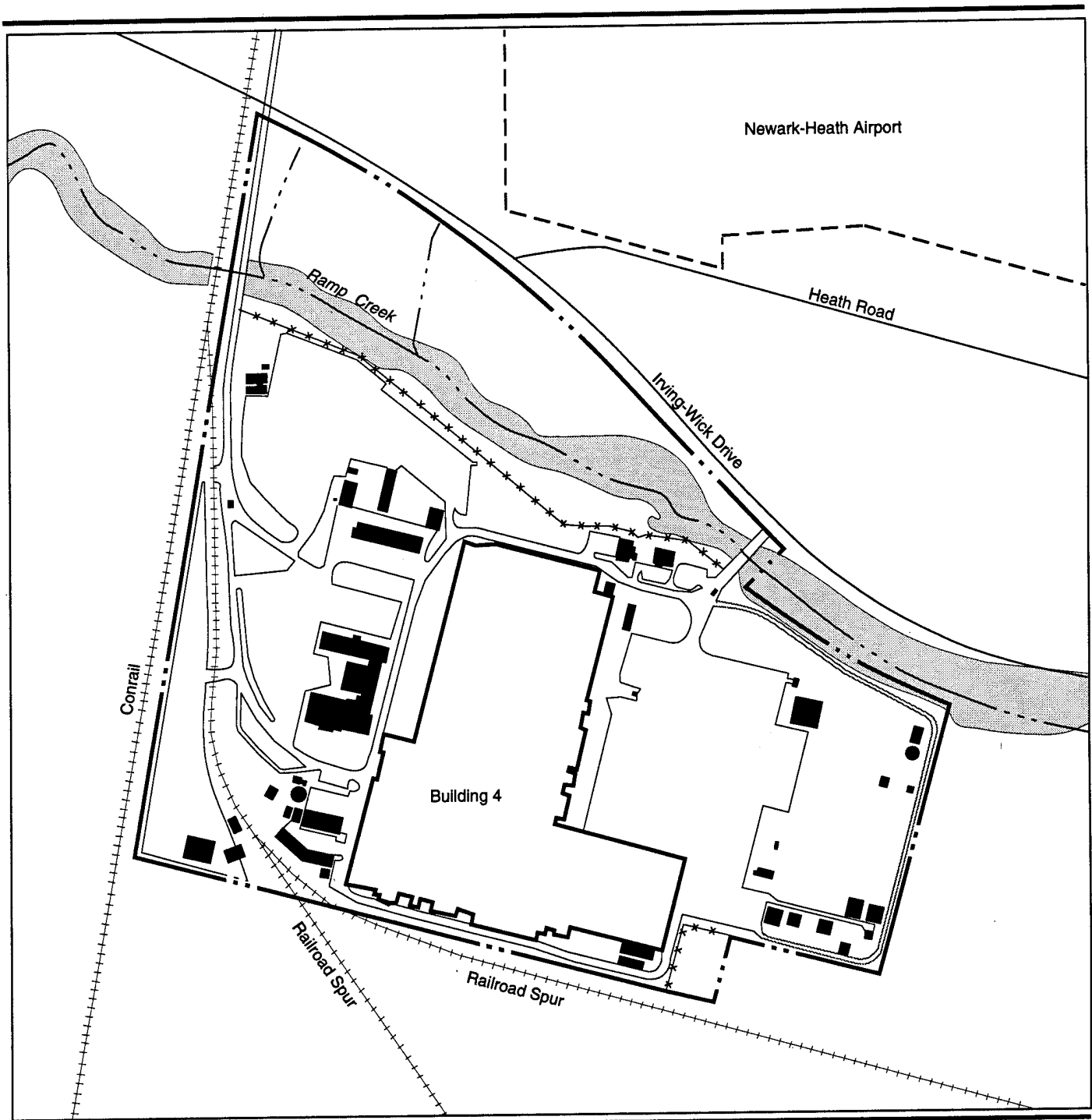
Low visual sensitivity areas tend to have minimal landscape features, with little change in form, line, color, and texture.

The appearance of the base includes one large metal industrial facility (Building 4) with several small support facilities. Most of the support facilities are single story and of cinder block and metal construction. Building 4 and several support facilities were constructed in the early 1950s, and a large number of support facilities were constructed in the 1980s and 1990s.

The only area of high visual sensitivity is the natural riparian vegetation along Ramp Creek, which extends off base to adjacent lands (Figure 3.2-7).

3.2.3 Transportation

Transportation addresses roadways and other modes of transportation. The ROI for the transportation analysis includes the existing principal road, air,



EXPLANATION

- Base Boundary
- x-x- Fence
- High Visual Sensitivity

Visual Sensitivity



Figure 3.2-7

and rail networks in the local communities of Newark and Heath, with emphasis on the immediate area surrounding Newark AFB.

3.2.3.1 Roadways. The evaluation of the existing roadway conditions focuses on capacity, which reflects the ability of the network to serve the traffic demand and volume. Capacity is stated in terms of vehicles per hour (VPH), and is the maximum number of vehicles that can be effectively processed by a segment of roadway or intersection during 1 hour. Roadway capacity is a function of several factors, including the number of lanes, lane and shoulder width, traffic control devices (e.g., traffic signals), and percent trucks. For two-lane roads, capacity analysis is conducted for both directions; while for multilane highways, capacity analysis considers a single direction only.

To determine how well a section of roadway operates, capacity is compared against the volume of traffic carried by the section. These traffic volumes may be distinguished as (1) average annual daily traffic (AADT), the total two-way volume averaged for a full year; (2) average daily traffic (ADT), the total two-way traffic averaged for a period of time less than a year; and (3) peak-hour volume (PHV), the amount of traffic that occurs in the typical peak hour. ADT estimates are used in this report because no continuous count data are available for the road segments in the ROI.

For comparison to calculated roadway capacities, ADTs are converted to PHV. The comparison of PHV to capacity is expressed in terms of level of service (LOS). The LOS scale ranges from A to F, with each level defined by a range of volume-to-capacity ratios. LOS values of A, B, and C are considered good operating conditions, where minor or tolerable delays are experienced by motorists. LOS values of D and E represent acceptable, but below average conditions. LOS F represents an unacceptable situation of unstable stop-and-go traffic. Table 3.2-2 presents the LOS designations and their representative volume-to-capacity ratios for various roadway types. These levels are more fully described in the Highway Capacity Manual (Transportation Research Board, 1985).

Existing roads and highways within the ROI are described at two levels: (1) regional, representing the major links within the central Ohio area; and (2) local, representing community roads.

Regional. Newark AFB is located approximately 35 miles from Columbus, Ohio, where two major transportation corridors, Interstates 70 and 71, intersect (see Figure 3.2-1). The city of Newark, approximately 5 miles north of the base, is the major population center in Licking County. SH 79 provides access between Interstate 70 and the cities of Newark and Heath. SH 79 is a four-lane highway with speed limits varying from 35 miles per hour (mph) in the city of Heath to 55 mph south of Irving-Wick Drive. PHVs on this roadway range from 1,400 to 2,500.

Table 3.2-2. Road Transportation Levels of Service

LOS	Description	Criteria (Volume/Capacity)	
		Multilane Arterial	2-Lane Highway
A	Free flow with users unaffected by presence of other users of roadway	0-0.31	0-0.15
B	Stable flow, but presence of the users in traffic stream becomes noticeable	0.32-0.52	0.16-0.27
C	Stable flow, but operation of single users becomes affected by interactions with others in traffic stream	0.53-0.72	0.28-0.43
D	High density, but stable flow; speed and freedom of movement are severely restricted; poor level of comfort and convenience	0.73-0.86	0.44-0.64
E	Unstable flow; operating conditions at capacity with reduced speeds, maneuvering difficulty, and extremely poor levels of comfort and convenience	0.87-1.00	0.65-1.00
F	Forced breakdown flow with traffic demand exceeding capacity; unstable stop-and-go traffic	> 1.00	> 1.00

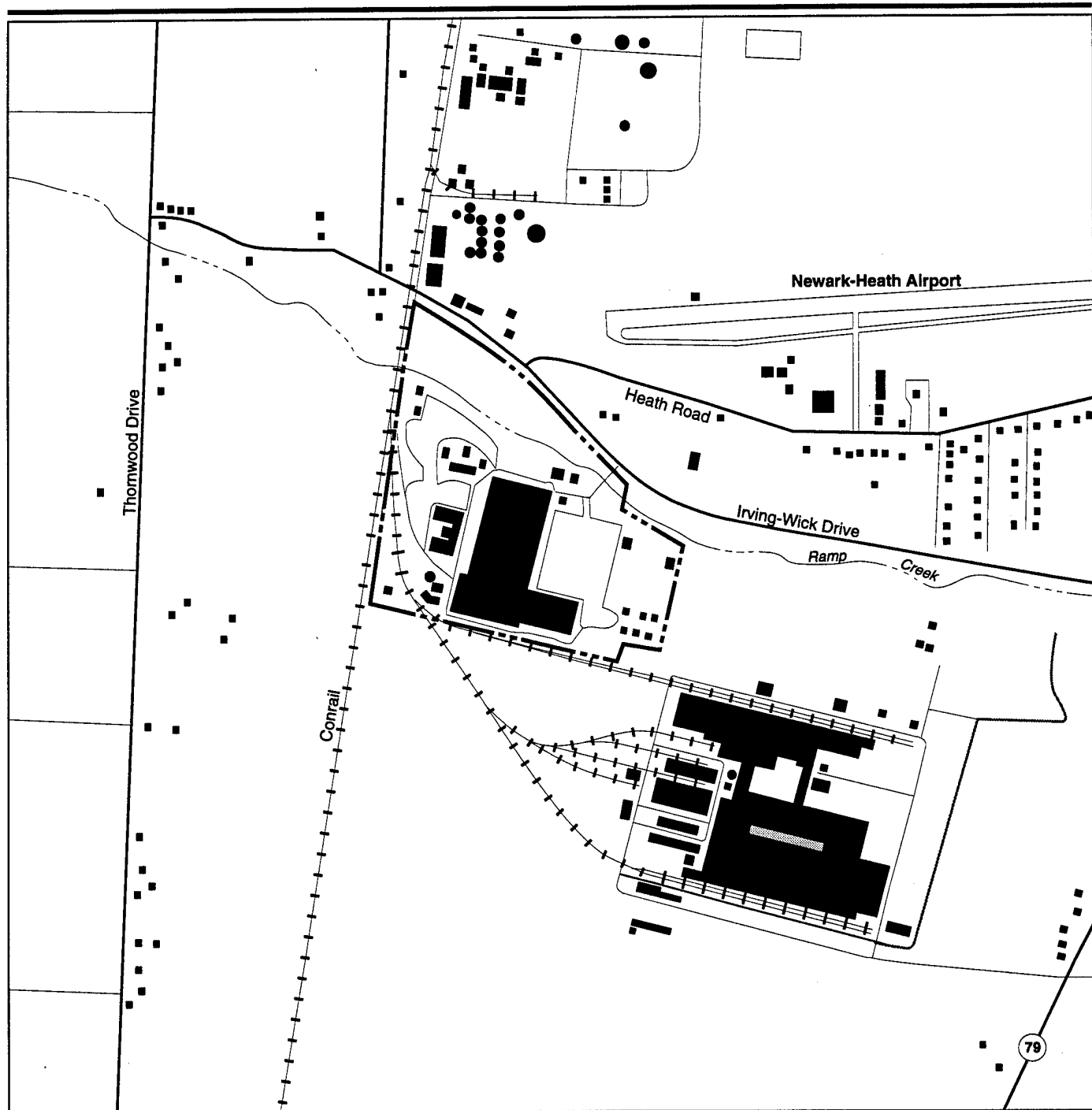
LOS = level of service

Source: Compiled from Transportation Research Board, 1985.

Local. Figure 3.2-8 identifies the general local road network in the immediate vicinity of Newark AFB. Irving-Wick Drive, a two-lane, undivided roadway with a speed limit of 55 mph, connects the base to SH 79. The PHV on Irving-Wick Drive between SH 79 and Heath Road averages 900. The PHV on Irving-Wick Drive west of Heath Road is 550. Heath Road, just north of the base, intersects with Irving-Wick Drive and also provides access to SH 79. This roadway has two lanes and a PHV of 350 vehicles.

Capacity analyses were assessed for the key local roadways; results are shown in Table 3.2-3. SH 79 between Irving-Wick Drive and South 30th Street and Irving-Wick Drive from Heath Road to SH 79 operate at LOS C during the peak hour. All other segments in the ROI operate at LOS B or better during the peak hour.

On-Base. Figure 3.2-9 shows the locations of the access gates to Newark AFB and the on-base road network. The East Gate located on Lamp Drive, is accessed from Irving-Wick Drive and is open 24 hours a day. Gate counts show a morning PHV of 450 vehicles. West Gate on Chatfield Drive south



EXPLANATION

--- Base Boundary

+ + + Railroad

(79) State Highway

0 225 500 1000 Feet



Local Transportation System

Figure 3.2-8

Table 3.2-3. Peak-Hour Traffic Volumes and LOS on Key Roads

Roadway	Segment	Capacity (VPH)	Preclosure (1992)	
			PHV	LOS
SH 79	Irving-Wick Drive to South 30th Street	3,600	2,500	C
SH 79	South 30th Street to northern Heath city limit	3,600	1,400	B
SH 79	Irving-Wick Drive to southern Heath city limit	4,400	1,900	B
Irving-Wick Drive	Heath Road to SH 79	2,300	900	C
Irving-Wick Drive	West of Heath Road	2,300	550	B
Heath Road	Irving-Wick Drive to SH 79	2,300	350	A

LOS = level of service
 PHV = peak-hour volume
 SH = State Highway
 VPH = vehicles per hour

of Ramp Creek is used as the main base access on weekends and for emergency purposes.

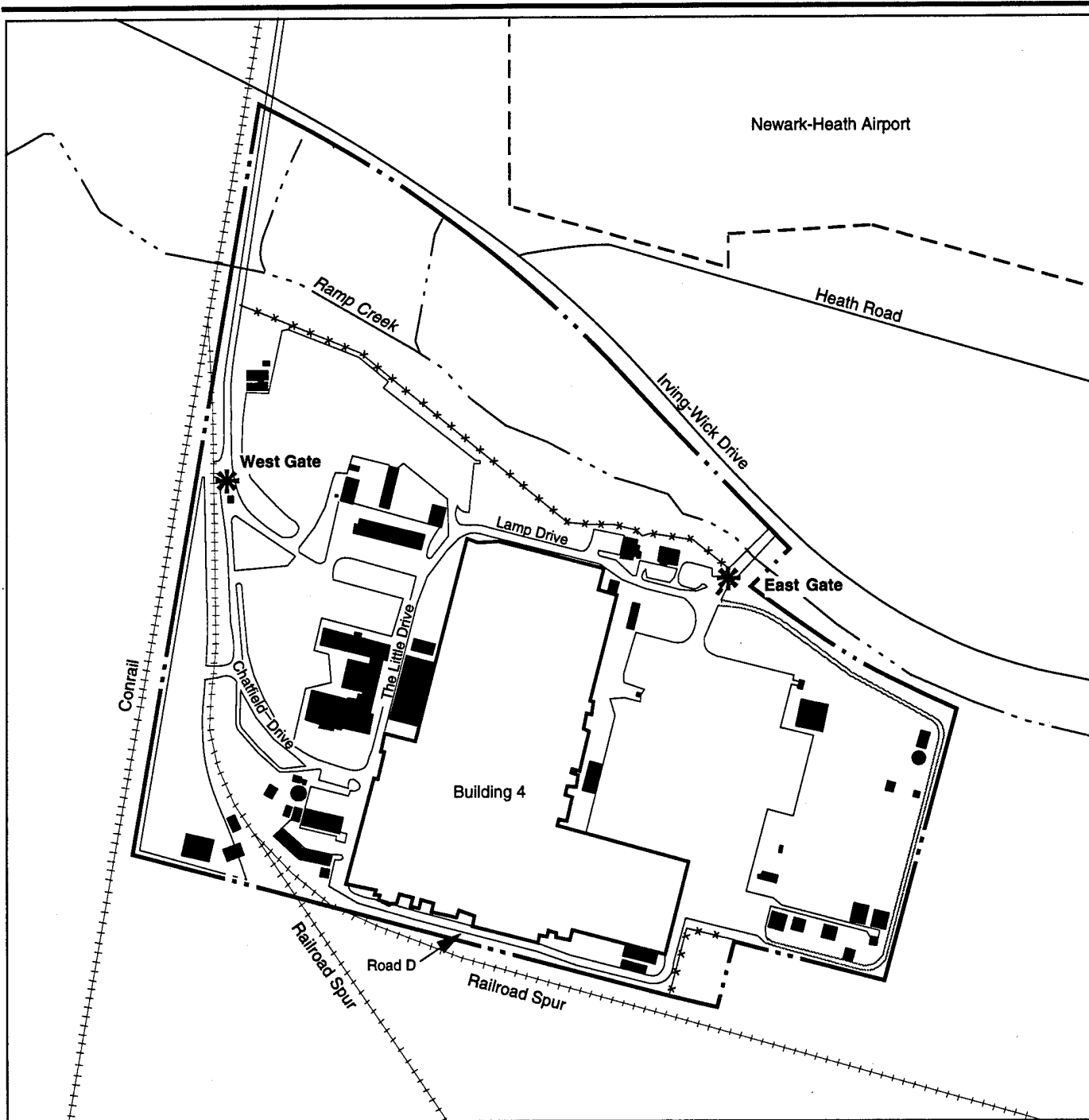
There are no signalized intersections on the base. On-base roads include Chatfield Drive, Lamp Drive, The Little Drive, and Road D. Each roadway has two lanes and is approximately 18 feet wide. The base also has approximately 1,890 parking spaces.

3.2.3.2 Other Transportation Modes. Conrail operates a rail line that forms the western boundary of the base. A spur from that line crosses the base and extends to an industrial facility to the southeast. No direct service is provided to Newark AFB. The Newark-Heath Airport, north of Newark AFB, services business jets and private aircraft.

3.2.4 Utilities

The utility systems addressed in this analysis include the facilities and infrastructure used for:

- Potable water pumping, treatment, storage, and distribution
- Wastewater collection and treatment
- Solid waste collection and disposal
- Energy generation and distribution, including the provision of electricity and natural gas.



EXPLANATION

- Base Boundary
- *-*-* Fence
- * Base Gate
- Newark-Heath Airport Boundary

Key On-Base Roads



Figure 3.2-9

The ROI for utilities includes the service areas of each utility provider servicing the base and local community. The major attributes of utility systems in the ROI are processing, distribution, storage capacities, average daily consumption, peak demand, and related factors required in making a determination of adequacy of such systems to provide services in the future.

3.2.4.1 Water Supply. The ROI for water supply consists of Newark AFB and the areas served by the cities of Heath and Newark.

On-Base. Newark AFB obtains potable water for domestic and industrial uses from two on-base wells. A third well is located on base; however, it is not used for potable supply as a result of 1,1,2-trichloro-1,2,2-trifluoroethane (CFC-113) contamination. Prior to treatment, water is stored in a 250,000-gallon elevated steel tank, half of which is reserved for emergency fire flow needs. The base water treatment plant has a maximum capacity of 0.45 MGD. After treatment, the water is sampled in accordance with state and federal regulations. Sample results indicate that the treated water meets current drinking water standards (see Section 3.4.2.4, Water Quality). Average daily consumption in 1993 was approximately 0.13 MGD, with 70 percent of the consumption associated with base cooling requirements.

Off-Base. The city of Heath obtains its water from six wells with a total capacity of 5 MGD. The city's treatment plant has a capacity of 1.8 MGD with an average daily consumption of 1.1 MGD. The city is anticipating expanding that plant to 4 MGD by 1996. The city of Newark obtains its water from two wells (total capacity of 4.5 MGD), and from the North Fork of the Licking River. Surface water is treated at a plant with a 15-MGD capacity. Average daily consumption was 5.08 MGD in 1992.

Average daily potable water consumption in the ROI is presented in Table 3.2-4. The average daily water use for the base in 1993 constituted 2.1 percent of the potable water consumed in the ROI.

Table 3.2-4. Daily Utility Consumption in the ROI

	1993
Water consumption (MGD)	6.31
Wastewater treatment (MGD)	8.6
Solid waste (tons/day)	1,144
Electrical consumption (MWH/day)	4,226
Natural gas (MMCF/day)	23.92

MGD = million gallons per day
 MMCF = million cubic feet
 MWH = megawatt-hours
 ROI = region of influence

3.2.4.2 Wastewater. The ROI for wastewater treatment consists of Newark AFB and the areas served by the cities of Heath and Newark. The combined system capacity in these service areas can treat up to 9.75 MGD.

On-Base. Wastewater generated at Newark AFB is collected and pumped by a lift station to the city of Heath's 15-inch gravity sewer main that runs along Irving-Wick Drive. Wastewater is discharged to the city of Heath's wastewater treatment plant in accordance with wastewater discharge permit NAFB-04-A. Over the past 3 years, Newark AFB has experienced exceedances in their wastewater discharge permit for mercury, oil and grease, and methylene blue anionic surfactants. In an attempt to preclude any additional permit exceedances for mercury, the base has and is continuing to conduct extensive investigations to identify possible mercury discharge points. Oil and grease standards were exceeded once in the past 3 years. This was believed to be a result of a grease trap overflow; however, the base conducts regular maintenance for cleaning grease traps. State standards for surfactants have recently been exceeded; however, the state has been in the process of revising discharge limits and therefore does not consider these exceedances as permit infractions. Average daily wastewater flow in 1993 was 0.07 MGD.

Off-Base. The cities of Heath and Newark provide separate wastewater treatment to their residents. The city of Heath has an extended aeration treatment plant, with a capacity of 1.75 MGD and average daily flows of 1.1 MGD in 1993. The city of Newark has a secondary treatment plant with an average daily capacity of 8 MGD. Average daily wastewater flow to the plant was 7.5 MGD in 1992.

Table 3.2-4 presents wastewater generation in the ROI. In 1993 the base flow constituted less than 1 percent of the wastewater generated in the ROI.

3.2.4.3 Solid Waste. The ROI for solid waste disposal consists of waste disposal facilities that serve the Coshocton-Fairfield-Licking-Perry Solid Waste Management District.

On-Base. Solid waste generated at Newark AFB is hauled off base by a commercial hauler. The base has instituted a recycling program for high grade paper, scrap iron, scrap metal, cardboard, and tires. In 1993 the base recycled approximately 154 tons and disposed of 619 tons (1.69 tons per day).

Off-Base. The Coshocton-Fairfield-Licking-Perry Solid Waste Management District estimated that residential, commercial, and industrial waste totaling 1,144 tons per day was generated in 1992 within the district, including Newark AFB. Solid waste generated in the cities of Heath and Newark and throughout the district is disposed of at landfills in Fairfield and Perry counties and at other facilities as far away as Cincinnati. The landfill in Perry County has a life expectancy of 15 years, and the landfill in Fairfield County

has a life expectancy of approximately 3 years. Additional landfill space is being planned in Coshocton County.

Table 3.2-4 presents the amount of solid waste disposed of in the ROI. Newark AFB generated approximately 1.69 tons per day in 1993. This amount constituted less than 1 percent of the solid waste disposed of in the ROI.

3.2.4.4 Energy. The ROI for energy consists of the local service area of Ohio Power Company and National Gas and Oil Corporation.

Electricity

On Base. Electricity is provided to Newark AFB by two 69-kilovolt Ohio Power Company transmission lines in a loop feed configuration to the on-base substation. The substation is equipped with two 7,500-kilovolt ampere transformers. Recent loads on the substation have consumed approximately 55 percent of capacity. Several circuits provide electricity to distribution transformers at various locations on Newark AFB.

Off-Base. Ohio Power Company provides electrical power to 651,545 customers in more than half of Ohio's 88 counties. It is one of eight electric companies owned by American Power Company and had the capability to meet electrical sales of 4,226 MWH per day in 1993.

Table 3.2-4 presents electrical consumption in the ROI. Newark AFB consumed approximately 122.6 MWH per day in 1993. This amount constituted approximately 3 percent of the electricity consumed in the ROI.

Natural Gas

On-Base. Natural gas is provided to the base by National Gas and Oil Corporation through an 8-inch high-pressure pipeline. Service to the base is through a meter and regulator station that reduces the line pressure to approximately 20 pounds per square inch. Two underground storage tanks (USTs) contain a combined total of 180,000 gallons of propane that could be used if the natural gas supply to the base were disrupted.

Off-Base. National Gas and Oil Corporation provides service to 22,765 customers in 12 counties in east-central and southeastern Ohio. In 1993 the company provided 23.92 MMCF per day of natural gas to 15,000 customers in Licking County and the cities of Heath and Newark. In 1994, Columbia Distribution Companies provided 12 MMCF per day to commercial and industrial customers within Licking County.

Table 3.2-4 presents natural gas consumption in the ROI. Newark AFB consumed approximately 0.26 MMCF per day in 1992, approximately 0.7 percent of the natural gas consumed in the ROI.

3.3 HAZARDOUS MATERIALS AND HAZARDOUS WASTE MANAGEMENT

Hazardous materials and hazardous waste management activities at Newark AFB are governed by specific environmental regulations. For the purpose of the following analysis, the term hazardous waste or hazardous materials will mean those substances defined as hazardous by CERCLA, 42 U.S.C. § 9601 et seq., as amended, and the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act (RCRA), 42 U.S.C. § 6901-6992, as amended. In general, this includes substances that, because of their quantity, concentration, or physical, chemical, or infectious characteristics, may present substantial danger to public health, welfare, or the environment when released into the environment. The state regulates wastes under the Ohio Hazardous Waste Management Regulations, Ohio Administrative Code (OAC) Title 3745, Chapters 50-69 as promulgated by the Solid and Hazardous Waste Disposal Law, Ohio Revised Code (ORC) Title 37, Chapter 3734. Hazardous waste is regulated by the Ohio Environmental Protection Agency (EPA).

Transportation of hazardous materials is regulated by the U.S. Department of Transportation regulations within 49 CFR. Ohio adopted the more stringent Hazardous Material Transportation Law, ORC 3745.15 et seq., in 1988 to regulate the transport of hazardous materials within the state, which is enforced by the Public Utilities Commission of Ohio. The transport of hazardous wastes in Ohio is regulated under OAC 3745-52-20 to 33 and is enforced by the Ohio EPA.

Treatment and disposal of nonhazardous waste, including wastewater, is discussed in Section 3.2.4 as part of infrastructure support.

The ROI encompasses all geographic areas that are exposed to the possibility of a release of hazardous materials or hazardous wastes. The ROI for known contaminated sites is within the existing base boundaries, with the exception of a portion of Landfill 2 and some areas along the perimeter fence where CFC-113 was discharged to control weeds. Contamination at these areas may have migrated off base. Specific geographic areas affected by past and current hazardous waste operations, including cleanup activities, are presented in detail in the following sections.

The baseline reference for the purposes of this analysis was established as December 1992. This date represents conditions of full mission operation.

3.3.1 Hazardous Materials Management

A hazardous material is a broad term for all substances that may be hazardous because of quantity, concentration, or physical or chemical characteristics and that pose a present or potential hazard to human health and safety or to the environment if a release occurs, including hazardous waste (Section 3.3.2). Oxidizers and substances that are flammable,

combustible, corrosive, reactive, radioactive, or toxic are considered hazardous.

The most commonly utilized hazardous materials at Newark AFB include: CFC-113; compressed gases; solvents; cleaning compounds; adhesives; antifreeze; petroleum, oil, and lubricants (POL); motor fuels; paints; paint strippers; and thinners.

Most hazardous materials are delivered to Base Supply in Building 4 and distributed to either the workplace or to other facilities for storage. Table 3.3-1 provides an inventory of hazardous material storage locations and the materials stored. CFC-113 is delivered and stored in two aboveground storage tanks (4,500 and 4,000 gallons) in Facility 119. Procurement and use of all hazardous materials utilized on Newark AFB are reviewed and approved by the Base Environmental Management Office.

Table 3.3-1. Hazardous Materials Storage Locations

Facility Number	Materials Stored
4	Small quantities of nonflammables
52 ^(a)	Bulk janitorial supplies
86	Compressed gases
102 ^(a)	Small quantities of flammables and corrosives
117 ^(a)	Bulk hazardous materials
119 ^(a,b)	Bulk CFC-113

Notes: (a) Constructed with secondary containment berms.

(b) Two aboveground storage tanks are located within facility.

CFC-113 = 1,1,2-trichloro-1,2,2-trifluoroethane

Source: U.S. Air Force, 1994a.

The Spill Prevention and Response Plan (U.S. Air Force, 1992j) provides guidance for storage and handling of hazardous substances used at Newark AFB. The plan provides contingency plans in the event of a hazardous substance release identifying specific personnel, responsibilities, and facility-specific plans to follow in order to ensure personnel safety and protect the environment, with minimal impacts to Newark AFB's primary mission.

Material Safety Data Sheets (MSDSs) provide a summary of important health, safety, and toxicological information for specific chemicals on the mixture ingredients of a product. An inventory of MSDSs for all hazardous materials utilized on base is maintained by the Base Bioenvironmental Engineer and Base Supply. Additionally, each workplace maintains MSDSs for all hazardous materials utilized or stored at that location.

On March 1 of each year, Newark AFB provides the State Emergency Response Commission, Ohio EPA, and the Licking County Emergency Response Committee an annual emergency response and extremely

hazardous substance update, in compliance with the Emergency Planning and Community Right-to-Know Act (EPCRA), 42 U.S.C. § 11001 et seq.

3.3.2 Hazardous Waste Management

Normal operations at Newark AFB currently produce wastes defined as hazardous by RCRA, 40 CFR 261-265, and Ohio Hazardous Waste Management Regulations OAC 3745-51-02. Additionally, hazardous wastes are regulated under 37 ORC and OAC 3745-50 to 69.

The management of hazardous waste at Newark AFB is the responsibility of the Environmental Management Office. The base is considered a large-quantity generator since it generates over 100 kilograms (220.46 pounds) of hazardous wastes per month. The base operates under an interim RCRA Part A permit, which allows for the storage of hazardous waste at Building 87 for up to 1 year. However, since Building 87 is undergoing closure, all hazardous wastes generated on base must be disposed of within 90 days following transfer to the accumulation point located in Building 114.

Hazardous wastes are generated throughout the base and collected at 38 satellite accumulation points (Table 3.3-2). The waste collection capacity of these satellite accumulation points varies, with a maximum capacity of 55 gallons. Hazardous wastes may be accumulated for an indefinite period of time as long as the maximum capacity is not exceeded. Upon reaching the maximum capacity, wastes are transferred to Building 114. Coordination of final off-base disposal by a permitted waste hauler is the responsibility of the Defense Reutilization and Marketing Office (DRMO), located at the Defense Construction and Supply Center (DCSC) in Columbus. Satellite accumulation points are regularly inspected by the Environmental Management Office, and Air Force Environmental Compliance Assessment and Management Program inspections are conducted annually. The state also conducts an annual RCRA inspection.

The Environmental Management Office has developed and implemented the Hazardous Waste Management Plan for Newark AFB (U.S. Air Force, 1993c), which provides guidance for effective controls of all hazardous wastes, including waste storage, disposal, identification of individual responsibilities, satellite accumulation point management, and emergency response procedures. In 1992 and 1993, mission operations at Newark AFB generated a total of approximately 115,000 pounds of RCRA and non-RCRA hazardous waste. Approximately 54,000 pounds, or 47 percent, of these wastes were sand-blasting materials with paint chips (considered an RCRA waste) generated during the maintenance of the water tower (Facility 28). RCRA wastes are considered hazardous due to their physical and chemical characteristics and their potential to harm humans and the environment. Non-RCRA wastes are defined as wastes excluded from hazardous waste regulations and include recyclable wastes (except sludge or listed wastes).

Table 3.3-2. Hazardous Waste Accumulation Points

Site No.	Location (Facility No.)	Location Description	Waste Description
90-Day Accumulation Point			
1	114	Hazardous Waste Storage Facility	
Satellite Accumulation Points			
2	4	Drum 9 - 11th Avenue and S Street	Chlorinated solvents
3	4	Drum 10 - 11th Avenue	Chlorinated solvents
4	4	Drum 11 - P Street	Chlorinated solvents
5	4	Drum 12 - P Street	Chlorinated solvents
6	4	Drum 14 - 20th Avenue and G Street	Chlorinated solvents
7	4	Drum 15 - 26th Avenue and G Street	Chlorinated solvents
8	4	Drum 16 - D Street	Chlorinated solvents
9	4	Drum 17 - 27th Avenue	Chlorinated solvents
10	4	Drum 19/20 - 34th Avenue	Chlorinated solvents
11	4	Drum 21 - 34th Avenue	Chlorinated solvents
12	4	Drum 22 - F Street	Chlorinated solvents
13	4	Drum 27 - Room 41F13	Sodium chromate
14	4	Drum 28 - Room 41A22	Sodium chromate
15	4	Drum 29 - Room 41M20	Sodium chromate
16	4	Drum 30 - Room 41H39	Sodium chromate
17	4	Drum 31 - Room 41H39	Sodium chromate
18	4	Drum 32 - Room 41H39	Sodium chromate
19	4	Drum 34 - Room 41H39	Sodium chromate
20	4	Drum 35 - Room 41M20	Sodium chromate
21	4	Drum 37 - Room 41E16	Photochemicals
22	4	Drum 40 - Room 41E0	Paint waste
23	4	Drum 43 - Room 41H25	Nickel/cadmium batteries
24	4	Drum 48 - Room 41N1	Bead blasting media
25	4	Drum 53 - 31st Avenue	Beryllium/fluorocarbons
26	4	Drum 57 - 12th Avenue and G Street	Oil
27	4	Drum 59 - 31st Avenue	Oil
28	4	Drum 61 - Compressor Room	Oil
29	4	Drum 64 - Room 41H17	Lead
30	4	Drum 68 - B Street	Blanket wash
31	4	Drum 76 - Room 41H17	Electro-cleaning solution
32	4	Drum 80 - Room 41H17	Activating solution
33	4	Drum 82 - 27th Avenue and G Street	Cesium tubes
34	4	Drum 84 - Room 42D4	Water and heavy metals
35	4	Drum 86 - Room 41K0	Acid
36	4	Chemistry Laboratory	Sodium chloride
37	8	Drum 62 - Pumphouse	Oil
38	17	Vehicle Operations Storage	Oil and antifreeze
39	20	Roads and Grounds	Oil

Source: U.S. Air Force, 1993e.

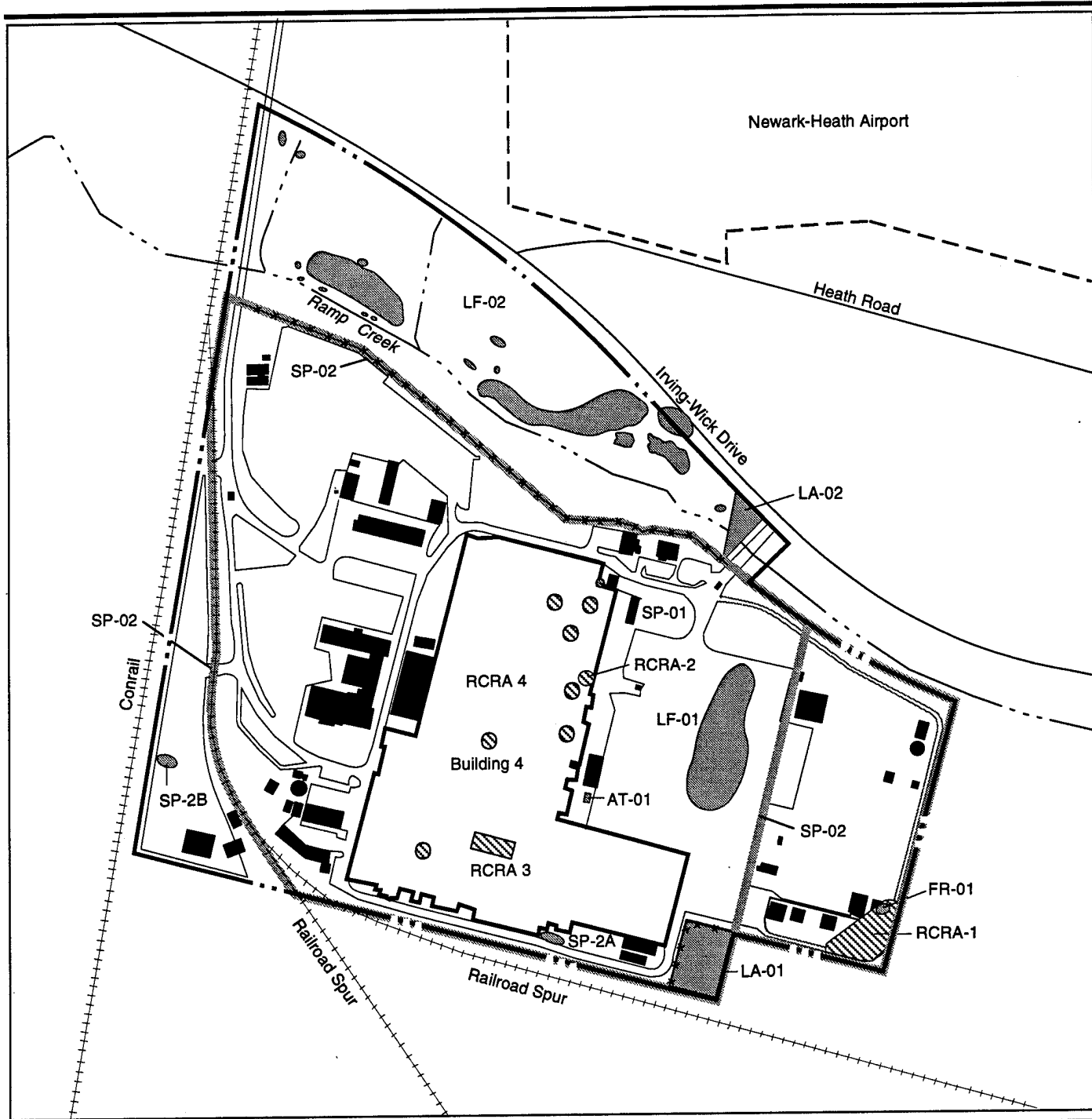
Approximately 41,000 pounds, or 36 percent, of the annual waste generated were considered non-RCRA or recyclable wastes and included CFC-113, waste oils, solvents, and batteries. The remaining 20,000 pounds of waste generated during this time consisted of various types of RCRA wastes.

A Pollution Prevention Management Plan (U.S. Air Force, 1992i) has also been developed by the Environmental Management Office to establish an overall strategy by utilizing revised workplace practices, procedures, and implementing requirements to achieve basewide pollution prevention objectives. Although only a draft, it has been implemented as a working document.

The former hazardous waste storage facility (Facility 87) operated under an interim Part A RCRA permit submitted to the state in 1981. This facility was identified as an RCRA site (RCRA-1) due to extensive on-site soil contamination. In 1990, the facility was demolished and contaminated soils were removed as part of the site closure process. Soil vapor extraction remediation is under way at RCRA-1 as part of an amended closure/post-closure plan approved by Ohio EPA in 1994 that includes soil and groundwater treatment.

In 1992, a second RCRA (RCRA-2) site was identified and investigated to determine the extent of contamination and will be investigated as part of a basewide supplemental remedial investigation (SRI). This site consists of contaminated soil beneath Building 4, near Clean Room 1, and extends beneath the building foundation. This soil is believed to have been contaminated with CFC-113 when a floor sump overflowed, allowing CFC-113 to access the soil through cracks in the concrete floor.

Two additional RCRA sites associated with CFC-113 are also located within Building 4 (RCRA-3 and 4). One site includes three dewatering sumps, which pump groundwater containing small amounts of CFC-113 into the storm drain, and into Ramp Creek from three storm drain outfalls. One of the outfalls is utilized as an overflow outfall only during periods of heavy precipitation. Newark AFB has applied for a National Pollutant Discharge Elimination System (NPDES) permit for one of these outfalls. An NPDES permit application for the other two outfalls is scheduled to be submitted in summer 1995, either by amending the existing permit application or by applying for individual permit(s) for these outfalls. The other RCRA site consists of seven spent CFC-113 recirculation sumps. Three of these may have overflowed, allowing CFC-113 to access subfoundation soils; the status of this site is presently unknown. The locations of the RCRA sites are shown in Figure 3.3-1.



EXPLANTION

- Base Boundary
- *- Fence
- IRP Site
- ▨ RCRA Site
- - - Newark-Heath Airport Boundary



RCRA and IRP Site Locations, Newark AFB

Note: Site SP-02 follows portions of the current and former fence line.

RCRA Site 4 consists of seven CFC-113 recirculation sumps within Building 4.

Source: U.S. Air Force 1993a.

Figure 3.3-1

3.3.3 Installation Restoration Program Sites

The IRP is an Air Force program to identify, characterize, and remediate past environmental contamination on its installations. Although widely accepted at the time, procedures followed prior to the mid-1970s for managing and disposing of many wastes often resulted in contamination of the environment. The program has established a process to evaluate past disposal sites, control the migration of contaminants, and control potential hazards to human health and the environment. Section 211 of the Superfund Amendments and Reauthorization Act (SARA), codified as the Defense Environmental Restoration Program (DERP) of which the Air Force IRP is a subset, ensures that DOD has the authority to conduct its own environmental restoration programs. DOD coordinates IRP activities with U.S. EPA and appropriate state agencies.

Prior to the passage of SARA and the establishment of the National Oil and Hazardous Substance Pollution Contingency Plan (NCP) for hazardous waste sites, Air Force IRP procedures followed DOD policy guidelines mirroring the U.S. EPA Superfund Program. Since SARA was passed, many federal facilities have been placed on a federal docket and the U.S. EPA has been evaluating facility waste sites for possible inclusion on the National Priorities List (NPL). The U.S. EPA has not proposed Newark AFB for listing on the NPL; however, the base is being reevaluated for possible NPL consideration based on U.S. EPA revised scoring criteria.

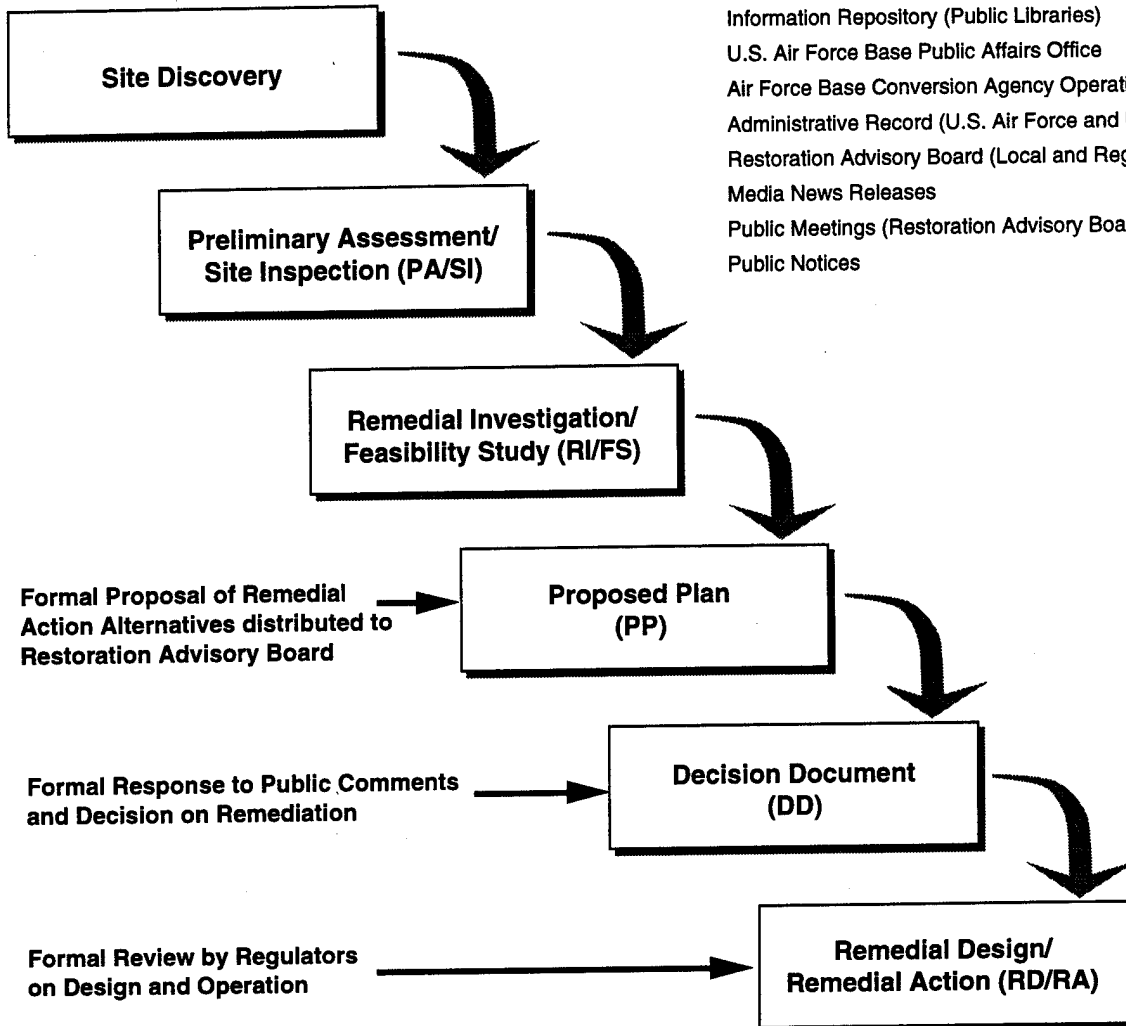
State regulators and local community members will review, comment, and provide recommendations on project plans, and identify applicable or relevant and appropriate regulations by participating in the Restoration Advisory Board (RAB). Additionally, in February 1994, the DOD and the state of Ohio entered into a DOD/State Memorandum of Agreement (DSMOA), in which Ohio EPA will oversee site remediation by establishing and enforcing regulatory mechanisms, as well as establishing remediation alternatives, guidelines, and schedules.

Ongoing activities at identified IRP sites may delay or limit some proposed land uses at or near those sites. Future land uses by the recipients on a site-specific level may be, to a certain extent, limited by the severity of contamination or level of remediation effort at these IRP sites. Reasonably foreseeable land use constraints are discussed in this EA. Regulatory review, as required by DSMOA and the Air Force programs, will also ensure that any site-specific land use limitations are identified and considered. A representation of the IRP management process followed at Newark AFB is shown in Figure 3.3-2.

**INSTALLATION RESTORATION PROGRAM (IRP) PROCESS
(The CERCLA Process)**

Sources of Information on IRP

Information Repository (Public Libraries)
U.S. Air Force Base Public Affairs Office
Air Force Base Conversion Agency Operating Location (OL)
Administrative Record (U.S. Air Force and U.S. EPA)
Restoration Advisory Board (Local and Regulatory Officials)
Media News Releases
Public Meetings (Restoration Advisory Board)
Public Notices



**Pictorial Presentation
of IRP Process**

Figure 3.3-2

The original IRP was divided into four phases, consistent with CERCLA:

- Phase I: Problem Identification and Records Search
- Phase II: Problem Confirmation and Quantification
- Phase III: Technology Development (TD)
- Phase IV: Corrective Action.

After SARA was passed in 1986, the IRP was realigned to incorporate the terminology used by the U.S. EPA and to integrate the new requirements in the NCP. The result was the creation of three action stages:

- Preliminary Assessment/Site Inspection (PA/SI)
- Remedial Investigation/Feasibility Study (RI/FS)
- Remedial Design/Remedial Action (RD/RA).

The PA portion of the first stage under the NCP is comparable to the original IRP Phase I and consists of a records search and interviews to determine whether potential problems exist. A brief SI that may include soil and water sampling is performed to give an initial characterization or confirm the presence of contamination at a potential site.

An RI is similar to the original Phase II and consists of additional fieldwork and evaluations in order to assess the nature and extent of contamination. It includes a risk assessment and determines the need for site remediation.

The original IRP Phase IV has been replaced by the FS and RD within the third stage. The FS documents the development, evaluation, and selection of alternatives to remediate the site. The selected alternative is then designed (RD) and implemented (RA). Long-term monitoring is often performed in association with site remediation to assure future compliance with contaminant standards or achievement of remediation goals. The Phase III portion of the IRP process is not included in the normal SARA process. TD under SARA is done under separate processes, including the Superfund Innovative Technology Evaluation program. The Air Force has an active TD program in cooperation with the U.S. EPA to find solutions to problems common to Air Force facilities.

The closure of Newark AFB will not affect the ongoing IRP activity. These IRP activities, managed by the OL, will continue in accordance with federal, state, and local regulations to protect human health and the environment, regardless of the disposal decision. The DSMOA will establish regulatory mechanisms, set remediation standards, provide remediation alternatives, and set remediation schedules. Additionally, the establishment of the RAB allows for the joint involvement in the IRP among the U.S. Air Force, federal and state regulatory agencies, and local communities. The Air Force will Figure retain any necessary interests (e.g., easements) in order to perform operations and maintenance on all remediation systems.

The public may keep abreast of the IRP at Newark AFB through various sources of information, including the public/open viewing of the IRP documents contained in the administrative record located at the Environmental Management Office on base and the Newark Public Library at 88 West Church Street. Appendix C contains the Newark AFB IRP bibliography. Additionally, the IRP, as mandated by CERCLA and the NCP, has a public participatory program. The Air Force will, with the acceptance of each RI/FS by the regulatory community, prepare a proposed plan for the remediation of a site(s), which will include a discussion of alternatives considered. The proposed plan will be distributed to the public for comment; a public meeting will be held to discuss the proposed plan, and comments on the proposed plan will be accepted by the Air Force. The Air Force will then respond to all comments, making those responses part of a decision document on what the remediation will entail prior to any remedial action being taken (see Figure 3.3-2).

Because the Air Force began the IRP process at Newark AFB in 1984, prior to terminology and procedural changes, both phases and stages are contained in the IRP administrative record. The IRP Phase I-Records Search was published in 1985. It initially identified seven potentially contaminated sites, including four CFC-113 spill sites (SP-01, SP-02, SP-2A, and SP-2B), a former landfill site (LF-01), a former fire training area (FR-01), and a former aboveground acid storage tank site (AT-01). Figure 3.3-1 provides site locations. The four spill sites (SP-01, SP-2A, SP-2B, and AT-01) were considered to pose a potential threat to human health and the environment. The sites were evaluated using the Hazard Assessment Rating Methodology (HARM), which was used during early IRP Phase I investigations to prioritize sites of contamination for remedial action based on potential hazards to human health and the environment. No Phase II investigations were recommended for these four sites based on their HARM scores. However, analyses of water samples from all dewatering sumps within Building 4, water samples from the three on-base water wells, and two soil samples along the perimeter fence were recommended as part of Phase II, Stage 1 investigation measures in an attempt to identify additional contaminants and/or their locations.

The Air Force concurrently evaluated a 13.39-acre parcel containing a former landfill to determine the environmental quality and assess potential liabilities associated with the acquisition of this parcel. The parcel is located in the northern portion of the base, between Ramp Creek and Irving-Wick Drive. The parcel was formerly owned by the Pure Oil Company, Koppers/Byerlyte Corporation, and David and Inex Myers, who donated the property to the Air Force. The site was a lowland area that had been filled with excavated soil, construction debris, and asphaltic material prior to acquisition by the Air Force. The parcel donation was accepted and incorporated into the IRP as Site AC-13 in 1984. The landfill is also designated as Site LF-02.

In 1988, an SI was conducted on LF-02 and on six of the seven IRP sites identified during the Phase I-Records Search; Area FR-01 was not further investigated. Organics were detected in the soils at five of the seven sites; this contamination was believed to be due to the presence of CFC-113. CFC-113 was detected in the shallow aquifer groundwater in the vicinity of LF-01 on the eastern side of Building 4, and the highest concentrations were detected in the sump that drains water from the foundation of Building 4. Polynuclear aromatic hydrocarbons were detected at Site LF-02 and in the sediments of Ramp Creek. All sites, with the exception of AT-01, were recommended for further evaluation under a subsequent RI. The Building 4 dewatering sumps were also recommended for investigation during the RI.

The RI was implemented in 1989 and included the installation of additional groundwater monitoring wells, as well as the collection of additional surface water, stream sediment, and soil samples to identify specific contaminants and determine the extent of contamination at each site. The RI resulted in the issuance of eight decision documents, which have been sent to the U.S. EPA Region V and Ohio EPA for approval. No Further Response Action Planned (NFRAP) decision documents for Sites AT-01, LF-01, SP-01, SP-02, SP-2A, and SP-2B stated that contamination was detected in the soils and/or groundwater at each site, but no unacceptable risk or hazard to on-site workers or off-site receptors was present. An NFRAP decision document for Site FR-01 stated that no contamination was detected on site. The decision document for Site LF-02 recommended conducting a focused feasibility study (FFS) to evaluate remediation alternatives.

Two additional sites, LA-01 and LA-02, were identified during a land acquisition process. PAs were conducted in late 1988 to determine their environmental condition prior to purchase. No contamination was detected and NFRAPs were submitted for regulatory approval in 1989. Although decision documents have been submitted, it remains unknown if additional investigations will be required for these sites since none of the aforementioned NFRAP decision documents have received regulatory approval.

In 1993, an FFS was conducted at Site LF-02 and included the collection of soil samples, a soil treatability study, a risk assessment, and the evaluation of remediation alternatives. A remediation alternative has yet to be selected for Site LF-02.

Newark AFB is conducting an SRI to further support NFRAP decision documents submitted for regulatory approval. The SRI will confirm the presence or absence of contamination at any given site, which will allow regulators to determine the applicability of decision documents.

IRP Site Descriptions. The following sections provide a detailed site description of the ten sites that have been investigated as part of the Newark AFB IRP. Figure 3.3-1 provides IRP site locations.

Acid Storage Tank (AT-01). Site AT-01 on the east side of Building 4 is the location of a former 1,000-gallon aboveground tank. The tank was constructed in the early 1960s to store acids used during water treatment operations; however, it was never used for this purpose. The tank was constructed with a concrete basin with a drain valve opening to the sanitary sewer. It was used as a separating tank for contaminated CFC-113 from 1982 until it was dismantled in 1985-1986. Spills may have occurred when drums containing contaminated CFC-113 were emptied into the tank. Some spills would have been contained within the tank basin and some may have drained into the sanitary sewer, if the drain was open. Spills outside the concrete basin would have gone directly into the surrounding soils.

Site AT-01 was identified during the Phase I-Records Search, which identified CFC-113 spills on the ground outside the concrete basin. This site was rated, using HARM, as having a low potential risk and was recommended for no further action. Soil samples were taken at the site during an SI field program in August 1988.

Analysis of soil samples taken during the SI field program did not detect any CFC-113, and the SI concluded that no additional investigation would be required. Therefore, no RI activities were performed on the site; an NFRAP decision document was submitted for regulatory approval in 1989.

Fire Training Area (FR-01). Site FR-01, a former fire training pit, was located in the southeast corner of the base. The site was used from 1981 to 1983. Upon its closure, the site was covered with soil and grass. Lumber and paper were burned in fires started with paint rags. Fires were extinguished using water, carbon dioxide, and foam from hand-held fire extinguishers. No known hazardous materials were burned in the pit. The site was excavated during construction of the hazardous waste storage facility. The site was identified in the Phase I-Records Search. Because no hazardous materials were known to have been burned in the pit, it was assessed as having no potential for contaminant migration and no potential health hazard. Therefore, the site was not evaluated using the HARM and was recommended for no further action. An NFRAP decision document was submitted in 1989.

Landfill 1 (LF-01). Site LF-01 is located near the center of Parking Lot 6 on the east side of Building 4. Construction debris was disposed of in a small ditch from 1963 to 1965. Empty 1- and 5-gallon paint cans may also have been disposed of in this area. In 1965 the site was covered with dirt and graded. Prior to 1975 the site was situated adjacent to the former base perimeter fence that received application of spent CFC-113 to control weeds (see Site SP-02). Analysis of soil and groundwater samples taken near the site showed high levels of CFC-113 and 1,1-dichloroethane and low levels of benzene, toluene, and 1,1,1-trichloroethane. In 1975, the site was excavated and the debris removed prior to paving a parking lot.

This site was identified during the Phase I-Records Search and was considered to have no potential for environmental contamination; therefore, it was not rated using the HARM. However, the site was included in the SI because it could not be determined if the site had received hazardous materials. The SI field program included drilling two monitoring wells near the site to sample soil and groundwater. Elevated levels of CFC-113 and 1,1-dichloroethane, and low levels of benzene, toluene, and 1,1,1-trichloroethane were detected in the soil samples. Elevated levels of CFC-113 and low concentrations of 1,1-dichloroethane and benzene detected in the groundwater samples indicate that contaminants may have migrated to the shallow aquifer. Additional study of the site was recommended to determine the extent of soil contamination and the potential for contamination of the deeper aquifer. Soil and groundwater samples, including groundwater from the deeper aquifer, were collected during the RI field program conducted from November 1989 to May 1990. The RI concluded that there is no current complete pathway for exposure to soil contaminants, and there are no immediate receptors exposed to shallow or deeper aquifer contaminants. As a result, an NFRAP decision document was submitted for regulatory approval in 1991.

Landfill 2 (LF-02). This 13-acre parcel is located in a vacant area in the northern portion of Newark AFB between Ramp Creek and Irving-Wick Drive. The site was donated to Newark AFB in 1984. The site was a lowland area that had been filled with excavated soil, construction debris, and asphaltic material prior to acquisition by the Air Force. Two drainage ditches cross the site from north to south and empty into Ramp Creek. One ditch is a wastewater discharge conduit from the KOCH Materials wastewater disposal facility located north of the base. The site is also located on the edge of an oil- and gasoline-contaminated groundwater plume that originates north of the base. Although this groundwater contamination has been partially remediated, remaining product may migrate under the site toward Ramp Creek.

Site LF-02 was first investigated in 1984 as part of a site evaluation prior to its acquisition by the base. Soil samples indicated hazardous constituents similar to those potentially occurring in crude petroleum asphalt residuals, primarily polynuclear aromatic hydrocarbons. Groundwater samples did not indicate the presence of these contaminants in the shallow aquifer; however, mercury, zinc, cadmium, and phenols were detected in the groundwater downgradient of the drainage ditches. No additional fieldwork was performed on the site during the SI. However, the SI report recommended additional evaluation of the site.

RI fieldwork on the site included a geophysical survey to identify fill areas; installation of monitoring wells; and the collection of soil, surface water, and stream sediment samples during 1989 and 1990. The investigation indicated three potential fill areas. Rusted drums were observed near one of the sites, and the other two fill areas were located near visible asphaltic

material. Polynuclear aromatic hydrocarbons were found in shallow soil and stream sediment samples. Volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), pesticides, and cyanide were also detected in soil samples. Aluminum, copper, cyanide, and lead were detected in drainage ditch water samples, and cyanide was also found in Ramp Creek water samples.

Additional soil samples were collected in 1993 as part of an FFS to better delineate the extent of polynuclear aromatic hydrocarbon and pesticide contamination. Six areas of asphaltic material were identified that may require remediation. The FFS identified five alternative remedial actions, all of which involve excavation of the asphaltic material, except for the No-Action Alternative. No specific remedial action has been chosen for this site.

Spent Battery Acid and Spent Solvent Disposal Area (SP-01). Site SP-01 is located at the northeast corner of Building 4. From 1963 until approximately 1976, spent battery acid and solvent chemicals were dumped on the ground at this location.

Site SP-01 was identified during the Phase I-Records Search. The site was rated using the HARM and was identified as having a moderate potential risk. Soil samples collected from the site as part of the SI in 1988 revealed the presence of sulfates and CFC-113 isomers. RI field activities included the installation of a shallow aquifer monitoring well for collecting soil and groundwater samples. In addition to CFC-113 and sulfates, sampling conducted during the RI identified toluene, 2-methylnaphthalene, and phenanthrene in the soil, and CFC-113 in the shallow aquifer. Because the site poses no direct risks or hazards to human health or the environment, an NFRAP decision document was submitted in 1991.

Application of Spent CFC-113 along Boundary Fence (SP-02). Site SP-02 includes the entire base perimeter fence (prior to 1980) where spent CFC-113 was used to control weeds from 1965 until possibly 1980. Used CFC-113, often commingled with 1,1,1-trichloroethane, was applied by spraying or dripping along the fence line. Prior to 1975, the fence line passed through what is now Parking Lot 6, east of Building 4 and adjacent to Site LF-01 (see Figure 3.3-1). Sub-sites SP-2A and SP-2B, which are adjacent to the fence line, were identified as disposal sites for large quantities of CFC-113; these sites are discussed below.

Site SP-02 was identified during the Phase I-Records Search. However, HARM was not used to rate the site because it can only be applied to a point source or area. Analysis of waste samples from Production Well (PW) 1, conducted during an SI in 1988, revealed that CFC-113 may have migrated to the deeper aquifer, which is used as a drinking water source for the base and the city of Heath. Based on soil samples from Sites LF-01, SP-2A, and SP-2B, the SI concluded that subsurface soils along both the former and

current boundary fences may contain CFC-113. To further evaluate potential soil and groundwater contamination, eight shallow and three deep monitoring wells were installed along the fence line as part of RI field activities conducted in 1989 and 1990. The RI concluded that CFC-113 concentrations and toxicity are not a concern in this area, and an NFRAP decision document was submitted for regulatory approval in 1991.

Spent CFC-113 Disposal near PW 1 (SP-2A). Site SP-2A is located on the south side of Building 4, east of PW 1. Approximately 5,000 gallons of spent CFC-113 may have been dumped here between 1973 and 1977.

Site SP-2A was identified during the Phase I-Records Search. The site was evaluated using the HARM as having a high potential risk and was recommended for further evaluation. Soil samples taken at the site during the SI in 1988 revealed elevated concentrations of CFC-113 isomers, 2-butanone, and 4-methyl phenol. CFC-113 was also detected in groundwater samples collected from PW 1. For the RI, a shallow well and a deep well were installed near the site, and additional soil samples were taken to evaluate the extent and magnitude of soil and groundwater contamination. CFC-113 and low levels of VOCs and SVOCs were detected in the soil; CFC-113 and tetrachloroethane were detected in the shallow aquifer. The RI of this site also included analysis to evaluate potential groundwater contamination from a former leaking UST, which was located west of the site prior to 1989. Groundwater analysis indicated the site was not affected by the leaking UST. However, a source investigation and continued monitoring of drinking water are planned at the site, and the source of tetrachloroethane will be addressed by an amended RCRA investigation at the former hazardous waste storage facility. An NFRAP decision document for this IRP site was submitted for regulatory approval in 1991.

Spent CFC-113 Disposal at Visitor and Contractor Parking (SP-2B). Site SP-2B is located on the west side of the base under Parking Lot 10. An unknown quantity of spent CFC-113 may have been dumped here between 1973 and 1980 before the area was graveled and later paved for parking.

Site SP-2B was identified during the Phase I-Records Search. The site was evaluated using the HARM as having a high potential risk and was recommended for further evaluation. Soil samples taken at the site during the 1988 SI revealed concentrations of CFC-113 compounds. During the RI, two shallow wells and one deep well were installed adjacent to the site. Soil and groundwater samples taken from the wells indicated localized CFC-113 contamination in the soil and shallow aquifer; CFC-113 was not identified during sampling of the deeper aquifer. CFC-113 concentrations and toxicity indicate that CFC-113 contamination is not a concern at this site, and an NFRAP decision document was submitted for regulatory approval in 1991.

Kaiser Land Acquisition (LA-01). Site LA-01 is located southeast of Building 4 and comprises approximately 0.57 acre. A PA was conducted in 1988 as part of the land acquisition process to determine the environmental condition of the property prior to purchase. No contamination was detected and an NFRAP decision document was submitted for regulatory approval in 1989.

Orr Land Acquisition (LA-02). Site LA-02 is located adjacent to the East Gate entrance and comprises approximately 0.2 acre. A PA was conducted in 1988 as part of the land acquisition process to determine the environmental condition of the property prior to purchase. No contamination was detected and an NFRAP decision document was submitted for regulatory approval in 1989.

3.3.4 Storage Tanks

USTs are subject to federal regulations within RCRA, 42 U.S.C. 6991, and U.S. EPA implementing regulations 40 CFR 280. These regulations were mandated by the Hazardous and Solid Waste Amendments of 1984. The state regulates USTs under the Ohio Underground Storage Tank regulations, OAC 1301-7. These regulations are enforced by the Bureau of Underground Storage Tanks, which is a division of the State Fire Marshal. Table 3.3-3 lists the USTs located on Newark AFB. The operation and construction of USTs are subject to National Fire Protection Association guidelines and the Uniform Fire Code and are enforced by the Bureau of Underground Storage Tanks.

Table 3.3-3. Inventory of Underground Storage Tanks (as of March 1994)

Location (Facility No.)	Capacity (gallons)	Content	Date of Installation	Construction Material
3 ^(a)	4,000	Diesel	1985	Fiberglass
3 ^(a)	4,000	Motor fuel	1985	Fiberglass
3 ^(a)	1,000	Motor fuel	1985	Fiberglass
27 ^(b)	275	Waste oil (empty)	1985	Steel
41 ^(c)	90,000	Propane	1976	Steel
41 ^(c)	90,000	Propane	1976	Steel
89 ^(a)	20,000	Fuel oil	1976	Fiberglass
129 ^(a)	550	Fuel oil (empty)	1989	Fiberglass

Notes: (a) Tanks are single walled with automated leak detection and spill, overfill, and corrosion protection.

(b) Inactive underground storage tank associated with oil/water separator; awaiting closure.

(c) Tanks cathodically protected.

Source: U.S. Air Force, 1994a.

As of March 1994, Newark AFB had 8 USTs and 28 aboveground storage tanks in place. The waste oil UST at the fuel station is undergoing closure. Three motor fuel USTs associated with the fuel station and the fuel oil UST

at Facility 89 have single-wall construction with automatic tank gauging systems, automatic line leak detectors, and spill and overfill protection. The two propane USTs at Facility 41 are active and can be utilized if a disruption occurs in the natural gas supply to the base. Facility 129 is registered with the state and is a single-walled, fiberglass-reinforced plastic UST that has never been utilized.

A draft UST management plan has been prepared. When finalized, this management plan will outline the activities necessary to maintain and manage USTs in an environmentally safe manner. The plan will also discuss regulatory requirements, organizational responsibilities, and leak detection and tank testing requirements.

Most of the aboveground storage tanks are used to store CFC-113 and are located in Building 4. Three aboveground storage tanks are used for storing diesel fuel to power emergency generators at Facilities 14, 115, and 124. All aboveground storage tanks have collection basins to contain small spills. The operation and construction of aboveground storage tanks are subject to regulation under the Clean Water Act oil pollution provisions (33 U.S.C. 1251-1578). Additional aboveground storage tank guidelines are provided by the National Fire Protection Association and the Uniform Fire Code. Table 3.3-4 lists the aboveground storage tanks located at Newark AFB.

Two oil/water separators are located on Newark AFB. The one at Building 3 is inactive, has been cleaned and capped, and remains in place. An active oil/water separator is located at the Roads and Grounds Facility (Building 20); this separator discharges to the storm drain system, and base Civil Engineering removes the collected oil on a regular basis.

3.3.5 Asbestos

ACM remediation is regulated by the U.S. EPA and the Occupational Safety and Health Administration (OSHA). The state of Ohio also has regulations pertaining to ACM remediation. Emissions of asbestos fiber into the ambient air are regulated in accordance with Section 112 of the Clean Air Act (CAA), which established the National Emissions Standards for Hazardous Air Pollutants (NESHAP). The NESHAP regulations address the demolition or renovation of buildings with ACM. The Toxic Substances Control Act (TSCA), 15 U.S.C. §§ 2601 et seq., and the Asbestos Hazard Emergency Response Act (AHERA) P.L. 99-519 and 101-637 provide the regulatory basis for handling ACM in kindergarten through 12th grade school buildings. AHERA and OSHA regulations cover worker protection for employees who work around or remediate ACM. The removal of asbestos is regulated under the Ohio Asbestos Abatement Law, ORC 3710, as codified under OAC 3701-34, and is enforced by the Ohio Department of Health. Disposal of asbestos is regulated under OAC 3745-27.

Table 3.3-4. Inventory of Aboveground Storage Tanks (as of March 1994)

Location (Facility No.)	Capacity (gallons)	Content
4 ^(a)	300	Methyl chloroform
4 ^(b)	300	CFC-113 (inactive)
4 ^(b)	300	Recycled CFC-113
4 ^(b)	300	Partially recycled CFC-113 ^(g)
4 ^(b)	500	Partially recycled CFC-113 ^(g)
4 ^(b)	500	Used CFC-113 ^(h)
4 ^(b)	500	Used CFC-113 ^(h)
4 ^(b)	1,000	Used CFC-113 ^(h)
4 ^(b)	1,000	Recycled CFC-113
4 ^(b)	1,000	Recycled CFC-113
4 ^(b)	1,642	CFC-113
4	1,500	Liquid nitrogen
4	6,000	Liquid nitrogen
4	6,000	Liquid nitrogen
4 ^(c)	35	Used CFC-113 ^(h)
4 ^(c)	35	Used CFC-113 ^(h)
4 ^(d)	35	CFC-113
4 ^(d)	35	CFC-113
4 ^(d)	35	CFC-113
4 ^(e)	35	Methyl chloroform
4 ^(f)	750	Sodium chromate
4 ^(e)	35	CFC-113 (inactive)
14	564	Diesel fuel
115	500	Diesel fuel
116	1,000	Propane
119	4,000	CFC-113
119	4,500	CFC-113
124	500	Diesel fuel

Notes: (a) Located in area 41E30.
(b) Located in northeast portion of building.
(c) Located in area 41G33.
(d) Located in area 41R3.
(e) Located in area 41E32.
(f) Located in area 41H39.
(g) Material undergoing recycling.
(h) Material awaiting recycling.
CFC-113 = 1,1,2-trichloro-1,2,2-trifluoroethane

Source: U.S. Air Force, 1994a.

Renovation or demolition of buildings with ACM has a potential for releasing asbestos fibers into the air. Asbestos fibers could be released due to disturbance or damage from various building materials, such as pipe and boiler insulation, acoustical ceilings, sprayed-on fireproofing, and other material used for soundproofing or insulation.

There are two primary categories that describe ACM. Friable ACM is defined as any material containing more than 1 percent asbestos (as determined using the method specified in Appendix A, Subpart F, 40 CFR 763, Section 1, polarized light microscopy) that, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure. Nonfriable ACM is any material that contains more than 1 percent asbestos but does not meet the rest of the criteria for friable ACM.

The current Air Force practice is to manage or remove ACM in active facilities and remove ACM following regulatory requirements prior to facility demolition. Removal of ACM occurs when there is a potential for asbestos fiber release that would affect the environment or human health. The Air Force policy for the management of asbestos for base closures is included in Appendix F.

A basewide survey for ACM has been conducted in accordance with FPMR and property disposal disclosure requirements. The basewide asbestos inventory was conducted in 1988 to identify the type, location, and condition of ACM. The survey identified ACM in 4 of the 18 buildings surveyed, including transite siding at Building 1; thermal system insulation in Building 2; a transite pipe on the exterior of Building 3; and thermal system insulation, sprayed-on fireproofing, vinyl floor tiles, and other ACM in Building 4. In addition, the industrial process cooling tower located east of Building 4 contains transite splash plates. Following the survey, asbestos that posed an immediate threat to human health or that could be potentially disturbed or damaged was abated. No suspect ACM was identified in Buildings 5, 6, 7, 8, 9, 20, 21, 22, 26, 52, 54, 55, 56, and 88.

An additional 18 facilities have been constructed at Newark AFB since 1988. Given the recent date of construction, ACM was not expected to be present. However, the basewide asbestos survey is scheduled to be updated prior to closure in order to document the existing condition of ACM and will include the facilities constructed since 1988.

The asbestos management plan for Newark AFB (U.S. Air Force, 1989c) provides a program that protects base personnel from excessive levels of ACM. This is accomplished by establishing management and organizational responsibilities and procedures. The Asbestos Operations Plan (U.S. Air Force, 1992a) was developed to implement the policies established in the Asbestos Management Plan. The Environmental Management Office develops and implements these plans and is supported by the Bioenvironmental Engineer who provides air monitoring, site survey support, and respirator certification. The Occupational Health group provides medical monitoring services. The Base Safety Office reviews all abatement operations to ensure compliance with all federal OSHA and Air Force Occupational Safety and Health Standards.

3.3.6 Pesticide Usage

The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) 7 U.S.C. §§ 136-136y regulates the registration and use of pesticides. Pesticide management activities are subject to federal regulations contained in 40 CFR 162, 165, 166, 170, and 171. The state requires that a commercial applicator of pesticides obtain a license from the Ohio Department of Agriculture under the Ohio Pesticide Law (ORC 291).

Pest management at Newark AFB is contracted to a private firm, and grounds maintenance activities are conducted by base civilian employees. Grounds maintenance duties include lawn care (mowing and fertilizing), nuisance plant control, and tree trimming. All pesticides are applied under the supervision of a state-licensed pesticide applicator. The grounds maintenance contractor does not store or mix pesticides, nor wash or maintain equipment on base.

Pest management activities are contracted to the local Terminex® franchise. Pest management plans are established and implemented by the contractor. The contractor submits quarterly pesticide usage reports to base Civil Engineering, which in turn forwards the reports to Air Force Materiel Command headquarters.

Civil Engineering stores small amounts of over-the-counter household insecticides in Building 117, including roach bait, wasp spray, and rat/mice poison (Table 3.3-5). These insecticides are used on an as-needed basis.

Table 3.3-5. Pesticide Inventory (as of December 13, 1993)

Name	Quantity
Insecticides	
Combat® Roach Killer	2.0 gallons
Ficam-W Beniocarb	0.5 pounds
Gencor 9 percent	9.0 ounces
Misty® Flying Insect Killer ^(a)	1.4 gallons
Roach/Ant Spray - Baygon	1.0 gallon
Sevin	10.0 pounds
Wasp Stopper ^(a)	1.9 gallons
Herbicides	
Roundup®	4.0 gallons
Rodenticides	
Final® Rat/Mouse Bait	10.0 pounds

Note: (a) Product in aerosol spray cans.

Source: U.S. Air Force, 1993f.

3.3.7 Polychlorinated Biphenyls

Commercial PCBs are industrial compounds produced by chlorination of biphenyls. PCBs persist in the environment, accumulate in organisms, and concentrate in the food chain. PCBs are used in electrical equipment, primarily in capacitors and transformers, because they are electrically nonconductive and stable at high temperatures.

The disposal of these compounds is regulated under TSCA, which banned the manufacture and distribution of PCBs, with the exception of PCBs used in enclosed systems. By federal definition, PCB equipment contains 500 parts per million (ppm) PCBs or more, whereas PCB-contaminated equipment contains PCB concentrations of 50 ppm or greater, but less than 500 ppm.

The U.S. EPA, under TSCA, regulates the removal and disposal of all sources of PCBs containing 50 ppm or more; the regulations are more stringent for PCB equipment than for PCB-contaminated equipment. The state of Ohio has adopted federal PCB regulations, which are enforced by the Ohio EPA.

A basewide PCB survey was conducted by the 2803rd Civil Engineering Squadron at Newark AFB in 1988 and included the testing of all transformers and capacitors. The survey identified 2 transformers, 36 capacitors, and several small capacitors in 3 vibration power amplifiers as containing PCBs over 50 ppm; these transformers were retrofilled to below 50 ppm in April 1989. Additionally, several high-voltage capacitors with 50 to 500 ppm PCBs have been removed from service and remain on base awaiting disposal. An inspection by the Ohio EPA in September 1991 found Newark AFB to be in compliance with PCB regulations.

3.3.8 Radon

Radon is a naturally occurring, colorless and odorless radioactive gas that is produced by radioactive decay of naturally occurring uranium. Uranium decays to radium, of which radon gas is a by-product. Radon is found in high concentration in rocks containing uranium such as granite, shale, phosphate, and pitchblende. Atmospheric radon is diluted to insignificant concentrations. Radon that is present in soil, however, can enter a building through small spaces and openings and accumulate in enclosed areas, such as basements. The cancer risk caused by exposure, through the inhalation of radon, is a topic of concern.

There are no federal or state standards regulating radon exposure at the present time. The U.S. EPA offers a pamphlet, A Citizen's Guide to Radon (U.S. EPA, 1992a), which offers advice to persons concerned about radon in their homes. U.S. Air Force policy requires implementation of the Air Force Radon Assessment and Mitigation Program to determine levels of radon exposure of military personnel and their dependents. The U.S. EPA has made testing recommendations for both residential structures and schools.

For residential structures using a 2- to 7-day charcoal canister test, a level between 4 and 20 picocuries per liter (pCi/l) should lead to additional screening within a few years. For levels of 20 to 200 pCi/l, additional confirmation sampling should be accomplished within a few months. If the level is in excess of 200 pCi/l, the structure should be immediately evacuated. Schools are to use a 2-day charcoal canister test; if readings are 4 to 20 pCi/l, a 9-month school year survey is required. If levels are below 4 pCi/l, no further action is recommended. Table 3.3-6 summarizes the recommended radon surveys and action levels.

Table 3.3-6. Recommended Radon Surveys and Mitigations

Facility	U.S. EPA Action Level ^(a)	Recommendation
Residential	4 to 20 pCi/l	Additional screening. Expose detector for 1 year. Reduce radon levels within 3 years if confirmed high readings exist
Residential	20 to 200 pCi/l	Perform follow-up measurements. Expose detectors for no more than 6 months
Residential	Above 200 pCi/l	Follow-up measurements. Expose detectors for no more than one week; immediately reduce radon levels

2-Day Weekend Measurement

School	4 to 20 pCi/l	Confirmatory 9-month survey. Alpha track or ion chamber survey
School	Greater than 20 pCi/l	Diagnostic survey or mitigation

Notes: Congress has set a national goal for indoor radon concentrations equal to the outdoor ambient levels of 0.2 to 0.7 pCi/l.

(a) For levels below 4 pCi/l, no further action is recommended.

EPA = Environmental Protection Agency

pCi/l = picocuries per liter

Source: U.S. EPA, 1992a.

The Air Force policy requires a detailed radon assessment program for levels of 4 pCi/l or greater. Initial radon screening was conducted at Newark AFB in May 1988 by the Base Bioenvironmental Engineer. The screening consisted of 15 samples taken from Buildings 2 and 4, the two most populated facilities (with a basement) at the time of the survey. No samples resulted in radon levels above the recommended remediation level of 4.0 pCi/l; therefore, no additional radon surveys were scheduled and no

mitigation activities were found to be necessary. The child-care center was constructed in 1991 and was not part of the initial screening; however, based on the results of the 1988 initial radon screening, no additional testing is scheduled.

3.3.9 Medical/Biohazardous Waste

Current federal regulations do not provide for regulation of medical wastes, but do allow for states to individually regulate medical wastes. The state of Ohio regulates medical waste under the Ohio Infectious Waste Regulations, OAC 3745-27-30 to 37.

The small occupational health clinic at Newark AFB is operated by the 645th Medical Group, Wright-Patterson AFB, and provides treatment for on-the-job illness or injury and physical examinations, dispenses over-the-counter pharmaceuticals, and provides allergy shots and immunization services. No inpatient services are provided. The clinic generated approximately 3 pounds of medical waste per month between 1991 and 1993. The base fire station also occasionally generates small quantities of medical wastes from emergency response actions. These wastes are collected quarterly by a permitted medical waste hauler and disposed of off base.

3.3.10 Radioactive Materials

The Nuclear Regulatory Commission (NRC) regulations for protection standards from ionizing radiation (by activities conducted under NRC licenses) are promulgated under 10 CFR 20 et seq. These regulations also control the receipt, possession, use, transfer, and disposal of licensed radioactive materials. The state regulates radioactive materials under OAC 3745-16, -25, and -26.

The radiation protection program at Newark AFB is managed in accordance with 10 CFR 19, 20, 30, and 35 and the Air Force Radioisotope Committee regulations. Compliance of radioactive operations with all directives, policies, and regulations is the responsibility of the AGMC commander; however, these responsibilities are delegated to the Radiation Safety Officer (RSO). Specific RSO responsibilities include implementing and monitoring the radiation safety program; conducting radiation safety surveys; overseeing receipt, shipment, and/or transfer of radioactive materials and coordinating emergency responses. In addition, the RSO consults directly with the AGMC commander and activity supervisors regarding radioactive materials.

A variety of radioactive materials are used at Newark AFB during calibration of inertial guidance and navigational equipment. Use of these radioactive materials is conducted under radioactive material licenses from the Air Force Radioisotope Committee, which is licensed by the NRC. Four licenses issued by the committee are active. Items regulated under three of the licenses are generally licensed radioactive materials; the fourth license was issued for a

variety of sealed calibration sources. One license (No. 34-30113-1AFP) allows for the storage of static meters (Hydrogen-3), static and vacuum brushes (Polonium-210), and magnetic compasses (Promethium-147), and the use of in-line and gas-line ionizers and ion air guns (Polonium-210). A second license (No. 34-30285-1AFP) authorizes the use of self-luminescent emergency exit signs (Hydrogen-3) on base. Tritium tritide foils (Hydrogen-3) for use in sample analysis and gas chromatography are covered under a third license (No. 34-30149-1AFP). The fourth license (No. 34-09220-1AFP) authorizes the use of two high-energy radioactive sources, cesium-137 and a plutonium-beryllium neutron source, for calibrating guidance and navigational equipment. This license also allows the use of several smaller sources for secondary-source calibration. These radioactive sources are utilized at the RADIAC laboratory, which was specially constructed in 1988 to house the high-energy sources. Each source is contained in a protective container to minimize the chance of radiation leaks. The radioactive sources are also leak-tested every 6 months and returned to the manufacturer should a problem arise. No documented release of radioactive materials has occurred at Newark AFB and no evidence of radioactive contamination exists.

3.3.11 Lead-Based Paint

Human exposure to lead has been determined to be an adverse health risk by agencies such as OSHA and U.S. EPA. Sources of exposure to lead are through dust, soils, and paint. Waste containing levels of lead exceeding a maximum concentration of 5.0 milligrams per liter, as determined using the U.S. EPA Toxic Characteristic Leaching Procedure, which simulates the leaching behavior of landfill wastes, are defined as hazardous under 40 CFR 261. If a waste is classified as hazardous, disposal must take place in accordance with U.S. EPA and state hazardous wastes rules.

In 1973, the Consumer Product Safety Commission established a maximum lead content in paint of 0.5 percent by weight in a dry film of newly applied paint; in 1978, under the Consumer Product Safety Act (P.L. 101-608, as implemented by 16 CFR 1303), the Consumer Product Safety Commission lowered the allowable lead level in paint to 0.06 percent. The act also restricted the use of lead-based paints in nonindustrial facilities. In 1989, the U.S. EPA established a cleanup criterion for lead in soil of 500 to 1,000 ppm total lead when the possibility of child contact exists. Specific cleanup levels are based on the characteristics of individual sites. The Lead-Based Paint Poisoning Prevention Act, 42 U.S.C. 4821 et seq., as amended by the Residential Lead-Based Paint Hazard Reduction Act of 1992, requires that the lead-based paint hazards in federal housing facilities be identified and eliminated. In 1993, the federal OSHA, under 29 CFR 1926, extended the permissible exposure limit for general industrial workers of 50 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) of air to include workers in the construction field.

The Newark AFB Lead-Based Paint Management Plan (U.S. Air Force, 1994b) provides a strategy for identification and elimination of lead-based paint hazards, provides continual protection of facility occupants, and identifies measures to ensure compliance with all applicable regulatory requirements. The management plan was developed and implemented by the Environmental Management Flight.

Air Force policy requires a lead-based paint survey of high-priority facilities (occupied or frequented by children under age 7) at closure bases. To date, no lead-based paint surveys have been conducted at high-priority facilities on Newark AFB. Since the child-care center (including playground equipment) was constructed in 1991, well past the 1978 restriction on the use of lead-based paint on nonindustrial facilities, no lead-based paint is believed to be associated with that building.

Additional sampling for lead-based paint is conducted prior to conducting facility maintenance or renovations that require paint removal. These types of activities have identified lead-based paint at the medical clinic, in some areas of Building 4, and the water tower which has since been stripped of lead-based paint and repainted. Sampling results are provided in the Lead-Based Paint Management Plan

3.4 NATURAL ENVIRONMENT

This section describes the affected environment for natural resources: geology and soils, water resources, air quality, biological resources, and cultural resources.

3.4.1 Geology and Soils

Geology and soils include those aspects of the natural environment related to the earth that may be affected by the proposed base disposal and reuse. These features include physiography, geologic units and their structure, the presence/availability of mineral and related natural resources, the potential for natural hazards, and the soil conditions and capabilities. Water resources, which are related to geology and soils, are described in Section 3.4.2.

In general, the ROI for geology is the regional geologic settings (to provide context) and specific features on the base (to determine impacts); the ROI for soils is the base area.

3.4.1.1 Geology

Physiography. Two physiographic provinces, the Kanawha section of the Appalachian Plateau Province and the Till Plains section of the Central Lowlands Province, are found in the eastern and western portions of Licking County, respectively (Dove, 1960). The physiography of the area varies

from alternating valleys and ridges in the Appalachian Province to gently undulating plains in the Central Lowlands Province. Newark AFB is located in the transition area between these two provinces. The average elevation in the immediate vicinity of the base is about 900 feet above MSL. On-base topography is generally flat, except near Ramp Creek; its steep-sided banks are approximately 15 feet high. Total elevation change across the base is approximately 20 feet. Ramp Creek flows from west to east across the northern section of the base and is the dominant, local physiographic feature.

Geology. The geology of Newark AFB and the surrounding area is characterized by two main types of geologic units: unconsolidated sands and gravel from Pleistocene glacial deposits (approximately 2 million to 10 thousand years ago), and much older (Mississippian age and older, or greater than approximately 305 million years) sedimentary rock units under the glacial deposits.

The glacial deposits vary in thickness from 20 to 50 feet in the highland areas and up to 300 feet in the valley areas. The glacial deposits form a blanket of sediments over preglaciated topography; as a result, present topography and drainage patterns are similar to the preglaciated valley orientation. However, the current valleys are much broader and more shallow from the deposition of the glacial sediments. Newark AFB lies at the edge of a preglaciated river valley (known as the South Fork Licking River), which has been buried by 200 to 300 feet of glacial deposits.

The glacial deposits at and around Newark AFB are primarily composed of till debris (Forsyth, 1965). These deposits are generally poorly stratified silts, sands, and gravel. The base is underlain with up to 300 feet of these deposits that formed during Pleistocene glaciation. Pleistocene glaciation in Licking County is believed to have begun approximately 300,000 years ago and ended approximately 11,000 years ago (U.S. Department of Agriculture, 1992).

Holocene alluvium, which is younger than the glacial deposits, occurs locally along present drainage systems. Small areas of alluvium occur along Ramp Creek. These sediments are composed of glacial deposits that have been reworked by recent erosional action.

Underlying the glacial deposits are Mississippian-age and older bedrock. In Licking County, the uppermost Mississippian bedrock unit encountered is the Logan Formation. This unit is exposed in the highland areas around the city of Newark and may be partially covered by glacial deposits. The total thickness of this unit is approximately 270 feet. In the base vicinity, the uppermost Mississippian bedrock unit is the Black Hand sandstone and the Raccoon shale, members of the Cuyahoga Formation. These units, with a total thickness of approximately 570 feet, overlie older sedimentary units. The primary structural feature is a regional warping of the bedrock units in

which the bedrock has been gently folded into a broad anticline called the Cincinnati Arch. The Cincinnati Arch underlies most of central and western Ohio. At Newark AFB, this arch has caused the bedrock to dip gently to the southeast (Dove, 1960; U.S. Department of Agriculture, 1992).

Natural Resources. Mineral and related natural resources that occur in Licking County include sand and gravel deposits, shale, oil and gas, and minor amounts of other bedrock resources (Dove, 1960; U.S. Department of Agriculture, 1992). In addition, some fossil resources occur in the county.

One of the most abundant resources in Licking County is sand and gravel. The largest deposits are found along the major river valleys. Newark AFB is located in the South Fork Licking River Valley and, therefore, may be considered a potential source of sand and gravel. However, because the base represents only a very small percentage of the total resource and because other, more accessible areas of the county contain large quantities of sand and gravel, the base is not considered to be an important potential resource. Therefore, the quality of the sand and gravel on the base has not been evaluated.

Oil and gas have been important resources in Licking County. Since the first well was drilled on the western edge of the city of Newark in 1885, several thousand oil and gas wells have been drilled in Licking County. At least one of these wells was drilled within 3 miles of Newark AFB (Dove, 1960). The primary source for oil and gas in Licking County is Silurian-age sedimentary rocks. The regional geologic setting of the area suggests that Silurian oil- and gas-bearing strata may be present below the base; however, no exploration for oil and gas has been conducted on base.

Shale, sandstone, and flint, have been mined in Licking County as building materials in the past. No exposures of bedrock that could be sources of these materials are present at the base.

In the highland areas around Newark AFB, the Mississippian, Cuyahoga, and Logan formations contain large quantities of marine invertebrate fossils (Rocque and Marple, 1970). In some areas of Licking County, brachiopod shells may cover the entire surface of an exposed bed. In the shales, pelecypods are commonly found, along with rarer cephalopods and conularids. The formations in which these fossils occur are located at least several hundred feet below the surface at the base and, therefore, are not considered important resources.

Fossils in glacial sediments are generally rare. However, one glacial-related fossil has been found on the base. A well preserved white spruce log approximately 21,400 years old was found 49 feet below the surface during the excavation for the foundation of the Heavy Press Facility. This specimen was placed on display at Denison University (U.S. Air Force, 1992e).

Natural Hazards. Newark AFB is located in Seismic Hazard Zone 1 (International Conference of Building Officials, 1991), which indicates that the region has a low potential for sustaining major damage from a large earthquake. As a result, seismic safety is a minor design requirement of the Uniform Building Code for structures in the area.

Based on local geology, there is little potential for ground collapse from sinkholes, landslides, liquefaction, or related natural hazards (Dove, 1960; Forsyth, 1965; U.S. Department of Agriculture, 1992).

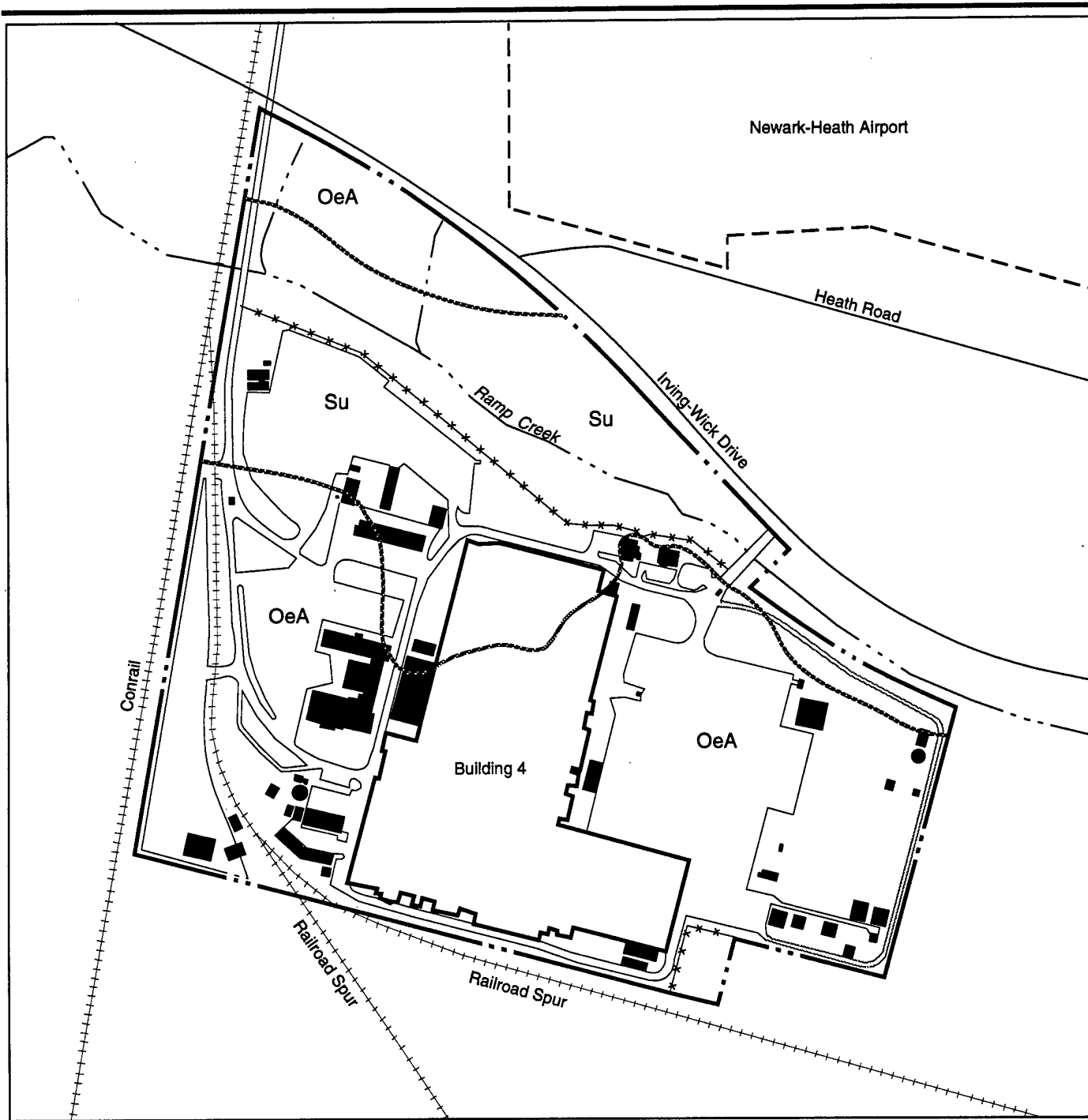
3.4.1.2 Soils. Soil development at the base is dominated by silty and sandy loams that cover the entire area. There are two soil series located on Newark AFB: the Ockley-Urban Land Complex and the Stonelick-Urban Land Complex (U.S. Department of Agriculture, 1992). The Ockley-Urban Land Complex covers most of the developed southern portions of the base and the extreme northern portion of the base. The Stonelick-Urban Land Complex covers the northern portion of the base adjacent to Ramp Creek. Properties of these soils are summarized in Table 3.4-1, and the areal extent of these soils is shown on Figure 3.4-1.

Table 3.4-1. Soil Series in Newark AFB Region of Influence

Property	Ockley-Urban Land Complex	Stonelick-Urban Land Complex
Texture	Silt loam	Loam
Slope	0-3 percent	0-2 percent
Drainage	Well drained	Well drained
Physiography	Deep, nearly level outwash terraces	Floodplains
Permeability	Moderate	Moderately rapid
Surface runoff	Slow	Slow
Erosion potential (water)	Moderate	Moderate
Erosion potential (wind)	Slight	Slight
Shrink-swell potential	Low	Low
Corrosivity	Moderate (steel) Moderate (concrete)	Low (steel) Low (concrete)

Source: U.S. Department of Agriculture, 1992.

The Ockley-Urban Land Complex soils on base are generally suited for the construction of buildings, good quality for woodlands development, well suited for sanitation facilities, and good sources for roadfill (but no other construction materials). The Stonelick-Urban Land Complex generally exhibits restrictive conditions for most urban uses because these soils are frequently flooded and found in areas of shallow groundwater. At Newark AFB, both of these conditions are present.



EXPLANATION

- Base Boundary
- Newark-Heath Airport Boundary
- *-*-* Fence

- ~ Soil Boundary
- OeA Ockley-Urban
- Su Stonelick-Urban

Soils Distribution



Source: U.S. Department of Agriculture, 1992.

Figure 3.4-1

Due to modification during base development, both soil complexes could be classified as disturbed. The base contains no areas of prime farmland soil. The Ockley-Urban Land Complex soils on base may be suitable as farmland, but in quantities too small to map or use. The Farmland Conversion Impact Rating Form AD-1006 is presented in Appendix I.

There are several locations on Newark AFB where soil contamination might have occurred. These areas are under investigation under the IRP to determine the potential for contamination. Descriptions and locations of these areas are found in Section 3.3, Hazardous Materials and Hazardous Waste Management.

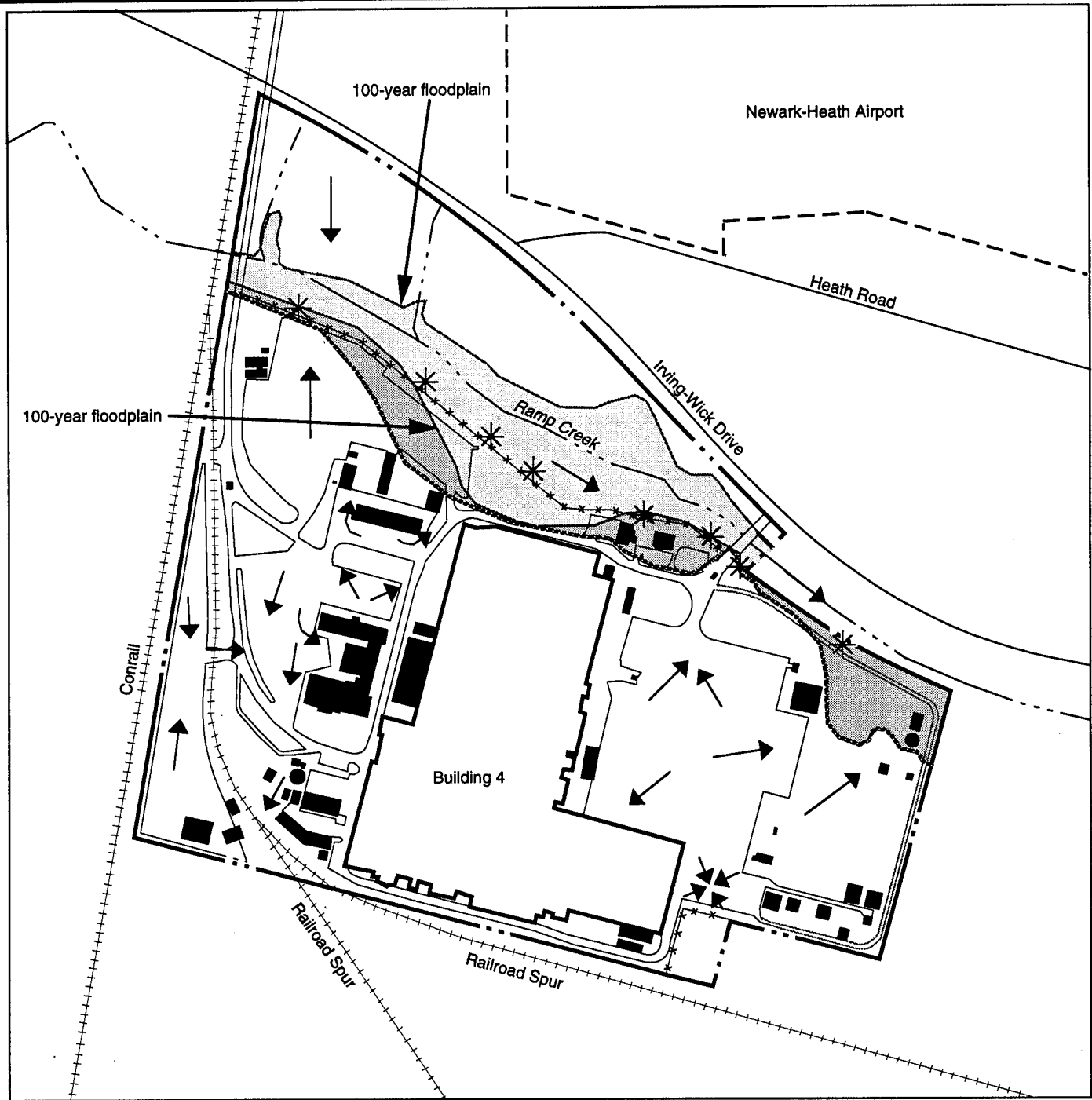
3.4.2 Water Resources

Water resources include those portions of the natural environment related to surface water and groundwater. These resources are assessed in terms of drainage/runoff, permanent surface water features, drinking water quality, water quality effects associated with effluent and nonpoint source (storm water runoff) NPDES requirements, floodplains, water supply capacity (surface or groundwater), and aquifer characteristics. Wetlands are considered as part of the biological resource analysis (Section 3.4.4.4, Sensitive Habitats), and existing water contamination associated with base or other nearby operations is considered as part of the hazardous materials/waste management analysis (Section 3.3).

The ROI for surface water is the drainage system/watershed in which the base is located; the ROI for groundwater is the local aquifer(s) directly or indirectly used by the base.

3.4.2.1 Surface Water. Figure 3.4-2 shows the primary surface hydrology characteristics at Newark AFB. Newark AFB lies within the South Fork Licking River drainage basin, which is part of the Ohio River drainage basin. The primary surface water feature of the base is Ramp Creek. Ramp Creek flows from west to east across the northern portion of the base and continues east until it converges with the South Fork Licking River, approximately 2 miles downstream of the base.

The most recent maps (1983), issued by the Federal Emergency Management Agency (FEMA), for the area show Ramp Creek as having a designated 100-year floodplain (see Figure 3.4-2). No facilities on the base lie within the designated 100-year floodplain. However, the extent of flooding along Ramp Creek from storms in July 1990 exceeded the previously plotted 100-year floodplain (Woolpert Consultants, 1991). Both the 100-year floodplain and the extent of the July 1990 flooding are included on Figure 3.4-2.



EXPLANATION

- Base Boundary
- Newark-Heath Airport Boundary
- *- Fence
- 100 yr. Floodplain (FEMA mapping)

- July 1990 Flood Extent in exceedance of 100 yr. Floodplain (mapped by base personnel)
- ← Surface Flow direction (Generalized)
- * Storm drain outlets

Surface Hydrology



Figure 3.4-2

3.4.2.2 Surface Drainage. All storm water runoff at the base either flows directly into Ramp Creek or is directed into Ramp Creek by a series of storm drain outfalls. Surface drainage at Newark AFB consists mostly of runoff from paved parking areas into storm drain inlets located throughout the parking areas and along building perimeters. The storm drain system generally drains northward towards Ramp Creek. Drainage from the north side of Ramp Creek flows south across the grassy undeveloped portion of the base (see Figure 3.4-2).

The water discharge programs at Newark AFB are managed in accordance with current state and federal regulations. An NPDES permit application has been submitted for an existing 48-inch storm drain outlet into Ramp Creek because sumps within Building 4 are plumbed to the drain line. The groundwater removed by these sumps may contain small amounts of CFC-113. An NPDES permit application will be submitted for two additional outfalls that also discharge groundwater contaminated with CFC-113, either by amending the existing permit application or by applying for individual permits for these outfalls. In order to conform with Title VI, Sections 608 and 610 of the CAA as amended in 1990, the use of CFC-113 at Newark AFB is scheduled to be phased out by the end of 1995.

Newark AFB has also applied for storm drain NPDES permits as part of the Air Force group permit for the five remaining outfalls. In preparation for complying with requirements of the storm water permits, Newark AFB has contracted for a storm water study to map the storm water system and prepare the pollution prevention plan.

3.4.2.3 Groundwater. The groundwater hydrology of the area is generally divided into two aquifer systems: the unconsolidated glacial deposit aquifers and the bedrock unit aquifers (Cuyahoga and Logan formations). Water supplies for the local area and Newark AFB are obtained from the glacial deposit aquifers.

In the general area of the base, there are three aquifers within the glacial deposits. The first aquifer is near the surface (approximately 8 to 18 feet deep) and ranges in thickness from 10 to 55 feet deep. The thickest parts of the aquifer are located near the center of the Licking River drainage valleys. Recharge of this aquifer is by surface drainage and direct precipitation. The groundwater gradient for this uppermost aquifer is towards the northeast and generally follows the surface drainage pattern. Due to the shallow groundwater depth at the base, any foundation deeper than 8 to 18 feet may require sump pumps, such as in Building 4.

The second aquifer in the glacial deposits is generally encountered around 90 to 150 feet below ground surface. The deposits of this aquifer are up to 40 feet thick and are overlain by about 70 to 90 feet of relatively impermeable till. The base water supply is obtained from this aquifer. Recharge of this aquifer is by leakage through the overlying confining layers.

Yields of as much as 500 gallons per minute (gpm) have been reported from this aquifer (Dove, 1960).

The third aquifer within the glacial deposits is encountered at approximately 200 feet. This aquifer is composed of approximately 30 feet of outwash deposits. In places where the outwash is relatively coarse, yields of as much as 500 gpm are available. Recharge of this aquifer is also by leakage through the overlying confining layers. Water occurs in this aquifer under artesian pressure.

Limited information is available on groundwater from the bedrock formations in Licking County. In general, water quantity from the Logan Formation is limited and water availability from the Cuyahoga Formation is considered the most productive of the consolidated-rock aquifers in Licking County (Dove, 1960).

3.4.2.4 Water Quality. Water quality data from the base and other data from published sources (Dove, 1960; Wright Associates, 1993b) indicate that the water from the glacial deposit aquifers varies depending on location and depth. However, the shallow aquifer within the glacial deposits throughout Licking County has various amounts of contamination due to industrial activities. In areas of the county where this aquifer has not been affected, the water is generally considered moderately hard to hard, very clear, with various amounts of dissolved iron and magnesium (Dove, 1960).

The uppermost glacial deposit aquifer in the base vicinity is highly contaminated with various petroleum products, oil, and CFC-113 (Dames & Moore, Inc., 1991; Wright Associates, 1993b). The contamination can be traced to industrial sources north of the base, as well as to Newark AFB. For a more detailed description of these contaminants, refer to Section 3.3, Hazardous Materials and Hazardous Waste Management.

The intermediate and deep aquifers within the glacial deposits, generally have good quality water. Water obtained from these aquifers is generally clear, moderately hard to hard, with various amounts of dissolved iron and magnesium. Water quality from the bedrock aquifer varies, but is generally good. Brine water has been encountered in the bedrock aquifer below the 300-foot level.

Drinking water samples from the base water supply system are tested in accordance with state and federal drinking water regulations and have shown no levels of contaminants exceeding state or U.S. EPA drinking water standards; however, trace amounts of CFC-113 were detected in one of the on-base production wells (PW 1). Drinking water for the base is obtained from the two remaining production wells (PW 2 and PW 3). Results from Newark AFB sampling and Ohio Department of Health analysis have identified elevated levels of copper in the base drinking water related to corrosion of the water supply delivery system. The base is in the process of

implementing a corrosion prevention plan to reduce levels of copper and lead in the drinking water.

The sanitary and industrial wastewater is discharged to the city of Heath wastewater treatment plant. This discharge is managed in accordance with a pretreatment permit issued by the city. No septic tank systems have been reported on base that would affect the water quality.

3.4.3 Air Quality

Air quality in a given location is described by the concentration of various pollutants in the atmosphere, generally expressed in units of ppm or $\mu\text{g}/\text{m}^3$. Air quality is determined by the type and amount of pollutants emitted into the atmosphere, the size and topography of the air basin, and the prevailing meteorological conditions. The significance of a pollutant concentration is determined by comparing it to federal and state ambient air quality standards. These standards represent the maximum allowable atmospheric concentrations that may occur and still protect public health and welfare, with a reasonable margin of safety. The federal standards are established by the U.S. EPA and termed the National Ambient Air Quality Standards (NAAQS). Ohio has adopted the NAAQS as their representative air quality standards. The NAAQS are presented in Table 3.4-2.

The main pollutants of concern in this EA are ozone (O_3), carbon monoxide (CO), nitrogen oxides (NO_x), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), and particulate matter equal to or less than 10 microns in diameter (PM_{10}). NO_x include all oxide species of nitrogen. NO_x are of concern because of their potential contribution to ozone formation. Only that portion of total NO_x , which is measurable as NO_2 , is subject to the NAAQS. The previous NAAQS for particulate matter were based upon total suspended particulate (TSP) levels; they were replaced in 1987 by ambient standards based only on the PM_{10} fraction of TSP.

Ozone is a secondary pollutant formed in the atmosphere by photochemical reactions of previously emitted pollutants, or precursors. Ozone precursors are mainly VOCs in the form of hydrocarbons and NO_x . By U.S. EPA definition, VOCs are compounds containing carbon excluding CO, carbon dioxide (CO_2), carbonic acid, metallic carbides, metallic carbonates, and ammonium carbonate. VOCs do not include methane or other nonreactive methane and ethane derivatives. NO_x is the designation given to the group of all oxygenated nitrogen species including nitrous oxide (N_2O), nitric oxide (NO), NO_2 , nitrogen trioxide (N_2O_3), nitrogen tetroxide (N_2O_4).

Like ozone, NO_2 emissions are also regionally distributed. NO_2 is formed primarily by the conversion of NO to NO_2 in the presence of oxygen (either during combustion or in the atmosphere). NO is produced by fuel combustion in both stationary and mobile sources, such as automobiles and

Table 3.4-2. National and Ohio Ambient Air Quality Standards

Pollutant	Averaging Time	National/Ohio Standards ^(a)	
		Primary ^(b,c)	Secondary ^(b,d)
Ozone	1-Hour	0.12 ppm (235 $\mu\text{g}/\text{m}^3$)	Same as Primary Standard
Nitrogen dioxide	Annual	0.053 ppm (100 $\mu\text{g}/\text{m}^3$)	Same as Primary Standard
Carbon monoxide	8-Hour	9 ppm (10 mg/m^3)	---
	1-Hour	35 ppm (40 mg/m^3)	---
Sulfur dioxide	Annual	80 $\mu\text{g}/\text{m}^3$ (0.03 ppm)	---
	24-Hour	365 $\mu\text{g}/\text{m}^3$ (0.14 ppm)	---
	3-Hour	---	1,300 $\mu\text{g}/\text{m}^3$ (0.5 ppm)
PM ₁₀	Annual	50 $\mu\text{g}/\text{m}^3$ ^(e)	Same as Primary Standard
	24-Hour	150 $\mu\text{g}/\text{m}^3$	Same as Primary Standard
Lead	Quarterly	1.5 $\mu\text{g}/\text{m}^3$	Same as Primary Standard

- Notes: (a) Standards, other than those for ozone and those based on annual averages or arithmetic means, are not to be exceeded more than once per year. The ozone standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above the standard are equal to or less than one.
- (b) Concentrations are expressed first in the units in which they were promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25° Celsius and a reference pressure of 760 millimeters of mercury (1,013.2 millibar); ppm in this table refers to parts per million by volume, or micromoles of pollutant per mole of gas.
- (c) Primary Standards: The levels of air quality necessary, with an adequate margin of safety, to protect public health.
- (d) Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
- (e) Calculated as arithmetic mean.
- $\mu\text{g}/\text{m}^3$ = micrograms per cubic meter
 mg/m^3 = milligrams per cubic meter
 PM₁₀ = particulate matter equal to or less than 10 microns in diameter
 ppm = parts per million

Source: Clean Air Act, Title 42, U.S. Code Sections 7401-7671.

aircraft. The amount of NO produced is dependent upon the combustion temperature and the rate of exhaust gas cooling. Higher temperatures and rapid cooling rates produce greater quantities of NO. Where higher NO concentrations and temperatures exist, some of the NO is immediately oxidized to NO₂. The amount of immediate NO₂ combustion generation generally varies from 0.5 to 10 percent of the NO present (U.S. EPA, 1971).

The remaining unconverted NO is oxidized to NO₂ in the atmosphere primarily through photochemical secondary reactions initiated by the presence of sunlight. These photochemical reactions may take place hours after the initial NO release and many miles from the original source, dependent upon the prevailing meteorological conditions.

Airborne emissions of lead are not addressed in this EA because there are no known lead emission sources included in the reuse alternatives. Lead concentrations are monitored in a number of high population density areas throughout the United States, and all sites meet the quarterly primary and secondary standard of $1.5 \mu\text{g}/\text{m}^3$.

The existing air quality of the affected environment is defined by air quality data and emissions information. Air quality data are obtained by examining air quality monitoring records collected by the Ohio EPA Division of Air Quality Control from monitoring stations in the surrounding area. Information on pollutant concentrations measured for short-term (24 hours or less) and long-term (annual) averaging periods is extracted from the monitoring station data in order to characterize the existing air quality background of the area. Emission inventory information for the affected environment was obtained from the Ohio EPA and from Newark AFB.

Inventory data are separated by pollutant and reported in tons per year in order to describe the baseline conditions of pollutant emissions in the area.

The ROI for the air quality analysis includes both the areal extent of potential ambient air quality impacts and the air quality control districts that would be affected by the new emission sources.

Identifying the ambient air quality ROI for an air quality assessment requires knowledge of the pollutant types, source emission rates and release parameters, the proximity relationships of project emission sources to other emission sources, and local and regional meteorological conditions. For inert pollutants (all pollutants other than ozone, its precursors, and NO_2), the ROI is generally limited to an area extending a few miles downwind from the source.

The ambient air quality ROI for ozone and NO_2 may extend much farther downwind than the ROI for inert pollutants. In the presence of solar radiation, the maximum effect of precursor emissions on ozone levels usually occurs several hours after they are emitted and, therefore, many miles from the source. Ozone and its precursors transported from other regions can also combine with local emissions to produce high local ozone concentrations. Ozone concentrations are generally the highest during the summer months and coincide with periods of maximum solar radiation. Maximum ozone concentrations tend to be regionally distributed because precursor emissions are homogeneously dispersed in the atmosphere.

The ROI for emissions of ozone precursors and NO_2 from the reuse-related operational activities would be the existing airshed surrounding Newark AFB, (i.e., the Metropolitan Columbus Intrastate Air Quality Control Region). This control region includes Delaware, Fairfield, Franklin, Licking, Madison, Perry, Pickaway, and Union counties. However, due to the large size of the region and the relative sparsity of emissions data from this area, the air quality

analysis focuses on the effects of ozone precursors and NO₂ in Licking County. The county's relationship to Newark AFB and the Metropolitan Columbus Intrastate Air Quality Control Region is shown in Figure 3.4-3. Reuse-related emissions of VOC, NO_x, and NO₂ are compared to emissions generated within Licking County. The ROI for emissions of the inert pollutants (CO, SO₂, and PM₁₀) is limited to the more immediate area of Newark AFB.

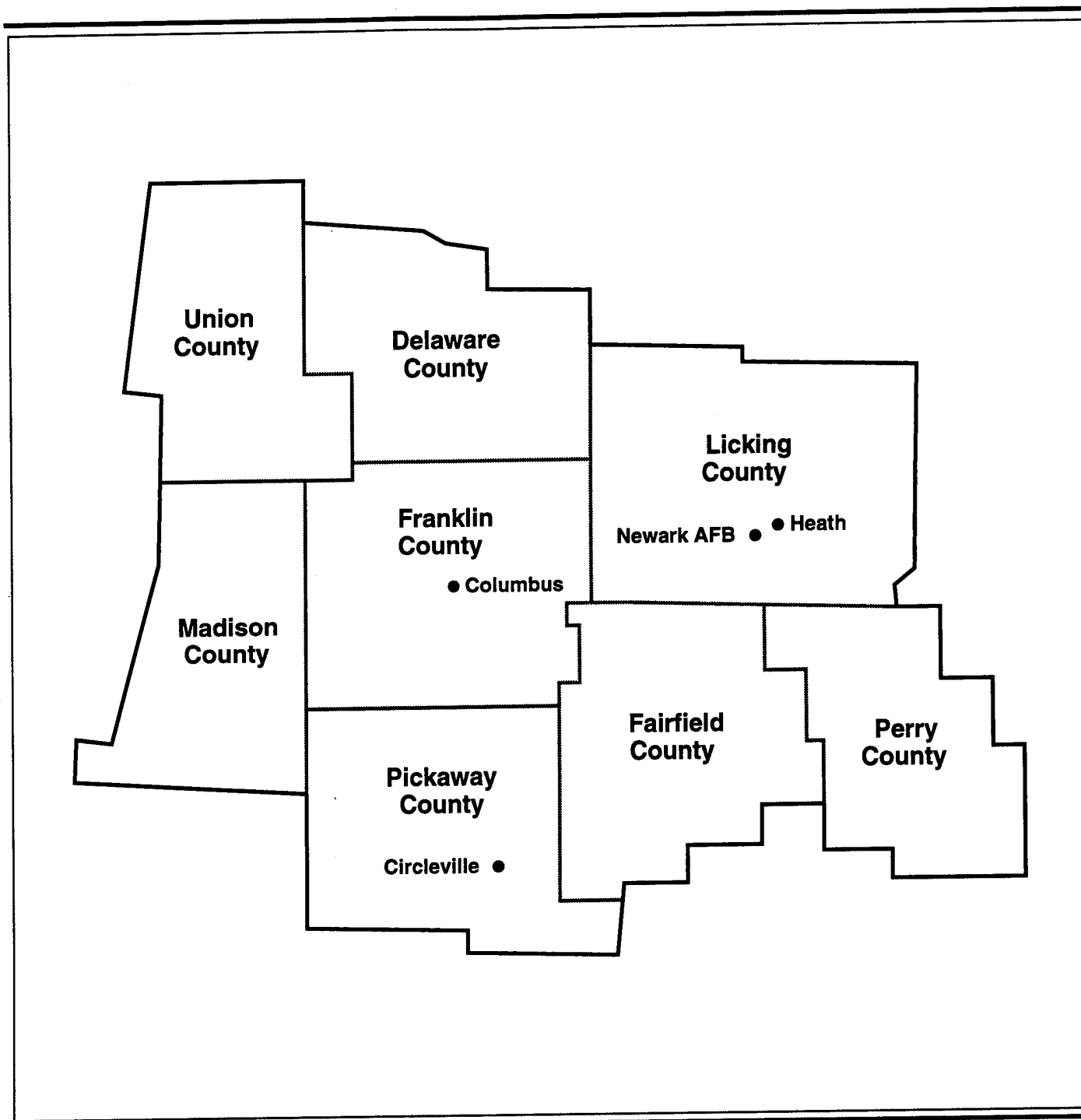
The federal CAA, most recently amended in November 1990, dictates that project emission sources must comply with the air quality standards and regulations that have been established by federal, state, and county regulatory agencies. These standards and regulations focus on (1) the maximum allowable ambient pollutant concentrations resulting from project emissions, both separately and combined with other surrounding sources, and (2) the maximum allowable emissions from the project.

Prior to the 1990 CAA Amendments, federal regulation of hazardous air emissions was very limited. Section 112, as amended in 1990, requires U.S. EPA to regulate a greatly expanded list of hazardous air pollutants (HAPs). Additionally, U.S. EPA must publish a list of all categories and subcategories of emission sources of HAPs. After identifying and listing sources of HAPs, U.S. EPA must promulgate emission standards that are equivalent to maximum achievable control technology. By 2000, it is expected that final U.S. EPA regulations will control HAP emissions and require adoption of costly control measures for most medium- and large-sized sources of HAPs.

3.4.3.1 Regional Air Quality. Because Newark AFB is located on rolling plains, the lack of significant elevations allows air masses to sweep into the region unimpeded. Moist air masses flowing from the Gulf of Mexico or cold polar continental air masses from central or northwest Canada may at any given time be the dominating influence affecting weather in the area.

The traditional four seasons are found at Newark AFB. The last frost occurs from late April to the beginning of May and returns in mid- to late October. Summers at Newark AFB are warm and humid. July is the warmest month, with a mean monthly temperature of 73°F. In autumn, temperatures are pleasantly warm during the day and cool at night. Winters are characterized by mostly cloudy skies. January is the coldest month, with a mean monthly temperature of 29°F. Snowfall normally occurs from November to March and averages about 24 inches per year. Precipitation averages 39 inches per year with the summer months receiving slightly more rainfall than the rest of the year. Windspeed averages 7.7 knots and occurs primarily from north-northeast.

According to U.S. EPA guidelines, an area with air quality better than the NAAQS is designated as being in attainment; areas with worse air quality are classified as nonattainment areas. An area is considered to be in attainment



EXPLANATION

County Boundaries

Monitoring Station

**Metropolitan
Columbus Intrastate
Air Quality Control
Region**



Source: 40 Code of Federal Regulations Part 81.

Figure 3.4-3

of NAAQS (except for ozone and those based upon annual average or annual arithmetic means) if the standards for the pollutant are not exceeded more than once per year. An area is considered to be in attainment for ozone if maximum hourly concentration exceeds the standard on no more than 1 day per calendar year. Pollutants in an area may be designated as unclassified when there is a lack of data for the U.S. EPA to form a basis of attainment status. Licking County is designated by the U.S. EPA as being in "marginal" nonattainment of the NAAQS for ozone and in attainment for the remaining NAAQS (Engler, 1993). However, on January 7, 1994, the Ohio EPA formally requested that the U.S. EPA redesignate the Columbus Metropolitan Nonattainment Area (including Franklin, Licking, and Delaware counties) as in attainment of the NAAQS for ozone. The redesignation request is based on a report indicating that the conditions for attainment of the NAAQS for ozone have been met since 1988 (Mid-Ohio Regional Planning Commission, 1993). Also, existing and planned control measures for VOC are shown in the Mid-Ohio Regional Planning Commission report to be sufficient to maintain the standard in future years. Nonetheless, as a contingency, an automobile inspection and maintenance program is proposed for implementation should a violation be monitored.

New or modified major stationary sources in the area of Newark AFB would be subject to Prevention of Significant Deterioration (PSD) review to ensure that these sources are constructed without significant adverse deterioration of the clean air in the area. Emissions from any new or modified source must be controlled using best available control technology. The air quality impacts in combination with other PSD sources in the area must not exceed the maximum allowable incremental increases identified in Table 3.4-3. Certain national parks and wilderness areas are designated as Class I areas, where any appreciable deterioration in air quality is considered significant. Class II areas are those where moderate, well controlled, industrial growth could be permitted. Class III areas allow for greater industrial development. The area surrounding Newark AFB is designated by the U.S. EPA as Class II. There are no Class I areas within 100 miles of Newark AFB.

In addition to the requirements for PSD review, Title V of the CAA now requires a permit for any of the following sources:

- A source with the potential to emit 10 tons or more of a single HAP in a 1-year period
- A source with the potential to emit 25 tons or more of HAPs in a 1-year period
- A source with the potential to emit 100 tons or more of any criteria pollutant in a 1-year period.

**Table 3.4-3. Maximum Allowable Pollutant Concentration
Increases under PSD Regulations**

Pollutant	Averaging Time	Maximum Allowable Increment ($\mu\text{g}/\text{m}^3$)		
		Class I	Class II	Class III
Nitrogen dioxide	Annual	2.5	25	50
Sulfur dioxide	Annual	2	20	40
	24-hour	5	91	182
	3-hour	25	512	700
PM ₁₀	Annual	4	17	34
	24-hour	8	30	60

Note: Class I areas are regions in which the air quality is intended to be kept pristine, such as national parks and wilderness areas. All other lands are initially designated Class II. Individual states have the authority to redesignate Class II lands as Class III to allow maximum industrial use.
 $\mu\text{g}/\text{m}^3$ = micrograms per cubic meter
 PM₁₀ = particulate matter equal to or less than 10 microns in diameter
 PSD = Prevention of Significant Deterioration

Source: 40 CFR Parts 51 and 52, as revised June 3, 1993.

The permitting authority must notify an adjoining state if one of the above sources is within 50 miles of that state or could affect the air quality of that state. The affected states then have the opportunity to make recommendations concerning the terms and conditions of the permit that would be issued to the source.

There are no monitoring stations on Newark AFB, but there are numerous monitoring stations in the surrounding area. The nearest ozone monitoring station is in the city of Heath, 3 miles southwest of the base, while the nearest ozone monitoring station (with 3 years of data) is in Columbus, approximately 35 miles to the west. The closest CO and PM₁₀ monitoring stations are also in Columbus. The closest NO₂ monitoring station is 42 miles to the southwest in Pickaway County, in the city of Circleville. There are numerous SO₂ monitoring stations around Columbus. The highest values were used in this analysis. The maximum concentrations of the pollutants measured at these stations are presented in Table 3.4-4. With the exception of 1-hour ozone concentrations measured at the Maple Canyon Station in 1990 and 1991 and an 8-hour CO concentration measured at the Morse Road station in 1992, none of the maximum concentrations exceeded the NAAQS. Ozone and CO concentrations were not exceeded on more than 1 day in a given year at either station. The air quality data shown in Table 3.4-3 are assumed to be representative of air quality at Newark AFB.

3.4.3.2 Air Pollutant Emission Sources. The Newark AFB and Licking County emissions inventories representative of a point in time at full mission operation are presented in Table 3.4-5. The base inventory information is for 1992. The most recent emission inventories in Licking County were

Table 3.4-4. Existing Air Quality in Area around Newark AFB

Table 3.4-4. Existing Air Quality in Area around Newark Air B				
Pollutant/Station	Averaging Time	Maximum Concentration by Year ^(a)		
		1990	1991	1992
µg/m ³ (ppm)				
Ozone				
Heath	1-Hour	ND	231 (0.118)	198 (0.102)
Maple Canyon		251 (0.128)	257 (0.131)	182 (0.093)
Nitrogen Dioxide				
Circleville	Annual	21 (0.011)	23 (0.012)	23 (0.012)
Carbon monoxide				
Morse Road	8-Hour	5,920 (5.1)	7,660 (6.6)	10,560 (9.1)
	1-Hour	12,760 (11.0)	17,400 (15.0)	18,440 (15.9)
PM₁₀^(b)				
State Fairgrounds	Annual	31	30	25
	(Arithmetic)			
	24-Hour	95	89	81
Sulfur dioxide				
	Annual	18.6 (0.007)	21.2 (0.008)	18.6 (0.007)
	24-Hour	159 (0.060)	106 (0.040)	90 (0.034)
	3-Hour	246 (0.093)	223 (0.084)	178 (0.067)

Notes: (a) The Heath monitoring station is located on Licking View Street in Heath. The Maple Canyon monitoring station is located in Columbus on Maple Canyon Road. The Morse Road monitoring station is located at the Fire Station on Morse Street in Columbus. The Circleville monitoring station is located in Pickaway County, in Circleville. The State Fairgrounds monitoring station is located at the Fairgrounds in Columbus. There are numerous sulfur dioxide monitoring stations around Columbus. The highest values from the various sulfur dioxide monitoring stations are presented in this table.

(b) Maximum concentrations for PM₁₀ are presented in units of µg/m³ only.

µg/m³ = micrograms per cubic meter

ND = no data

PM₁₀ = particulate matter equal to or less than 10 microns in diameter

ppm = parts per million

completed in 1990. The base emissions presented in Table 3.4-5 are based on inventory calculations for direct and indirect military and civilian sources associated with the base. The major emission sources at Newark AFB are: (1) solvent degreasers, (2) heating and power production, (3) fuel evaporation, (4) surface coating, and (5) motor vehicles (both direct and indirect sources). Direct mobile source emissions are from military and civilian vehicles operating on base and military vehicles operating off base.

Indirect mobile source emissions are from employee vehicles commuting to and from the base. A list of permitted sources at Newark AFB is presented in Appendix E.

The only area and mobile source emissions reported for Licking County are for NO_x, CO, and VOC. Area and mobile source emissions data are not available for SO₂ or PM₁₀. The point source emissions are from permitted

Table 3.4-5. Preclosure Emissions Inventory (tons per year)

Source	NO _x	CO	SO ₂	PM ₁₀	VOC
Newark AFB ^(a,b)					
Heating and power production	6.61	1.61	0.04	0.66	0.14
Motor vehicles (direct)	0.85	9.56	--	--	1.00
Motor vehicles (indirect)	31.85	217.61	--	--	22.91
Surface coating	--	--	--	--	1.60
Fuel evaporation losses	--	--	--	--	0.04
Solvent degreasing ^(c)	--	--	--	--	9.95
Total	39.31	228.78	0.04	0.66	35.64
Licking County ^(d)					
Area sources	3,470	8,907	ND	ND	3,003
Mobile sources	5,692	34,058	ND	ND	3,763
Point sources	374	383	543	476	1,128
Total	9,536	43,348	543	476	7,894

- Notes: (a) Inventory data are representative of 1992.
 (b) All Newark AFB emissions, with the exception of employee-commuting motor vehicle emissions, are from direct sources. Commuting emissions are considered as indirect source emissions.
 (c) Solvent degreasing emissions do not include the following exempt solvents: 91.83 tons per year of CFC-113, 12.85 tons per year of 1,1,1 trichloroethane, and 7.18 tons per year of FC-77.
 (d) Inventory data are representative of 1990.
 CFC-113 = 1,1,2-trichloro-1,2,2-trifluoroethane
 CO = carbon monoxide
 ND = no data
 NO_x = nitrogen oxide
 PM₁₀ = particulate matter equal to or less than 10 microns in diameter
 SO₂ = sulfur dioxide
 VOC = volatile organic compound

Sources: Ohio EPA, 1993, 1994.

stationary sources within the county. Emissions from Newark AFB are included as part of the total county emissions.

3.4.4 Biological Resources

Biological resources include the native and introduced plants and animals in the project area. For discussion purposes, these are divided into vegetation, wildlife (including aquatic biota), threatened or endangered species, and sensitive habitats.

Human activities in the immediate vicinity of Newark AFB have altered the natural environment primarily through farming and urbanization. The native environment is now only present in the non-maintained area along Ramp Creek.

Facility development on the base includes office and industrial facilities, and associated landscaping, roads, sidewalks, and recreation areas.

The ROI for discussion of biological resources and potential impacts on these resources is the base property and connecting portions of Ramp Creek. This includes the area within which potential impacts could occur and provides a basis for evaluating the level of impact.

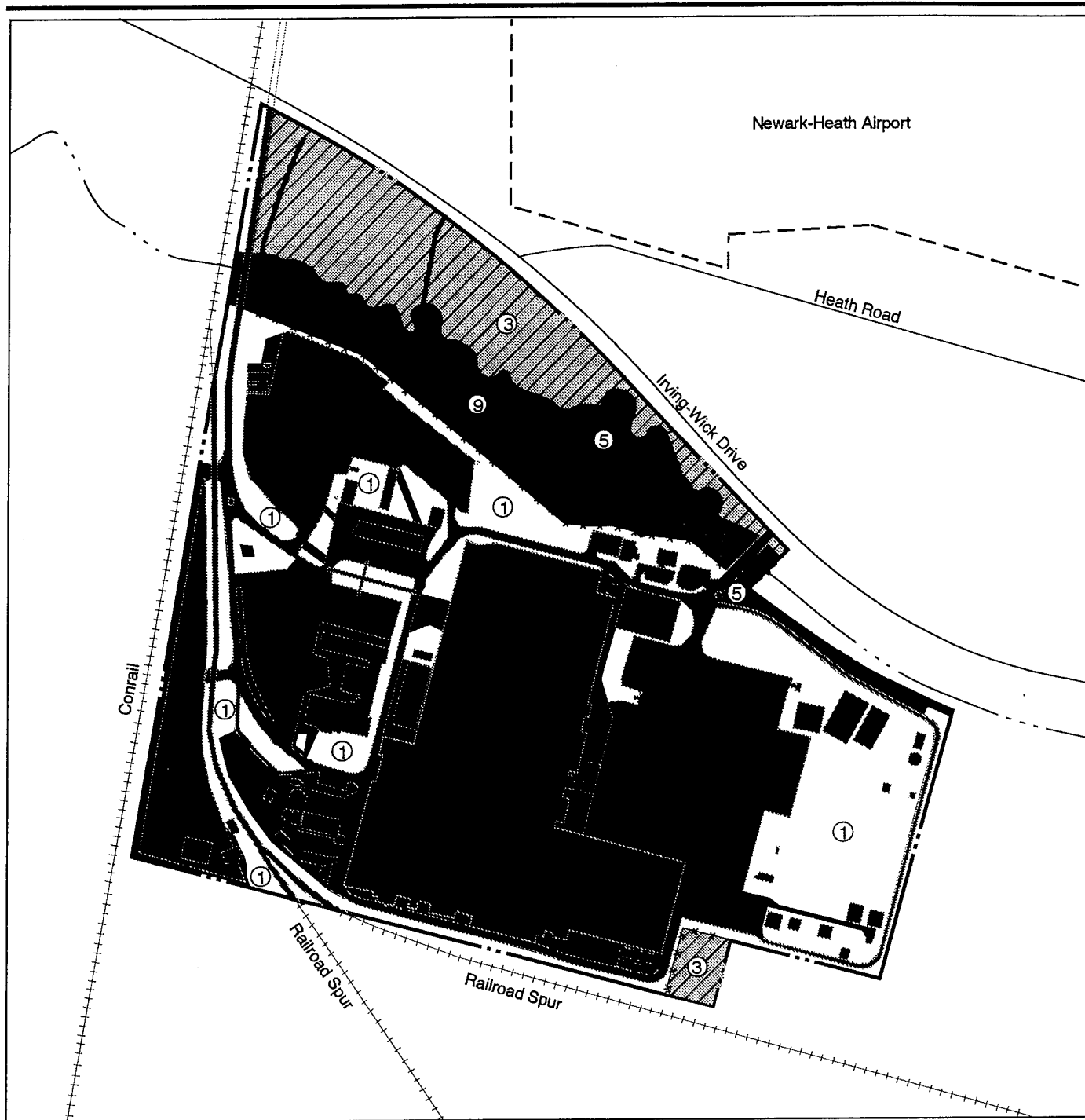
The following descriptions are based on information from the U.S. Fish and Wildlife Service (USFWS), the Ohio Department of Natural Resources (ODNR), including results from a 1994 Newark AFB survey, the base IRP program, a visit to the base in December 1993, 1989 aerial photographs, and a literature search. A list of species observed during the series of 1994 surveys by the ODNR at Newark AFB is included in Appendix G.

3.4.4.1 Vegetation. This section discusses the vegetative resources of Newark AFB, including native and introduced plant species. A discussion of wetland vegetation is provided in Section 3.4.4.4, Sensitive Habitats.

Newark AFB is located in what was historically an elm-ash swamp forest association typified by white elm, black ash, white ash, silver maple, and red maple. Better drained or transitional areas included bur oak, shellbark hickory, red oak, and basswood, with swamp white oak, pin oak, white oak, black walnut, and tulip tree (Woolpert Consultants, Inc., 1989). Historic development included agriculture followed by urbanization.

Vegetation at Newark AFB is indicative of urban landscaping consisting of ornamental trees, shrubs, and planted grasses (Figure 3.4-4). The alteration of the natural environment has resulted in low species diversity and low quality vegetation. Landscaped areas occur in the developed portion of the base and consist of planted domesticated grasses, including Kentucky bluegrass and fescues, and scattered ornamental trees. Landscape species require high levels of maintenance such as mowing, fertilization, and state-certified applications of herbicides and pesticides. Disturbed grassland is present in the northern portion of the base north of Ramp Creek and in a rectangular section southeast of Building 4. These areas consist of grasses and herbaceous growth that are periodically mowed.

A 1994 ODNR survey of Newark AFB identified the riparian vegetation along Ramp Creek as a Maple-Cottonwood floodplain forest. Characteristic species of this plant community, which were observed during the ODNR survey, included cottonwood, black willow, American elm, sycamore, box elder,



EXPLANATION

- | | |
|----------------|----------------|
| ① Landscaped | ⑥ Swamp/Marsh* |
| ② Agriculture* | ⑦ Tundra* |
| ③ Grassland | ⑧ Barren* |
| ④ Shrubland* | ⑨ Water |
| ⑤ Forest | Developed |

Disturbed

Base Boundary

Fence

Railroad

Newark-Heath Airport Boundary

0 100 200 400 Feet



*Standard vegetation type not applicable to this figure.

Vegetation Distribution

Figure 3.44

silver maple, Ohio buckeye, and green ash. Grey dogwood and elderberry were understory shrubs identified in this community. According to the ODNR survey, the highest diversity of native species occurred on the gravel bars and small, open meadows along Ramp Creek. Native shrubs including sandbar willow and diamond willow, and native grass-like species such as false nutsedge, barnyard grass, red-footed spike-rush, stream-bank wild rye, fowl manna grass, and Torrey's rush are found in these areas. The gravel bars and meadows also contained herbs such as New England aster, zigzag aster, bur-marigold, boneset, cleavers, ox-eye sunflower, great blue lobelia, and common mint.

Farther away from the creek on higher ground, the floodplain forest gives way to disturbed mesic forest, including wild black cherry, mulberry, and black locust. This mesic forest area lacks many representative species of the Maple-Cottonwood floodplain forest. Although native wildflower species, such as bloodroot, white snakeroot, forest phlox, and enchanter's nightshade were observed in the 1994 ODNR survey, these species were relatively rare. The understory of the mesic forest areas was dominated by weeds. The forest edge contained some native plant species, such as American pokeweed, field thistle, virgin's bower, and Canada goldenrod; however, most of the plants in this environment were weeds, such as ox-eye daisy, Queen Anne's lace, fox-tail grass, and common mullein. The Ramp Creek floodplain/mesic forest is not maintained.

Base acreage is divided into landscaped areas 25 percent; maintained grassland 12 percent; the floodplain/mesic forest along Ramp Creek 12 percent; and developed areas (pavement and buildings) 51 percent. Figure 3.4-4 depicts the distribution of vegetation on Newark AFB.

3.4.4.2 Wildlife. Wildlife at Newark AFB, is associated with urban and riparian areas. This includes mammals, birds, fishes, reptiles, and amphibians. Protected wildlife species are discussed in Section 3.4.4.3, Threatened and Endangered Species.

Five mammal species along Ramp Creek were identified during the 1994 ODNR survey of Newark AFB, including the Eastern cottontail, groundhog, muskrat, raccoon, and white-tailed deer. It is likely that other mammal species, such as deer mouse, short-tailed shrew, and meadow vole are present in the riparian corridor and adjacent areas. Riparian corridors, such as Ramp Creek, serve as pathways for the movements of mammalian species.

Birds occur in greater number and diversity than other wildlife at Newark AFB. A survey of breeding birds on Newark AFB conducted by the ODNR in 1994 identified 33 species nesting or potentially nesting on Newark AFB property, including 11 neotropical migrants. All of the bird species found during the ODNR survey are commonly associated with urban and riparian

corridor areas. Ramp Creek provides suitable habitat for half of the bird species identified.

The most common birds found during the ODNr survey include urban-associated species, such as the American robin, European starling, house sparrow, and common grackle. Other common nesting species at Newark AFB were mourning dove, house finch, and chipping sparrow. Bird species associated with the Ramp Creek riparian corridor include belted kingfisher, rough-winged swallow, Carolina wren, house wren, warbling vireo, and red-winged blackbird.

The Ramp Creek riparian corridor provides the only natural environment suitable for reptiles and amphibians on Newark AFB. There was one reptile and three amphibian species observed during the 1994 ODNr survey, including the northern water snake, two-lined salamander, American toad, and green frog. Other species may also be found at Newark AFB, but regular maintenance activities preclude the likelihood of established populations. It is more likely that reptiles and amphibians would enter the property from adjacent environments.

3.4.4.3 Threatened and Endangered Species. A letter was sent to USFWS requesting information on sensitive species at Newark AFB as part of an informal consultation under Section 7 of the Endangered Species Act. In response, the USFWS has indicated two species of concern that may occur in the general area of Newark AFB, the Indiana bat and hellbender salamander. The ODNr survey of Newark AFB, which focused on vegetation, breeding birds, fish, reptiles, amphibians, and mammals did not identify any state- or federally listed species. However, due to their occurrence in the vicinity of the base, there is potential for several species to occur on Newark AFB. These species are discussed below.

The federally listed endangered Indiana bat (*Myotis sodalis*) is widely dispersed in the summer, but is concentrated during winter hibernation in only a few caves in Indiana, Missouri, and Kentucky. Indiana bats forage mostly over forested areas, hunting more among trees than over water. They may fly among trees along streams or in the floodplain of rivers, or in dense forests on hillsides and ridges. They rarely live in buildings or under bridges. Because of these habitat preferences, it is expected that the Indiana bat could occur at Newark AFB as a transient during foraging and migration.

The hellbender salamander (*Cryptobranchus alleganiensis*) is a federal Category 2 candidate species that inhabits clear, fast-flowing streams and rivers with rocky bottoms. It hides under flat river rocks and feeds on crayfish, snails, and worms. Although Ramp Creek flows slowly (except when filled with storm water runoff), some potential exists for the salamander to occur on the base.

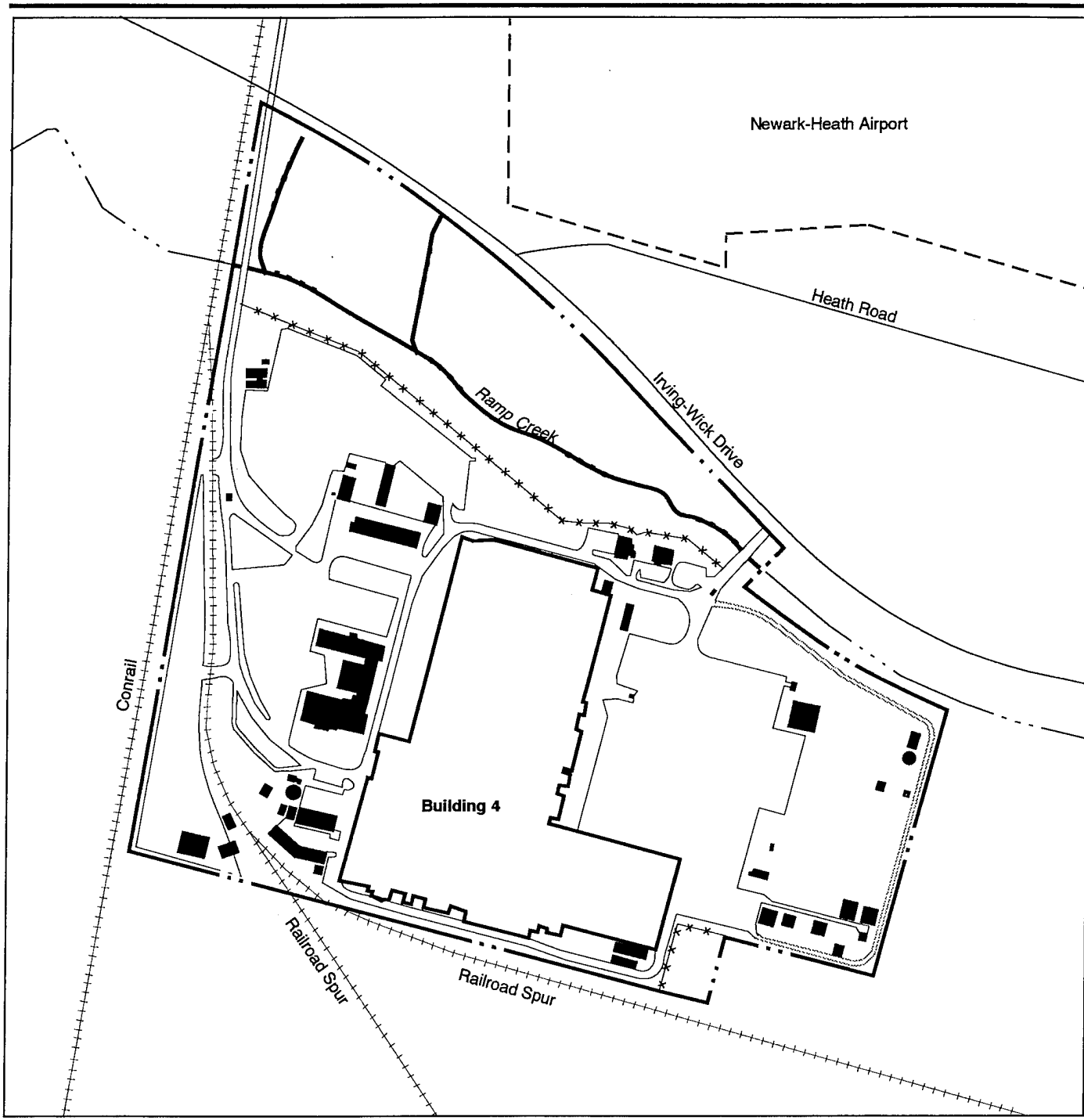
Three state-listed sensitive bird species have been sighted in the vicinity of Newark AFB: the least bittern (*Ixobrychus exilis*, state listed as endangered), the sora (*Porzana carolina*, state species of special interest), and the purple martin (*Progne subis*, also a state species of special interest) (Woolpert Consultants, Inc, 1993). The least bittern is a small heron, which is typically found in marshes that have dense cover. Least bitterns were last reported to be nesting with young in the vicinity of Newark AFB in 1983. The sora is another marsh-dwelling bird but is also found in grainfields. During the winter and migration periods, it is more common in saltwater marshes (National Geographic Society, 1987). During the other seasons, soras may inhabit Newark AFB; they were sighted in the vicinity of the base in 1983 and 1987. The more communal purple martin has been reported to be nesting in the vicinity since 1983. It has been placed on the state special interest list because of its dwindling population in Ohio (Ohio Department of Natural Resources, 1990).

No protected aquatic species have been reported on base; however, two species, a mollusk and a fish, were sighted in the general vicinity. The horn shell clam (*Unio merus tetralasmus*), state-listed threatened, was found in 1975, approximately 2.5 miles south (downstream) of Newark AFB at the confluence of the South Fork Licking River and Beaver Run (Ohio Department of Natural Resources, 1990). The lake chubsucker (*Erimyzon sucetta*), state-listed threatened, has historically been found downstream of Ramp Creek at the confluence of the South and North forks of the Licking River. This species inhabits lakes and larger streams with minimal turbidity and siltation and an abundance of aquatic vegetation (McClane, 1974).

3.4.4.4 Sensitive Habitats. For the purposes of evaluating biological resources in this EA, sensitive habitats include federally regulated wetlands, protected species habitat, plant communities that are considered by agencies to be unusual or of limited distribution, and important seasonal use areas for wildlife (e.g., breeding areas) that are of agency concern. Wetlands are the only potential sensitive habitat on Newark AFB.

Under federal definitions, wetlands are "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (Environmental Laboratory, 1987). The majority of jurisdictional wetlands in the United States meet three wetland delineation criteria (hydrophytic vegetation, hydric soils, and wetland hydrology) and are subject to Section 404 of the Clean Water Act.

It is estimated that less than 1 acre of potential federal jurisdictional wetlands (Figure 3.4-5) exists along Ramp Creek and its associated drainages in the northern portion of the base. The vegetation includes plants preferring wet areas, such as horsetail, sycamore, and cottonwood. The stream flows all year and provides the hydrological component for a wetland



EXPLANATION

-  Potential Wetlands
-  Base Boundary
-  Fence
-  Railroad
-  Newark-Heath Airport Boundary



Sensitive Habitats

Figure 3.4-5

determination. The soil type found in the vicinity of Ramp Creek is the Stonelick-Urban Land Complex that is, in general, frequently flooded and found in areas of shallow groundwater (U.S. Department of Agriculture, 1992).

3.4.5 Cultural Resources

Cultural resources are prehistoric and historic sites, structures, districts, artifacts, or any other physical evidence of human activity considered important to a culture, subculture, or community for scientific, traditional, religious, or any other reason. Cultural resources have been divided for ease of discussion into three main categories: prehistoric resources, historic structures and resources, and traditional resources. These types of resources are defined in Appendix D, Methods of Analysis.

The ROI for the analysis of cultural resources minimally includes all areas within the base boundaries, whether or not certain parcels would be subject to ground disturbance. For this analysis, the ROI is synonymous with the Area of Potential Effect (APE), as defined by regulations implementing the National Historic Preservation Act (NHPA). The potential conveyance of federal property to a private party or non-federal agency constitutes an undertaking, or a project that falls under the requirements of cultural resource legislative mandates, because any historic properties located on that property would cease to be protected by federal law. However, impacts resulting from conveyance could be reduced to a nonadverse level by placing preservation covenants on the lease or disposal document. Reuse activities within designated parcels that may affect historic properties would require the reuser to comply with the requirements contained in the preservation covenants.

Numerous laws and regulations require federal agencies to consider the effects of a proposed project on cultural resources. These laws and regulations stipulate a process for compliance, define the responsibilities of the federal agency proposing the action, and prescribe the relationship among other involved agencies (e.g., State Office of Historic Preservation, the Advisory Council on Historic Preservation). Methods used to achieve compliance with these requirements are presented in Appendix D. Only those potential historic properties determined to be significant under cultural resource legislation are subject to protection or consideration by a federal agency. The quality of significance, in terms of applicability to National Register of Historic Places (NRHP) criteria and of integrity, is discussed in Appendix D. Significant cultural resources, either prehistoric or historic in age, are referred to as "historic properties." In compliance with the NHPA, the Air Force has initiated the Section 106 review process with the State Historic Preservation Officer (SHPO). A record and literature search was performed at Newark AFB in December 1993 and at the Ohio Historical Center in March 1994.

3.4.5.1 Prehistoric Resources. The prehistory of Licking County extends into the past for more than 14,000 years. Abundant archaeological resources in many parts of Ohio have enabled archaeologists to establish a chronology of five major cultural periods: the Paleoindian (12,000-6000 B.C.), the Archaic (6000-1000 B.C.), the Woodland (1000 B.C.-A.D. 1000), the Late Prehistoric (1000-1650), and the Historic (1650-1850).

Most notable in the Newark AFB region are the earthworks of the Early and Middle Woodland moundbuilders. As the native people domesticated local plants and developed sedentary lifeways, the Woodland period and the cultural practices of the Adena and Hopewell peoples emerged. The burial mounds and large geometric earthworks associated with these societies are the most visible and impressive evidence of prehistoric occupation in the Licking County area.

The Newark Earthworks archaeological complex, located 2.25 miles northeast of Newark AFB, constitutes one of the more important mound complexes in Ohio. Research on this complex has demonstrated that a feature associated with the earthworks (consisting of parallel earthen embankments interpreted as a road) probably once extended from the core of the complex to the southwest, passing immediately east of the southeast corner of Newark AFB.

In December 1989, an archaeological investigation was performed at Newark AFB in support of the Base Comprehensive Plan. An intensive reconnaissance survey (Woolpert Consultants, Inc., 1989 and 1990), supplemented by shovel testing, was conducted to identify archaeological resources that could be considered eligible for inclusion in the NRHP. Results indicated that no archaeological sites are located on Newark AFB. The Ohio SHPO concurred with the findings of this study (letter dated August 24, 1992), and no further identification of archaeological resources was deemed necessary. The Ohio SHPO did, however, express concern over the proximity of the suspected remains of features associated with the Newark Earthworks to the Newark-Heath Airport and Newark AFB. Further investigations were conducted, including ground survey, aerial photography, and interviews with local archaeologists. It was concluded that there are no remains of possible features on Newark AFB.

The Historic period began when people of European and African descent living on the East Coast migrated over the Appalachian mountains and came in contact with native societies. Devastated by disease and oppression, by 1850 nearly all of the remaining native people had been moved out of the Ohio region.

3.4.5.2 Historic Structures and Resources. The Licking County area was first occupied by settlers from the eastern seaboard after 1795. The town of Newark was laid out in 1801 and became the county seat when Licking County was created in 1808. The construction of the Ohio Canal in 1825,

linking Lake Erie and the Ohio River, was a key factor in the growth of agriculture and population in the town of Newark and Licking County. In the 1850s railroads enhanced the area's trend toward industry, and from 1880-1930 Newark grew to a city as industry flourished.

The area known today as Newark AFB was the original site of a proposed Air Force Heavy Press Program. In 1952 the Air Force contracted Kaiser Aluminum and Chemical Corporation to construct and operate aluminum presses capable of fabricating aircraft wings up to 35 feet long. In order to house the aluminum presses, construction of the main facility at Newark AFB (Building 4) was initiated. Despite the cancellation of the Heavy Press Program in 1953, the partially constructed building was completed in 1954 and designated Air Force Industrial Plant Number 48. The facility was primarily used for storage of industrial equipment (Dames & Moore, Inc., 1993).

In 1959, the industrial plant was redesignated as the Heath Maintenance Annex of Dayton Air Force Depot. Modifications were made to the facility from 1961 to 1962 to house inertial guidance system repair shops and calibration laboratories, two factors supporting the accuracy of the U.S. ballistic missile program. In 1962, the 2802nd IGCG was designated, and the Annex was redesignated as Newark Air Force Station. The IGCG was deactivated in 1968, and the AGMC was activated as a replacement organization. In 1987, the facility was redesignated as Newark AFB.

Although the base originated with the Air Force Heavy Press Program, its main mission was born out of the Cold War and the need to provide accurate and reliable guidance systems and calibration equipment for the ballistic missile program.

The Directorates of Metrology and Maintenance, housed at Newark AFB, would set the standards for the measurements required by the rapidly changing inertial guidance technology and then calibrate the guidance systems of the most advanced ballistic missile programs. At the metrology facility, the Air Force assembled a team of scientists, engineers, and technicians for the purpose of defining and supporting the highest precision measurements possible for its weapons systems. This team would conceive and modify Building 4 into "the most advanced standards laboratory in the world" (Horton, 1961). The Metrology Section continues as the Air Force's sole authority for measurement standards. Complementing the mission of the Metrology Section, the Directorate of Maintenance would be responsible for maintaining the inertial guidance systems for all American land-based intercontinental ballistic missiles, and the inertial systems for a variety of aircraft, submarines, air-launched missiles, and sea-based missiles.

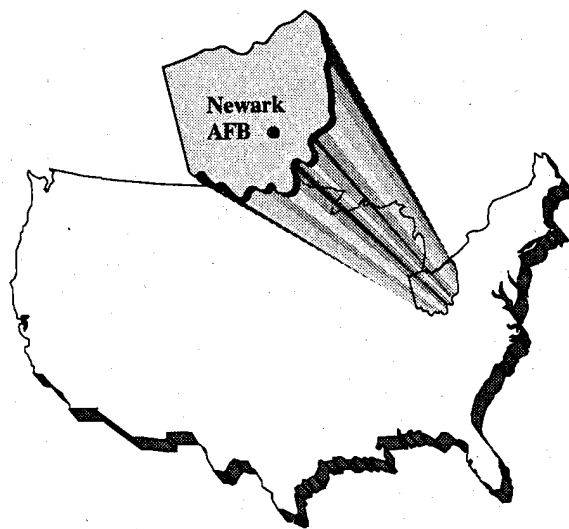
Because Newark AFB was initially constructed in 1954, there are no World War II structures located on the base. Although not yet 50 years in age, facilities at Newark AFB are potentially eligible for listing in the NRHP if

exceptional significance within the Cold War historic context (1945 to 1991) is demonstrated.

As described in Section 3.4.5.1, no archaeological resources, either prehistoric or historic in nature, are located on Newark AFB. A Historic Building Inventory and Evaluation was conducted at Newark AFB in December 1994. The field survey and background research resulted in the identification of an exceptionally significant Cold War Era property on the base. Building 4, the primary industrial complex at Newark AFB, exhibited the exceptional national significance required of properties less than 50 years old. Thus, it is proposed as eligible for listing in the NRHP. This finding cannot be considered final until the Ohio SHPO concurs with the study results.

3.4.5.3 Traditional Resources. Consultation has been initiated with the appropriate federally recognized tribes of Ohio to ascertain whether or not any Native American group or individual has concern with or can identify sacred areas within the Newark AFB environs.

Traditional resources can include archaeological sites, burial sites, ceremonial areas, caves, mountains, water sources, trails, plant habitat or gathering areas, or any other natural area important to a culture for religious or heritage reasons. Significant traditional sites are subject to the same regulations and afforded the same protection as other types of historic properties. No traditional sites have yet been identified. Any traditional sites identified would be attributed to indigenous Native American groups. No traditional sites associated with any other cultural group (e.g., Chinese, African-American) have been identified.



CHAPTER 4

ENVIRONMENTAL CONSEQUENCES

4.0 ENVIRONMENTAL CONSEQUENCES

4.1 INTRODUCTION

This chapter discusses the potential environmental consequences associated with the Proposed Action and alternatives. To provide the context in which potential environmental impacts may occur, discussions of potential changes to the local communities, including population, land use and aesthetics, transportation, and utility services are included in this EA. In addition, issues related to current and future management of hazardous materials and wastes are discussed. Impacts to the physical and natural environment are evaluated for geology and soils, water resources, air quality, biological resources, and cultural resources. These impacts may occur as a direct result of disposal and reuse activities or as an indirect result caused by changes within the local communities. Possible mitigation measures to minimize or eliminate environmental impacts are also presented.

Means of mitigating environmental impacts that may result from implementation of the Proposed Action or alternatives by property recipients are discussed as required by NEPA. Potential mitigation measures depend upon the particular resource affected. In general, however, mitigation measures are defined in CEQ regulations as actions that include:

- (a) Avoiding the impact altogether by not taking an action or certain aspect of the action
- (b) Minimizing impacts by limiting the degree or magnitude of the action and its implementation
- (c) Rectifying the impact by repairing, rehabilitating, or restoring the affected environment
- (d) Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action
- (e) Compensating for the impact by replacing or providing substitute resources or environments.

A discussion of the effectiveness of mitigation measures is included for those resource areas where it is applicable. Where appropriate, a discussion regarding the probability of success associated with a particular mitigation is included.

Since most potential environmental impacts would result directly from the reuse by others, the Air Force would not typically be responsible for implementing such mitigations. Full responsibility for these suggested

mitigations, therefore, would be borne primarily by future property recipients or local government agencies.

Although reuse development would be decided by recipients and local zoning authorities, probable reuse scenarios were evaluated to analyze environmental impacts.

Alternatives are defined for this analysis on the basis of (1) plans of local communities and interested individuals, (2) general land use planning considerations, and (3) Air Force generated plans to provide a range of reuse options. Reuse scenarios considered in this EA must be sufficiently detailed to permit environmental analysis. Initial concepts and plans are taken as starting points for scenarios to be analyzed. Available information on any reuse alternative is then supplemented with economic, demographic, transportation, and other planning data to provide a reuse scenario for analysis.

4.2 LOCAL COMMUNITY

This section discusses potential socioeconomic effects of the disposal and reuse of Newark AFB. Licking County is the ROI for socioeconomic effects of Newark AFB.

4.2.1 Community Setting

Socioeconomic effects are addressed only to the extent that they are interrelated with the biophysical environment. Thus, the discussion includes key employment and population effects of the Proposed Action, the Industrial Alternative, and the No-Action Alternative.

This analysis recognizes the potential for community impacts arising from "announcement effects" stemming from information regarding the base's disposal or reuse. Such announcements may impact community perceptions and, in turn, could have important local economic effects. An example would be the in-migration of people anticipating employment under one of the reuse options. If it were later announced that the No-Action Alternative was chosen, many of the newcomers would leave the area to seek employment elsewhere. Such an effect could, therefore, result in an initial, temporary increase in population followed by a decline in population as people leave the area. Changes associated with announcement effects, while potentially important, are highly unpredictable and difficult to quantify; therefore, such effects are excluded from the quantitative analysis in this study and are not included in numeric data presented in this report.

Under preclosure conditions, it is projected that the total employment in the ROI would increase from 58,327 in 1992, to 59,977 in 1996, and to 68,957 in 2016, equivalent to an average annual growth rate of 0.7 percent from 1992 to 2016. Additionally, ROI population is projected to increase at

an average annual rate of 0.5 percent, from 129,587 persons in 1992 to 132,660 in 1996, and to 145,323 persons in 2016.

Under the Proposed Action, approximately 5 percent of the increase in direct employment opportunities associated with privatization-in-place operations and 15 percent of the direct jobs associated with DFAS activities amount to 7 percent of all direct jobs that are projected to be filled by in-migrating workers. Secondary in-migrating workers could fill 5 percent of all secondary jobs. The share of direct and secondary employment opportunities associated with the Industrial Alternative that would be filled by in-migrating workers is 5 and 1 percent, respectively.

Direct jobs would be located on base property and secondary jobs would be created throughout the ROI. Most of the in-migrating workers are expected to relocate to Licking County, primarily in the cities of Heath and Newark. Tables 4.2-1 and 4.2-2 show the employment and population effects of each of the reuse alternatives as compared to preclosure conditions.

Table 4.2-1. Reuse-Related Employment Effects

Alternative	2001	2006	2016
Proposed Action	451	1,121	2,460
Industrial Alternative	-2,853	-2,180	-832
No-Action Alternative	-3,535	-3,535	-3,535

Table 4.2-2. Reuse-Related Population Effects

Alternative	2001	2006	2016
Proposed Action	-300	-228	-89
Industrial Alternative	-1,604	-1,553	-1,452
No-Action Alternative	-1,654	-1,654	-1,654

4.2.1.1 Proposed Action. As a result of the transition of Newark AFB from a DOD installation to a private operation along with DFAS activities, direct employment would decrease from the 1992 level of 2,231 jobs to 1,500 jobs in 1996. This decrease in direct employment and the resultant loss of direct payrolls and base expenditures for goods and services would result in a decline in the secondary employment level from 1,426 jobs in 1992 to 1,237 jobs in 1996. The projected total employment in the ROI would be 59,172 by 1996.

Population out-migration resulting from the loss of employment opportunities is anticipated to occur by 1996. It is estimated that 497 persons would leave the ROI as a result of the transition, thereby reducing the 1996 ROI population level to 132,163. The primary communities that would be affected are the cities of Heath and Newark, which would lose 129 and 313

persons, respectively. The remaining out-migrating workers would leave from other communities and unincorporated areas within Licking County.

By 2016, reuse activities at Newark AFB under the Proposed Action would generate approximately 6,002 site-related jobs (3,313 direct and 2,689 secondary); this is an increase of 2,460 jobs (1,197 direct and 1,263 secondary jobs) over preclosure conditions. Total employment in the ROI would be 71,417 in 2016, which is equivalent to an average annual growth of 0.8 percent from preclosure to 2016.

Population in the ROI is projected to increase as a result of the new employment generated by the Proposed Action. A total of 408 persons, comprising direct and secondary workers and their dependents, are anticipated to move into the ROI between 1996 and 2016. The net population effect of the disposal and reuse of Newark AFB is an out-migration of 89 persons. As a result, the ROI population is expected to total 145,234 by 2016, which is equivalent to an average annual growth rate of 0.5 percent from preclosure to 2016.

4.2.1.2 Industrial Alternative. As a result of the drawdown of Newark AFB activities, direct employment would decrease from the 1992 level of 2,116 jobs to 5 OL positions by 1996. This decrease in direct employment and the resultant loss of direct payrolls and base expenditures for goods and services would result in a decline in the secondary employment level from 1,426 jobs in 1992 to 2 jobs by 1996. As a result, the projected ROI total employment level would be 56,442 jobs by 1996.

Population out-migration resulting from the loss of employment opportunities is anticipated to occur by the closure date. It is estimated that 1,654 persons would leave the ROI as a result of the closure, thereby reducing the 1996 ROI population level to 131,006. The primary communities that would be affected are the cities of Heath and Newark, which would lose approximately 403 and 984 persons, respectively.

By 2016, reuse activities under the Industrial Alternative would generate 2,710 site-related jobs (1,729 direct and 981 secondary), a decrease of 832 jobs (387 direct and 445 secondary) from preclosure conditions. It is estimated that the ROI employment level would reach 68,125 jobs in 2016. This level is equivalent to an average annual increase of 0.6 percent from 1992 to 2016.

The ROI population would increase by 202 persons between 1996 and 2016 as a result of new employment generated by the Industrial Alternative. Thus, the net effect of the disposal and reuse of Newark AFB is an out-migration of 1,452 persons. The ROI population level is expected to increase to 143,871 by 2016. This level would result in an average annual growth rate in ROI population of 0.4 percent from the preclosure date to 2016.

4.2.1.3 No-Action Alternative. Under the No-Action Alternative, the ROI employment level would decline by 3,535 jobs (2,111 direct and 1,424 secondary) by the closure date and would remain constant through 2016. ROI total employment would be 65,422 in 2016, which is equivalent to an average annual growth rate of 0.5 percent.

As a result of the closure of Newark AFB, an estimated 1,654 persons would leave the ROI. Beyond the closure date, ROI population levels would not be affected by the activities associated with the No-Action Alternative. Under this alternative, the ROI population level is estimated to reach 142,948 persons in 2016.

4.2.2 Land Use and Aesthetics

This section discusses the Proposed Action and alternatives relative to land use and zoning to determine potential impacts in terms of comprehensive plans, zoning, land use, and aesthetics.

4.2.2.1 Proposed Action

Land Use Plans and Regulations. Local comprehensive plans would be applicable under civilian reuse of the base property. As described in Section 3.2.2.1, the city of Heath is planning to update its comprehensive plan. It is anticipated that the plan will identify the proposed reuse of Newark AFB and, therefore, proposed land uses would be consistent with the plan. Under the existing comprehensive plan, the proposed institutional (educational), commercial (office), and public facilities/recreation land uses would be inconsistent with the industrial designation for the base property. The area north of Ramp Creek would remain undeveloped and would be consistent with the open space designation for this area.

Zoning. Local zoning ordinances would be applicable under civilian reuse of the base property. As described in Section 3.2.2.1, Heath has zoned the base and adjacent property for heavy industrial uses. The continuation of current base activities (i.e., maintenance of navigational guidance systems and metrology) would be consistent with this zoning. However, the proposed institutional (educational), commercial (office), and public facilities/recreation land uses would not be consistent with this zoning. The portion of Newark AFB to be utilized by DFAS would be under federal jurisdiction and would not be subject to the city's zoning ordinance or laws.

Land Use. The Proposed Action, as identified in Section 2.2, proposes essentially the same use of the property as at preclosure, only under private ownership. The commercial (office) land use west of Building 4 would remain the same; however, DFAS would occupy the area. The only land use change under the Proposed Action is the elimination of the institutional (medical) land use. The building utilized for institutional (medical) purposes would be utilized for commercial (office) uses under the Proposed Action.

The remainder of the base property would be the same as under preclosure conditions.

The Proposed Action land uses would be compatible with surrounding land uses, as adjacent land uses are generally industrial, agricultural, and vacant.

Aesthetics. As described in Section 3.2.2.2, the only area of high visual sensitivity on base is the area surrounding Ramp Creek. Under the Proposed Action, this area would be left undeveloped and the visual sensitivity would be unchanged.

Mitigation Measures. No mitigation measures would be required.

4.2.2.2 Industrial Alternative

Land Use Plans and Regulations. As discussed under the Proposed Action, the city of Heath has not yet developed a revised comprehensive plan. However, it is anticipated that the revised comprehensive plan would provide for reuse of the base and the proposed land uses would, therefore, be consistent with the plan. The proposed commercial (office) and public facilities/recreation land uses would be inconsistent with the industrial designation for the base property under the existing comprehensive plan. The area north of Ramp Creek would remain undeveloped and would be consistent with the open space designation for this area.

Zoning. As discussed under the Proposed Action, the city of Heath has zoned the base property, as well as adjacent property, for heavy industrial uses. The continuation of the majority of the base property for industrial use would be consistent with this zoning. However, the proposed commercial (office) and public facilities/recreation land uses would not be allowed under this zoning.

Land Use. With the Industrial Alternative, the land uses would be the same as those identified under the Proposed Action except for the elimination of institutional (educational) and modification of the public facilities/recreation land use. The institutional (educational) land use would be converted to public facilities/recreation. The commercial land use west of Building 4 would be used for civilian office space rather than DFAS.

The proposed land uses under the Industrial Alternative would be compatible with surrounding land uses; adjacent land uses are generally industrial, agricultural, and vacant.

Aesthetics. As discussed under the Proposed Action, the only area of high visual sensitivity on base is the area surrounding Ramp Creek. Under the Industrial Alternative, this area would be left undeveloped and the visual sensitivity would be unchanged.

Mitigation Measures. No mitigation measures would be required.

4.2.2.3 No-Action Alternative. Under the No-Action Alternative, the entire base property would be placed in caretaker status. The base would be maintained, but not actively used. Under caretaker status, the 70-acre base property would constitute an unused parcel in the city of Heath. However, it is anticipated that the city of Heath's comprehensive plan would designate the base property for reuse, and the caretaker status would, therefore, be inconsistent with the revised comprehensive plan. However, the proposed caretaker status would be essentially federal use and, therefore, would not be subject to the city's zoning.

Adjacent land uses are generally industrial, vacant, and agricultural, which would be compatible. With the absence of human activity, some landscaped portions of the base could return to more natural vegetation.

4.2.3 Transportation

Reuse-related effects on roadway traffic were assessed by estimating the number of trips generated by each land use type considering employees, visitors, residents, and service vehicles associated with on-site activities for each alternative. Principal trip-generation land uses included industrial and commercial (office) uses.

Trip generation was based on applying the trip rates from the Institute of Transportation Engineer's Trip Generation Manual (1991) to the existing and proposed land uses to determine total daily trips. Daily trips (shown in Table 4.2-3) were distributed on the roadway network using existing travel patterns for commuters and on the location of residences of base personnel. It was assumed that the residential choices of reuse-related employees would correspond to those of current base personnel. The amount of growth in background traffic is based on projections of population and employment in the study area and surrounding region. This growth rate was assumed to be 0.5 percent per year.

Table 4.2-3 Average Daily Trip Generation

Alternative	2001	2006	2016
Proposed Action	5,250	6,000	7,600
Industrial Alternative	1,100	2,150	4,200
No-Action Alternative	50	50	50

Traffic impacts were determined based on the LOS changes for each of the key roadways. Analyses were conducted for each reuse alternative and the No-Action Alternative. The No-Action alternative was included to identify

the incremental impact of project-generated traffic over the traffic expected as a result of other growth in the Newark AFB region.

4.2.3.1 Proposed Action. Traffic generated on the project site and distributed on the roads within the ROI as a result of the Proposed Action is estimated to be 7,600 daily vehicle trips by 2016 (see Table 4.2-3). Table 4.2-4 presents, for the Proposed Action, the projected peak-hour traffic and resulting LOS for 2001, 2006, and 2016 on key road segments.

Table 4.2-4. Peak-Hour Traffic Volumes and LOS on Key Roads - Proposed Action

Roadway	Segment	Capacity	1992		2001		2006		2016	
			PHV	LOS	PHV	LOS	PHV	LOS	PHV	LOS
SH 79	Irving-Wick Drive to South 30th Street	3,600	2,500	C	2,400	C	2,500	C	2,700	D
SH 79	South 30th Street to northern Heath city limit	3,600	1,400	B	1,500	B	1,550	B	1,700	B
SH 79	Irving-Wick Drive to southern Heath city limit	4,400	1,900	B	2,000	B	2,100	B	2,250	B
Irving-Wick Drive	Heath Road to SH 79	2,300	900	C	900	C	950	C	1,100	D
Irving-Wick Drive	West of Heath Road	2,300	550	B	500	B	550	B	650	C
Heath Road	Irving-Wick Drive to SH 79	2,300	350	A	450	B	450	B	550	B

LOS = level of service
 PHV = peak-hour volume
 SH = State Highway

Regional. By 2016, the traffic resulting from reuse would increase the PHV on SH 79 between Irving-Wick Drive and South 30th Street to 2,700 vehicles, an increase of 200 vehicles over preclosure conditions. This increase would degrade the operating conditions on this segment to LOS D, compared to LOS C at preclosure. The segment of SH 79 from South 30th Street to the northern Heath city limit would continue to operate at LOS B.

The segment of SH 79 from Irving-Wick Drive to the southern Heath city limit would also continue to operate at LOS B.

Local. By 2016, the traffic resulting from reuse would increase the PHV on Irving-Wick Drive between Heath Road and SH 79 to 1,100 vehicles, an increase of 200 vehicles over preclosure conditions. This increase would degrade the operating conditions on this segment to LOS D, compared to LOS C at preclosure. By 2016, the PHV on Irving-Wick Drive west of Heath Road would increase to 650 vehicles, an increase of 100 vehicles over preclosure. This increase would degrade the operating condition to LOS C, compared to LOS B at preclosure. Reuse-related traffic would increase the PHV on Heath Road between Irving-Wick Drive and SH 79 to 550 vehicles, an increase of 200 vehicles over preclosure conditions. This increase would degrade the operating condition to LOS B by 2016, compared to LOS A at preclosure.

On-Base. The on-base roads can be expected to adequately handle the traffic generated by reuse without improvements.

Mitigation Measures. No mitigation measures would be required.

4.2.3.2 Industrial Alternative. Traffic generated on the project site and distributed on the roads within the ROI as a result of the Industrial Alternative is estimated to be 4,200 daily vehicle trips by 2016 (see Table 4.2-3). Table 4.2-5 presents the projected peak-hour traffic and resulting LOS for 2001, 2006, and 2016 on key road segments.

Regional. By 2016, the traffic resulting from reuse would increase the PHV on SH 79 between Irving-Wick Drive and South 30th Street to 2,550 vehicles, an increase of 50 vehicles over preclosure conditions. Operating conditions on this segment would remain at LOS C. The segment of SH 79 from South 30th Street to the northern Heath city limit would continue to operate at LOS B. Traffic on the segment of SH 79 from Irving-Wick Drive to the southern Heath city limit would increase by 200 vehicles. This segment would continue to operate at LOS B.

Local. By 2016, the traffic resulting from reuse would decrease the PHV on Irving-Wick Drive between Heath Road and SH 79 to 850 vehicles, a decrease of 50 vehicles over preclosure conditions. Operating conditions on this segment would remain at LOS C. By 2016, the PHV on Irving-Wick Drive west of Heath Road would decrease to 400 vehicles, a decrease of 150 vehicles from preclosure. Operating conditions on this segment would remain at LOS B. Reuse-related traffic would increase the PHV on Heath Road between Irving-Wick Drive and SH 79 to 400 vehicles, an increase of 50 vehicles over preclosure conditions. This increase would degrade the operating condition to LOS B by 2016, from LOS A at preclosure.

Table 4.2-5. Peak-Hour Traffic Volumes and LOS on Key Roads - Industrial Alternative

Roadway	Segment	Capacity	1992		2001		2006		2016	
			PHV	LOS	PHV	LOS	PHV	LOS	PHV	LOS
SH 79	Irving-Wick Drive to South 30th Street	3,600	2,500	C	2,300	C	2,400	C	2,550	C
SH 79	South 30th Street to northern Heath city limit	3,600	1,400	B	1,350	B	1,450	B	1,550	B
SH 79	Irving-Wick Drive to southern Heath city limit	4,400	1,900	B	1,900	B	1,950	B	2,100	B
Irving-Wick Drive	Heath Road to SH 79	2,300	900	C	650	C	700	C	850	C
Irving-Wick Drive	West of Heath Road	2,300	550	B	300	A	350	A	400	B
Heath Road	Irving-Wick Drive to SH 79	2,300	350	A	300	A	350	A	400	B

LOS = level of service
 PHV = peak-hour volume
 SH = State Highway

On-Base. The on-base roads can be expected to adequately handle the majority of the traffic generated by reuse without improvements.

Mitigation Measures. No mitigation measures would be required.

4.2.3.3 No-Action Alternative. Traffic generated on the project site and distributed on the roads within the ROI as a result of the No-Action Alternative is estimated to be 50 daily vehicle trips by 2016 (see Table 4.2-3). Table 4.2-6 presents, for the No-Action Alternative, the projected peak-hour traffic and resulting LOS for 2001, 2006, and 2016 on key road segments.

Regional. By 2016, the traffic resulting from the No-Action Alternative would decrease the PHV on SH 79 between South 30th Street and Irving-Wick Drive to 2,400 vehicles, a decrease of 100 vehicles from preclosure conditions. This segment would continue to operate at LOS C. The segment of SH 79 from South 30th Street to the northern Heath city limit would continue to operate at LOS B. The segment of SH 79 from Irving-Wick Drive to the southern Heath city limit would also operate at LOS B.

Table 4.2-6 Peak-Hour Traffic Volumes and LOS on Key Roads - No-Action Alternative

Roadway	Segment	Capacity	1992		2001		2006		2016	
			PHV	LOS	PHV	LOS	PHV	LOS	PHV	LOS
SH 79	Irving-Wick Drive to South 30th Street	3,600	2,300	C	2,250	C	2,300	C	2,400	C
SH 79	South 30th Street to northern Heath city limit	3,600	1,400	B	1,350	B	1,350	B	1,450	B
SH 79	Irving-Wick Drive to southern Heath city limit	4,400	1,900	B	1,850	B	1,900	B	2,000	B
Irving-Wick Drive	Heath Road to SH 79	2,300	900	C	550	B	600	B	600	B
Irving-Wick Drive	West of Heath Road	2,300	550	B	200	A	250	A	300	A
Heath Road	Irving-Wick Drive to SH 79	2,300	350	A	250	A	250	A	300	A

LOS = level of service
 PHV = peak-hour volume
 SH = State Highway

Local. By 2016, the traffic resulting from reuse would decrease the PHV on Irving-Wick Drive between SH 79 and Heath Road to 600 vehicles, a decrease of 300 vehicles from preclosure conditions. This decrease would improve the operating condition to LOS B by 2016, compared to LOS C at preclosure. Operating conditions on Irving-Wick Drive west of Heath Road would improve to LOS A. Reuse-related traffic would decrease the peak-hour traffic volume on Heath Road between Irving-Wick Drive and SH 79 to 300 vehicles, a decrease of 40 vehicles over preclosure conditions. This segment would continue to operate at LOS A.

On-Base. The on-base roads can be expected to adequately handle caretaker activities.

Mitigation Measures. No mitigation measures would be required.

4.2.4 Utilities

Direct and indirect changes in future regional utility demand for the Proposed Action and alternatives were estimated by applying preclosure per capita

rates based on average daily use in each utility ROI. These per capita rates were applied to projections of future residents and employees associated with the Proposed Action and each of the alternatives.

Effects of reuse on utility systems were assessed by comparing projected demand within each utility system ROI under each reuse alternative to demand under preclosure for each period of analysis (2001, 2006, 2016). On-site utility demands were estimated by applying use rates to appropriate units of land uses (employees, square footage, etc.).

The following assumptions were made in the analysis of potential effects to on-site utilities:

- The site would be serviced by local utility providers.
- The existing distribution/collection systems would be available in their current condition for reuse.

4.2.4.1 Proposed Action. Table 4.2-7 summarizes the projected utility demand under the Proposed Action at 5, 10, and 20 years after closure. By 2016, the base-related share of the total ROI utility consumption is projected to increase by 18 to 70 percent when compared to preclosure conditions. All demands would be within the capacity of existing utility systems.

Mitigation Measures. No mitigation measures would be required.

4.2.4.2 Industrial Alternative. Projected utility demand under the Industrial Alternative is presented in Table 4.2-7. By 2016, the base-related share of the total ROI utility consumption is projected to decrease by 15 to 42 percent from preclosure conditions. All demands would be within the capacity of existing utility systems.

Mitigation Measures. No mitigation measures would be required.

4.2.4.3 No-Action Alternative. Projected utility demand under the No-Action Alternative is presented in Table 4.2-7. The utility projections shown for this alternative generally reflect the change expected in utility usage within the ROI of each utility system and are estimated based on projected changes in population within the ROI boundary of each utility. Generally, overall population projections within the utility ROIs indicate an increase at an annual rate of 0.5 percent over the 20-year period from 1996 to 2016. As expected, immediately after closure the base-related share of the total ROI consumption would decrease by approximately 100 percent and would remain in this position throughout the 20-year analysis period. All demands would be within the capacity of existing utility systems.

Mitigation Measures. No mitigation measures would be required.

Table 4.2-7 Projected Utility Consumption in the ROI

	2001	Percent Change	2006	Percent Change	2016	Percent Change
Water Consumption (MGD)						
Proposed Action	7.12	-3.86	7.51	6.57	8.70	18.64
Industrial Alternative	6.84	-81.94	7.24	-66.24	8.44	-42.40
No-Action Alternative	6.70	-99.83	7.06	-99.84	8.18	-99.86
Wastewater Treatment (MGD)						
Proposed Action	9.20	2.22	9.48	15.90	10.35	36.86
Industrial Alternative	9.01	-81.39	9.29	-64.33	10.17	-35.10
No-Action Alternative	8.91	-99.82	9.17	-99.83	10.00	-99.84
Solid Waste Disposal (tons/day)						
Proposed Action	679	11.32	696	14.90	733	17.09
Industrial Alternative	677	-54.61	695	-22.98	732	-2.54
No-Action Alternative	676	-72.98	693	-43.19	728	-23.38
Electrical Consumption (MWH/day)						
Proposed Action	4,389	-0.79	4,482	11.97	4,757	33.44
Industrial Alternative	4,254	-83.34	4,349	-67.81	4,627	-39.85
No-Action Alternative	4,216	-99.87	4,294	-99.87	4,539	-99.88
Natural Gas Consumption (MMCF)						
Proposed Action	37.0	4.50	37.5	19.57	39.0	46.55
Industrial Alternative	36.5	-81.08	37.0	-63.26	38.5	-30.00
No-Action Alternative	36.0	-99.83	37.0	-99.84	38.0	-99.84

Note: Consumption represents total consumption in the ROI; percent change is the percent change in the reuse-related share of ROI consumption over preclosure conditions.

MGD = million gallons per day

MMCF = million cubic feet

MWH = megawatt-hours

4.3 HAZARDOUS MATERIALS AND HAZARDOUS WASTE MANAGEMENT

This section addresses the potential impacts of existing contaminated sites on the various reuse options, and the potential for environmental impacts caused by hazardous materials/waste management practices associated with the reuse alternatives. Hazardous materials/wastes, IRP sites, storage tanks, asbestos, pesticides, PCBs, radon, medical/biohazardous wastes, radioactive materials, and lead-based paint are discussed within this section.

The U.S. Air Force is committed to the remediation of all contamination at Newark AFB due to past Air Force activities. The OL will remain after base closure to coordinate remediation activities. Delays or restrictions in disposal and reuse of property may occur due to the extent of contamination and the results of both the risk assessment and remedial designs determined for contaminated sites. Examples of conditions resulting in land use restrictions would be the capping of landfills and the constraints from methane

generation and cap integrity, as well as the location of long-term monitoring wells. These conditions would have to be considered by all parties in the layout of future development. Options to recipients include creation of parks, greenbelts, or open spaces over these areas.

Regulatory standards and guidelines have been applied in determining the impacts caused by hazardous materials/waste. The following criteria were used to identify potential impacts:

- Accidental release of friable asbestos during the demolition or modification of a structure
- Generation of 100 kilograms or more of hazardous waste or 1 kilogram of an acute hazardous waste (OAC 3745-51-05) in a calendar month, resulting in increased regulatory requirements
- New operational requirements or service for all UST and tank systems
- Any spill or release of a reportable quantity of a hazardous material
- Manufacturing of any compound that requires notifying the pertinent regulatory agency
- Exposure of the environment or public to any hazardous material through release or disposal practices.

4.3.1 Proposed Action

4.3.1.1 Hazardous Materials Management. The types of hazardous materials likely to be utilized under the Proposed Action would be similar to those used at preclosure. The quantity of hazardous materials used is anticipated to increase slightly with expansion of base activities. Hazardous materials likely to be utilized for each land use zone under the Proposed Action are identified in Table 4.3-1. The specific chemical compositions and exact use rates associated with proposed reuse activities are not known.

If the Proposed Action were implemented, each separate organization would be responsible for the management of hazardous materials according to applicable regulations, therefore, precluding any significant impacts. Additionally, each organization would have to comply with EPCRA guidelines, which require that local communities be informed of the use of hazardous materials.

4.3.1.2 Hazardous Waste Management. Under the Proposed Action, hazardous wastes would be generated from the hazardous materials and the processes that utilize those materials (see Table 4.3-1). Hazardous wastes could include spent solvents (including CFC-113, acetone, toluene, and

Table 4.3-1. Hazardous Materials Usage by Land Use - Proposed Action

Land Use Zones	Operation Process	Hazardous Materials
Industrial	Maintenance and repair of guidance systems and metrology, storage, vehicle maintenance	Adhesives, aerosols, batteries, corrosives, degreasers, fuels, ignitables, paints, pesticides, POL, radioactive materials, solders, solvents, thinners
Institutional (educational)	Child-care center	Household products, over-the-counter pesticides, paints, thinners
Commercial (office)	Offices, administration	Cleaners, household products, paints, pesticides, thinners
Public facilities/recreation	Maintenance of existing recreational facilities, including gymnasium and other outdoor recreational facilities	Fertilizer, household products, paints, pesticides, POL, thinners
Vacant land	Open space	Pesticides

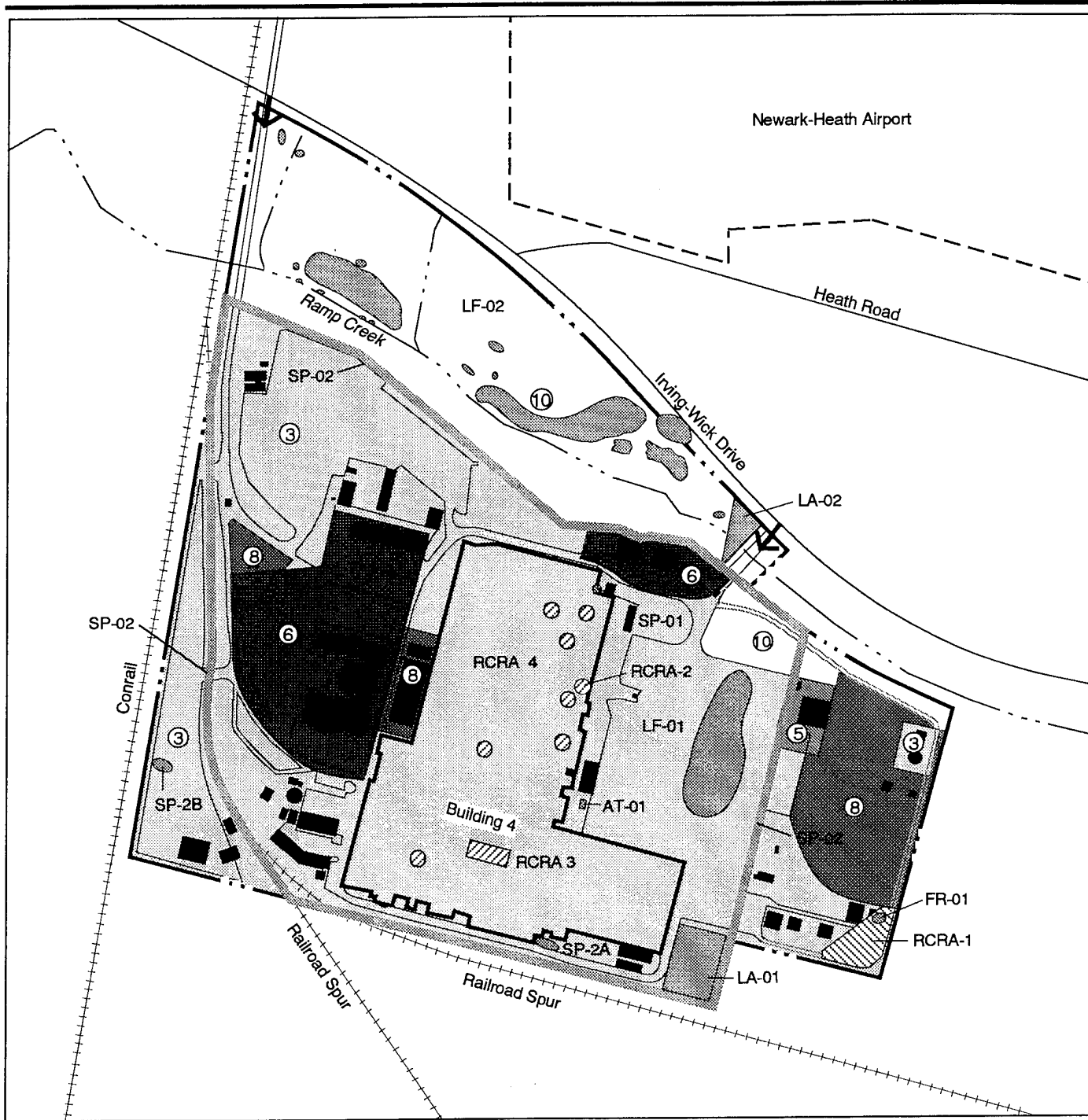
POL = petroleum, oil, and lubricants

others), waste paints, thinners, paint strippers, waste POL, heavy metal residues, acids, batteries, and others.

The presence of multiple, independent owners/operators (i.e., DOD and the guidance system contractor) on the base may change the regulatory requirements and probably would increase the regulatory burden relative to hazardous waste management. For example, if independent owners/operators are identified as small quantity generators, an increase in the quantity, as well as the storage time, of hazardous wastes could result. Activities associated with the Proposed Action would lead to a slight increase in the amount of hazardous waste generated during preclosure conditions. However, hazardous waste management by all independent owners/operators in accordance with applicable regulations would preclude any significant impacts. In addition, each owner/operator would be required to obtain the appropriate permits for generation and disposal of hazardous waste.

Continued remediation of the RCRA 1 site may result in a delay in property transfer or lease restrictions on land use. Investigations to determine the extent of contamination at RCRA sites 2, 3, and 4 are ongoing; site remediation could result in impacts to reuse. All RCRA sites are within the industrial land use area and are shown on Figure 4.3-1.

4.3.1.3 Installation Restoration Program Sites. The Air Force is responsible for remediation of all IRP sites at Newark AFB, and is committed to continue IRP activities at Newark AFB under DERP and CERCLA. Coordination and management of these activities would be the responsibility of the OL.



EXPLANATION

- | | |
|-------------------------------|---------------------------------|
| ① Airfield * | ⑥ Commercial (Office) |
| ② Aviation Support * | ⑦ Residential * |
| ③ Industrial | ⑧ Public Facilities/ Recreation |
| ④ Institutional (Medical) * | ⑨ Agriculture * |
| ⑤ Institutional (Educational) | ⑩ Vacant Land |

- ← Access Point
 - - - Base Boundary
 - - - Newark-Heath Airport Boundary
 *** Fence
 [Shaded Box] IRP Site
 [Hatched Box] RCRA Site



* Standard land use designation not applicable to this figure.

RCRA and IRP Sites - Proposed Action (Privatization-in-Place)

Figure 4.3-1

The IRP sites within certain land use areas for the Proposed Action are discussed below and listed in Table 4.3-2 and shown on Figure 4.3-1.

Table 4.3-2. IRP Sites within Proposed Land Uses

Proposed Land Use	Proposed Action	Industrial Alternative	No-Action Alternative
Industrial	AT-01, FR-01, LA01, LF-01, SP-01, SP-02, SP-2A, SP-2B	AT-01, FR-01, LA01, LF-01, SP-01, SP-02, SP-2A, SP-2B	NA
Institutional (educational)	SP-02	NA	NA
Commercial (office)	SP-02	SP-02	NA
Public facilities/recreation	None	None	NA
Vacant land	LA-02, LF-02, SP-02	LA-02, LF-02, SP-02	NA
Caretaker	NA	NA	AT-01, FR-01, LA-01, LA-02, LF-01, LF-02, SP-01, SP-02, SP-2A, SP-2B,

IRP = Installation and Restoration Program

NA = not applicable (land use not associated with reuse)

An FFS has been completed for Site LF-02, but a site-specific remediation strategy has not been selected. Remediation activities conducted at Site LF-02 may delay transfer of the parcel proposed as vacant land on the north side of Ramp Creek.

All other IRP sites have been identified as NFRAP sites, and no impacts to reuse under the Proposed Action are anticipated. However, if an NFRAP recommendation is not approved and site remediation is deemed necessary, disposal and reuse of some properties at Newark AFB may be delayed or limited by IRP remediation activities (Figure 4.3-1). Additionally, based on the remediation selected, the Air Force may, where appropriate, place limits on land reuse through deed restrictions on conveyances and use restrictions on leases. The Air Force may also retain right of access to other properties to inspect monitoring wells or conduct other remedial activities. As addressed in Section 3.3.3, Installation Restoration Program Sites, the Air Force will comply with provisions of CERCLA § 120(h) prior to transfer of base property.

4.3.1.4 Storage Tanks. Under the Proposed Action both aboveground storage tanks and USTs would be reused. Installation of new USTs and aboveground storage tanks required by the new owners/operators and the

Facility 89 UST that is scheduled to remain in place would be subject to all applicable federal, state, and local regulations as discussed in Section 3.3.4. These regulations include acceptable leak detection methodologies, spill and overfill protection, cathodic protection, secondary containment for the tank systems (including the piping), and liability insurance. Existing USTs, with the exception of the Facility 89 UST, would be removed by the OL and assessed to determine the presence of contamination and remedial action taken, if necessary, in conformance with the appropriate regulations. The Air Force would pump, clean, assess, and, if necessary, take remedial action for all oil/water separators not retained for reuse.

Aboveground fuel storage tanks that would not be utilized to support the reuse activities would be purged of fumes to preclude fire hazards. Section 79.116 of the Uniform Fire Code recommends that aboveground storage tanks that are out of service for 1 year be removed from the property unless a waiver is granted by the state. The permanent closure of these tanks would be the responsibility of the Air Force and subject to the requirements of the State Fire Marshal.

USTs, aboveground storage tanks, and oil/water separators will be managed under all applicable regulations, and no significant impacts are expected.

4.3.1.5 Asbestos. No facility demolition is planned under the Proposed Action; however, renovation of existing structures with ACM may occur with reuse development. Such activities would be subject to all applicable federal, state, and local regulations to minimize potential risks to human health and the environment, therefore, precluding any significant impacts.

4.3.1.6 Pesticide Usage. Pesticide usage associated with the Proposed Action is anticipated to remain similar to the amounts used prior to closure. Pesticide management practices would be the responsibility of individual organizations and would be subject to FIFRA and state guidelines; therefore, no significant impacts would result.

4.3.1.7 Polychlorinated Biphenyls. Except for PCBs associated with enclosed systems (i.e., small capacitors and light ballasts), all federally regulated PCB equipment and PCB-contaminated equipment at Newark AFB were removed or retrofilled to below regulatory levels. Therefore, these materials would not create any impacts under the Proposed Action.

4.3.1.8 Radon. Since all radon screening samples registered radon levels below the U.S. EPA's recommended mitigation level of 4 pCi/l, there would be no impact on reuse activities.

4.3.1.9 Medical/Biohazardous Waste. Under the Proposed Action, an emergency medical service would be located at the fire station. The amount of medical/biohazardous wastes generated under the Proposed Action is anticipated to decrease from preclosure conditions, because immunization

services and physical examinations would no longer be conducted. Medical/biohazardous wastes generated under the Proposed Action would be managed by the new user in accordance with the Ohio Infectious Waste Regulations, which would preclude any significant impacts.

4.3.1.10 Radioactive Materials. The types and amounts of radioactive source materials utilized under the Proposed Action would be similar to those used prior to closure. Each organization would be responsible for management of radioactive materials under NRC and state regulations, which would include obtaining source material licenses, proper storage, and disposal (when necessary). Radioactive materials are not anticipated to impact reuse activities if managed in compliance with NRC and state regulations.

4.3.1.11 Lead-Based Paint. The Proposed Action would involve the occupation and possible renovation of facilities that contain lead-based paint. Recipients of facilities constructed prior to or during 1978 would be advised of the possible presence of lead-based paint. Renovation activities would be subject to all applicable federal, state, and local regulations; therefore, significant impacts are not expected.

4.3.1.12 Mitigation Measures. Compliance with applicable regulations would preclude the need for mitigation measures.

4.3.2 Industrial Alternative

4.3.2.1 Hazardous Materials Management. The types of hazardous materials utilized under the Industrial Alternative would include those associated with light industrial/manufacturing activities and warehouse operations (Table 4.3-3). The quantity of hazardous materials used is not anticipated to increase over the amount used during preclosure or under the Proposed Action; however, the specific industrial reuse activities and the specific chemical compositions and use rates are unknown. Each separate organization would be responsible for the management of the hazardous materials utilized by its operations. This would include EPCRA and OSHA hazardous communication requirements. Compliance by all parties with applicable regulations would preclude any significant impacts.

4.3.2.2 Hazardous Waste Management. Hazardous waste would be generated under the Industrial Alternative from the hazardous materials and processes that utilize these materials. The quantity of hazardous waste is not expected to increase over the amount generated during preclosure and under the Proposed Action. However, this would be dependent upon the types of industrial reuse and utilization of hazardous materials.

Responsibilities for each owner/operator would be similar to those described under the Proposed Action. No significant impacts from hazardous waste

Table 4.3-3. Hazardous Materials Usage by Land Use - Industrial Alternative

Land Use Zones	Operation Process	Hazardous Materials
Industrial	Activities associated with light industry and manufacturing, warehousing, corporate offices, research and development, vehicle maintenance	Aerosols, antifreeze, automotive fluids, catalysts, corrosives, degreasers, fuels, heavy metal residues, ignitables, paints, pesticides, plating solvents, POL, solvents, thinners
Commercial (office)	Offices, administration, restaurant	Cleaners, household products, paints, pesticides, thinners
Public facilities/recreation	Maintenance of existing recreational facilities, including gymnasium and other outdoor recreational facilities	Fertilizer, household products, paints, pesticides, POL, thinners
Vacant land	Open space	Pesticides

POL = petroleum, oil, and lubricants

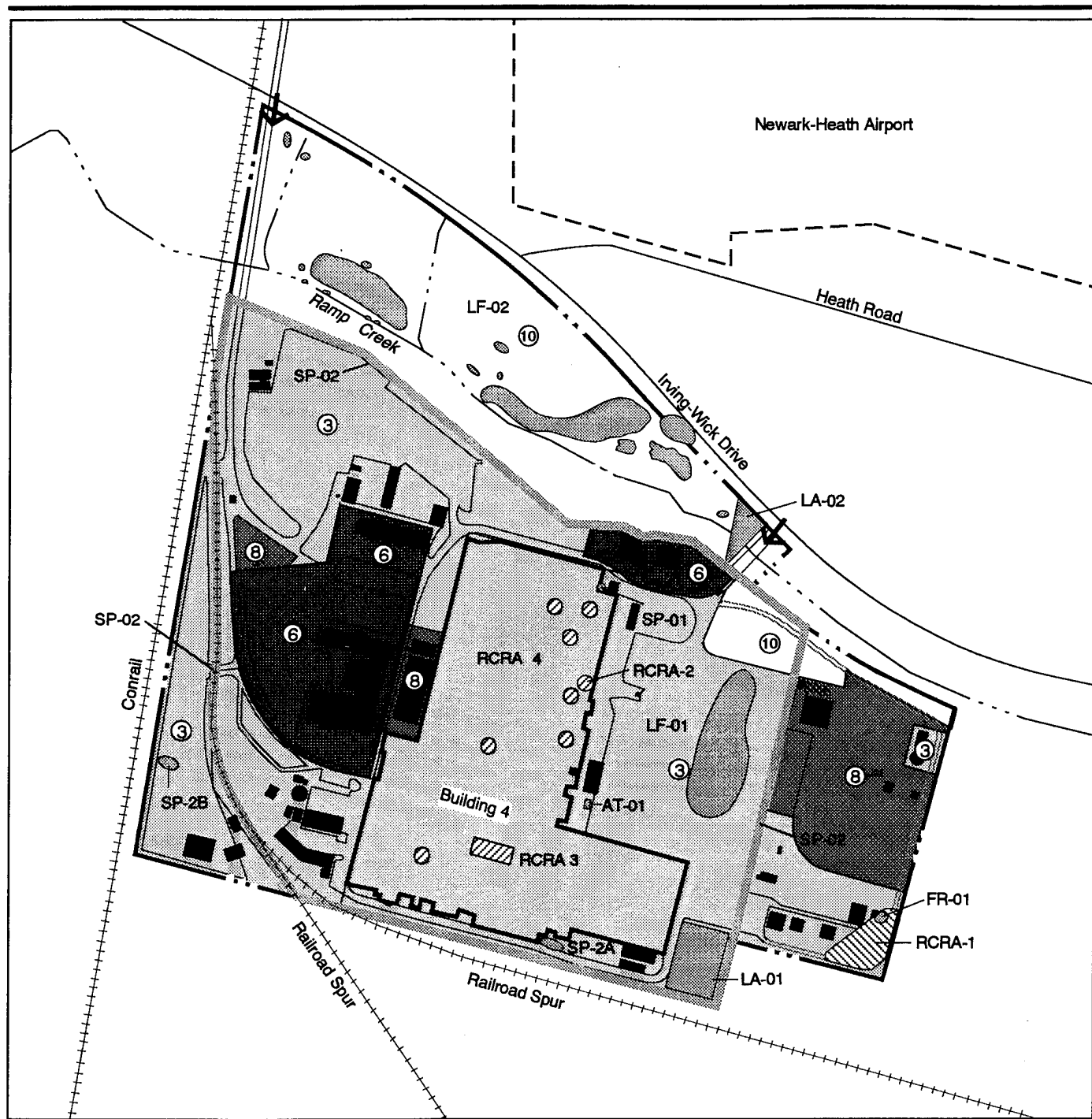
generation under this alternative are anticipated. Additionally, impacts associated with the continued remediation of the RCRA 1 site and investigations of the RCRA 2, 3, and 4 sites (Figure 4.3-2) would be similar to those discussed under the Proposed Action.

4.3.2.3 Installation Restoration Program Sites. The IRP sites within each land use area for the Industrial Alternative are identified in Figure 4.3-2 and summarized in Table 4.3-2.

The impacts to the proposed industrial, commercial, public facilities/recreation, and vacant land uses as a result of IRP activities under this alternative would be similar to those described under the Proposed Action.

4.3.2.4 Storage Tanks. Implementation of the Industrial Alternative would require the utilization of both aboveground storage tanks and USTs. The responsibilities for storage tank management under this alternative would be similar to those discussed under the Proposed Action and would include proper installation, tank testing, permitting, and closure requirements. USTs, aboveground storage tanks, and oil/water separators will be managed under all applicable regulations (see Section 3.3.4) and no significant impacts are expected.

4.3.2.5 Asbestos. No facility demolition is planned under this alternative. However, ACM may be encountered during renovation of existing buildings. Renovation activities would be subject to all applicable federal, state, and local regulations to minimize potential risks to human health and the environment, therefore, precluding any significant impacts.



EXPLANATION

- | | |
|---------------------------------|---------------------------------|
| ① Airfield * | ⑥ Commercial |
| ② Aviation Support * | ⑦ Residential * |
| ③ Industrial | ⑧ Public Facilities/ Recreation |
| ④ Institutional (Medical) * | ⑨ Agriculture * |
| ⑤ Institutional (Educational) * | ⑩ Vacant Land |



* Standard land use designation not applicable to this figure.

- | |
|-------------------------------------|
| ← Access Point |
| --- Base Boundary |
| - - - Newark-Heath Airport Boundary |
| - * - * - Fence |
| ■ IRP Site |
| ▨ RCRA Site |

RCRA and IRP Sites-Industrial Alternative

Figure 4.3-2

4.3.2.6 Pesticide Usage. Pesticide usage associated with the Industrial Alternative is anticipated to remain similar to the amounts used prior to closure as discussed under the Proposed Action. Pesticide management practices would be subject to FIFRA and state guidelines; therefore, no significant impacts would result.

4.3.2.7 Polychlorinated Biphenyls. Except for PCBs associated with enclosed systems, all federally regulated PCB equipment and PCB-contaminated equipment at Newark AFB were removed or retrofilled to below regulatory levels. Therefore, these materials would not create any impacts to proposed reuse.

4.3.2.8 Radon. Since all radon screening samples registered radon levels below the U.S. EPA's recommended mitigation level of 4 pCi/l, there would be no impact to the proposed reuse.

4.3.2.9 Medical/Biohazardous Waste. Under the Industrial Alternative, an emergency medical service would be located at the fire station. The amount of medical/biohazardous waste generated under this alternative would be less than the amount generated prior to base closure as discussed under the Proposed Action. Medical/biohazardous waste generated under this alternative would be managed by the new user in accordance with the Ohio Infectious Waste Regulations and would preclude any significant impacts.

4.3.2.10 Radioactive Materials. No radioactive materials would be utilized under the Industrial Alternative. All radioactive materials utilized at Newark AFB would be properly removed from the base prior to closure. Therefore, no impacts from these materials would occur under this alternative.

4.3.2.11 Lead-Based Paint. The management and potential impacts of lead-based paint under this alternative would be similar to those discussed under the Proposed Action.

4.3.2.12 Mitigation Measures. Compliance with applicable regulations would preclude the need for mitigation measures.

4.3.3 No-Action Alternative

4.3.3.1 Hazardous Materials Management. Under the No-Action Alternative hazardous materials would be used in preventive and regular facility maintenance and grounds maintenance. These materials would consist mostly of household products, fuels, POL, paints, thinners, and pesticides. The quantities utilized would be much less than those used prior to base closure. The OL would be responsible for hazardous materials handling training and hazardous materials communication requirements under OSHA. No significant impacts are anticipated.

4.3.3.2 Hazardous Waste Management. The amount of hazardous waste generated under the No-Action Alternative would be much less than those generated prior to base closure. With the exception of those utilized by the OL, all hazardous waste accumulation points and satellite accumulation points would be closed, and all hazardous wastes would be disposed of in coordination with the DCSC DRMO in Columbus. The small amount of hazardous waste that would be generated under the No-Action Alternative may enable the OL to operate as an exempt, small-quantity generator. The OL must comply with all RCRA and state hazardous waste regulations. Additionally, the OL would be responsible for investigation of the RCRA 2, 3, and 4 sites, as well as, the continued remediation of the RCRA 1 site. No significant impacts are anticipated.

4.3.3.3 Installation Restoration Program Sites. Ongoing sampling and any necessary RD/RA activities would be continued by the individual IRP contractors. The OL would support the utility requirements for these contractors and provide security for the IRP areas (see Table 4.3-2).

4.3.3.4 Storage Tanks. USTs remaining at Newark AFB would be removed by the OL in accordance with all applicable regulations (see Section 3.3.4). Federal and state regulations require the closure of USTs that have been out of service for 1 year or longer. Oil/water separators would be pumped, cleaned, and assessed to determine the need for remediation in accordance with all applicable regulations.

Aboveground storage tanks not utilized by the OL would be emptied and purged of fumes to preclude fire hazards. The State Fire Marshal may require the removal of some tanks. The OL would maintain aboveground storage tanks, piping, and any tank protection systems required for caretaker activities.

4.3.3.5 Asbestos. No significant impacts from asbestos under the No-Action Alternative would occur. Vacated facilities would be secured to prevent contact with ACM. Management of ACM in facilities occupied by the OL would be accomplished to preclude impacts to human health.

4.3.3.6 Pesticide Usage. Under the No-Action Alternative, the grounds would be maintained in a manner to facilitate economic resumption of use. The amount of pesticides used under the No-Action Alternative would be greatly reduced from the amount used prior to base closure. Application of pesticides would be conducted in accordance with FIFRA and state regulations to assure the proper safe handling and application of all chemicals, therefore, precluding any significant impacts.

4.3.3.7 Polychlorinated Biphenyls. All federally regulated PCB equipment and PCB-contaminated equipment at Newark AFB were removed or retrofilled to below regulatory levels. Therefore, these materials would not create any impacts under the No-Action Alternative.

4.3.3.8 Radon. Since all radon screening samples registered levels below the U.S. EPA's recommended mitigation level of 4 pCi/l, no impacts from radon are expected.

4.3.3.9 Medical/Biohazardous Waste. No medical waste would be generated under the No-Action Alternative. Additionally, all existing medical/biohazardous waste would be properly disposed of prior to base closure. Therefore, no impacts from medical/biohazardous waste would occur under the No-Action Alternative.

4.3.3.10 Radioactive Materials. All radioactive materials utilized at Newark AFB would be properly removed from the base prior to closure. Therefore, no impacts from these materials would occur under the No-Action Alternative.

4.3.3.11 Lead-Based Paint. The impacts from lead-based paint under the No-Action Alternative would not be significant. Vacated facilities would be secured by the OL to prevent entry. Occupied facilities would be maintained to prevent exposure to lead-based paint.

4.3.3.12 Mitigation Measures. Compliance with applicable regulations would preclude the need for mitigation measures.

4.4 NATURAL ENVIRONMENT

This section describes the potential effects of the reuse alternatives on the natural resources of geology and soils, water resources, air quality, biological resources, and cultural resources in the base area and surrounding region.

4.4.1 Geology and Soils

The potential effects of the reuse alternatives on the local geology and soils have been analyzed based on a review of published literature. For those aspects of physical resources that are governed by regulations (e.g., farmland protection), the project activities are considered in terms of regulatory requirements. For the majority of the components of physical resources, for which there are no specific regulatory conditions, impacts are defined by the amount of change to the natural environment caused by each alternative.

4.4.1.1 Proposed Action. Because minimal ground-disturbing operations are expected under the Proposed Action, there would be little or no impacts to geology or soils. Soils would not be exposed to erosion from excavation in the base area, and no planned building construction activity on the base would place a demand for the sand and gravel resources of the region. Ground-disturbing operations would be minimal and restricted to maintenance-type activities. No ground disturbance would result from the remodeling of the interior of the facilities on base.

No prime farmlands have been identified on Newark AFB. The state of Ohio does not recognize unique, statewide, or locally important soils. The Farmland Conversion Impact Rating Form (U.S. Department of Agriculture Form AD-1006) is included in Appendix I. Analysis of prime farmland loss is pending completion of Form AD-1006 by the District Conservationist. However, as stated on Form AD-1006, if the site does not contain any prime, unique, statewide, or local important farmland, the Farmland Protection Policy Act does not apply; therefore, further analysis of loss of prime farmland by Form AD-1006 is not necessary. Because the Farmland Protection Policy Act does not apply, no related impacts are expected.

Mitigation Measures. Because no impacts would be expected, no mitigation measures are proposed.

Erosion impacts related to drainage pattern disturbances are discussed in Section 4.4.2, Water Resources.

4.4.1.2 Industrial Alternative. Types of impacts associated with geology and soils under this alternative would be similar to those under the Proposed Action.

Ground-disturbing operations would be minimal and restricted to maintenance-type activities. No ground disturbance would result from the remodeling of interior facilities.

Mitigation Measures. Because no impacts would be expected, no mitigation measures are proposed.

4.4.1.3 No-Action Alternative. The ground-disturbing operations associated with the No-Action Alternative would be minimal and restricted to maintenance-type activities; therefore, negligible impacts to geology and soils would result from this alternative.

4.4.2 Water Resources

The alternatives were considered for potential environmental impacts to water resources. The primary criterion for identification of impacts was the comparison of project effects to regulatory requirements. The secondary criterion for impact identification was the amount of change caused by the alternatives to various aspects of water resources.

4.4.2.1 Proposed Action

Surface Water. Impacts to surface water resources from the Proposed Action are expected to be minor.

Under the Proposed Action, no additional impervious surfaces would be created by compacting soils; overlaying with asphalt, asphaltic concrete,

buildings; or altering of surface drainage patterns. Therefore, there would be no increase in surface runoff and minimal impact to surface drainage.

Floodplains. No facilities on the base lie within the designated 100-year floodplain along Ramp Creek. Under the Proposed Action, no construction is planned within the 100-year floodplain; therefore, no impacts are expected.

To ensure minimal potential for future impacts to floodplains, the Air Force would comply with appropriate requirements for the disposal of property in floodplains, as established in Executive Order 11988 and AFI 32-7064. Property transferred to other federal agencies would continue to be subject to these requirements. Disposal of lands to non-federal or private entities would require full disclosure of federal, state, and local restrictions on the use of the floodplains, in addition to other impact minimization procedures.

Wetlands. Potential wetlands would continue to receive runoff with no changes to the current drainage patterns. Therefore, no impact to the runoff supplying water to the potential wetland would result from the Proposed Action. For a detailed discussion of wetlands, see Section 4.4.5, Biological Resources.

Surface Water Quality. Storm water discharge (non-point source) from parking lots may contain fuels, oils, and other residual contaminants, which could degrade the surface water resources.

In addition, the sump pumps in Building 4 discharge groundwater that may be contaminated with CFC-113 into the storm water drain system, which empties into Ramp Creek. However, in order to conform with Title VI, Sections 608 and 610 of the CAA as amended in 1990 on required emission reductions and nonessential products and Executive Order 12843, the use of CFC-113 at Newark AFB would be phased out by the end of 1995. This would reduce the possibility of further groundwater contamination by CFC-113 and thus reduce the risk of degrading the surface water quality of Ramp Creek from the discharge of the pumps in Building 4.

Acquisition of NPDES permits by property recipients, in accordance with applicable regulations, would be required to continue operation of existing facilities after base transition. New permit requirements may include treatment facilities (i.e., oil/water separators) and may require long-term sampling and monitoring. Compliance with all NPDES permits would preclude impacts to surface water quality.

Groundwater. Under the Proposed Action, there would be no impacts to groundwater resources. Projected water consumption in the ROI under the Proposed Action would result in an increase of groundwater usage of 19 percent over preclosure conditions by 2016. Water supply requirements would be met without causing any regional drawdown of the water table.

Mitigation Measures. No mitigation measures would be required.

4.4.2.2 Industrial Alternative. Types of minor impacts associated with water resources under this alternative would be similar to those under the Proposed Action. NPDES permits would need to be acquired and complied with by the new facility owner. Projected water consumption in the ROI under the Industrial Alternative would result in a 37-percent decrease in groundwater usage over preclosure conditions by 2016. Water supply requirements under the Industrial Alternative would be met without causing any regional drawdown of the water table.

Mitigation Measures. No mitigation measures would be required.

4.4.2.3 No-Action Alternative. Because ground-disturbing activities would be minimal and restricted to maintenance-type activities, negligible impacts to water resources would result. The Air Force would comply with NPDES permits. Water requirements under the No-Action Alternative would support caretaker activities; therefore, water consumption would be much less than preclosure.

Mitigation Measures. No mitigation measures would be required.

4.4.3 Air Quality

Air quality impacts would occur during operation activities associated with the reuse alternatives for Newark AFB. Operational impacts would occur from (1) mobile sources such as commercial transport vehicles, on-base vehicles, and personal vehicles; (2) point sources, such as boilers used for heating, generators, and storage tanks; and (3) area-type emission sources, such as fugitive solvents.

The methods selected to analyze impacts depend upon the type of emission source being examined. Air quality analytical methods are summarized here and presented in detail in Appendix H. Analysis involved calculating the emissions from vehicles, point source, and area sources associated with each alternative and comparing these emissions to preclosure conditions to determine if increased emissions would cause or contribute to the exceedance of an NAAQS.

Air quality emissions are calculated through 2006 (10 years after closure). The effects of the 1990 CAA Amendments, such as electric and other low-emission vehicle ownership percentages, cannot be accurately predicted very far into the twenty-first century. The uncertainties of long-range population and traffic projections, future CAA changes, and the complex interaction of meteorology with emission inventories make emission projections beyond 10 years too speculative.

The following assumptions were made in estimating the effects of the alternatives:

- MOBILE 5.0A was used to generate emission factors for on-road vehicles. U.S. EPA-recommended default values were used whenever possible.
- Heating and power production, surface coating, fuel evaporation losses, and solvent degreasing emissions for the Proposed Action are assumed to be similar to preclosure levels (i.e., the types of sources and operations associated with reuse under the Proposed Action are assumed to remain similar to preclosure sources and operations). Existing permits are assumed to be transferred without changes in conditions to the new operators. (Refer to Appendix E for a list of applicable permits and to Appendix H for details of the emission calculations.)
- The Base Realignment and Closure Air Emission Factor Calculator (BRACFAC) developed to support air emission calculations for base realignment and closure activities (EARTH TECH, 1995) was used to calculate per employee emission factors typical of light industry and commercial facilities land uses in the ROI. BRACFAC includes emissions inventory data from the 1990 Aerometric Information Retrieval System and area and off-road mobile source information from the 1990 Interim Inventory section of the U.S. EPA's Graphical Analytical Data System. The per employee emission factors were assumed to be representative of factors which would be associated with the industrial and commercial land use areas of the Industrial Alternative.

The assumption that solvent degreasing emissions from the Proposed Action would be similar to preclosure conditions is conservative in that the U.S. EPA is in the process of finalizing the rule for halogenated solvent cleaning. In particular, the NESHAP for halogenated solvent cleaners were first proposed in the Federal Register on November 29, 1993 (58 CFR 62566). As currently proposed, the NESHAP for halogenated solvent cleaner would require batch vapor solvent cleaning machines and in-line solvent cleaning machines to meet emissions standards reflecting the application of the maximum achievable control technology (MACT) for major and area sources, and generally available control technology for area source batch cold cleaning machines. The rule would regulate emissions of the following HAP solvents at Newark AFB: methylene chloride, perchloroethylene, trichloroethylene, 1,1,1-trichloroethane, and carbon tetrachloride. The difference between final rule requirements and present solvent cleaning operating practices and controls is not known. However, it is expected that overall VOC emissions associated with compliance for all affected solvent cleaning operations would eventually be reduced.

Except for CO, new pollutant emissions in an attainment area are prevented from creating a nonattainment condition by federal PSD regulations. PSD regulations limit the allowable ambient impact of NO₂, PM₁₀, and SO₂ emissions from new or modified major stationary sources to specific increments. These increments are designed to prevent new or modified sources from causing significant degradation of an area's air quality. For PSD purposes, major stationary sources are generally defined as those sources which emit more than 100 tons per year of an attainment pollutant. PSD is not expected to apply at Newark AFB since no new major stationary sources are anticipated as part of the reuse actions. New sources such as solvent cleaning machines, storage tanks, generators, etc., which may be required as part of the reuse actions, would be subject to the applicable Rules and Regulations and permitting requirements of the Ohio EPA. However, as indicated in the assumptions above, no significant new reuse-related sources have been assumed for this analysis.

Section 176(c) of the CAA provides that a federal agency cannot support an activity in any way unless the federal agency determines that activity will conform to the purpose of a U.S. EPA-approved State Implementation Plan (SIP) for attaining and maintaining the NAAQS. This means that federally supported or funded activities will not: (1) cause or contribute to any new violation of any standard; (2) increase the frequency or severity of any existing violation of any standard; or (3) delay the timely attainment of any standard or any required interim emission reductions or other milestones in any area. In accordance with Section 176(c), the U.S. EPA promulgated the final conformity rule for general federal actions on November 30, 1993, which is codified as 40 CFR 51 Subpart W, and 40 CFR 93 Subpart B. The 40 CFR 93 Subpart B applies to federal agencies until states revise their SIPs to adopt a conformity rule at least as stringent as U.S. EPA's rule (40 CFR 51 Subpart W).

Under the existing rule, conformity determinations are not required for actions that would result in either no emissions increase or an emission increase that is clearly de minimis. Such actions are defined to include actions similar to those considered here: transfers of land, facilities, title, and real properties through an enforceable contract or lease agreement where the delivery of the deed is required to occur promptly after specific reasonable condition is met (such as meeting the remedial action requirements of CERCLA) and where the federal agency does not retain continuing authority to control emissions associated with the lands, facilities, title, or real properties. As such, it is not necessary for the Air Force to prepare a conformity determination for disposal of the property. However, federal agencies would be required to comply with the conformity regulations and, if necessary, prepare conformity determinations prior to implementing federal actions associated with reuse of the property.

The current rule defines the emission thresholds that determine whether the federal action requires a conformity determination. Federal actions with total

direct and indirect emissions that remain below the emission thresholds do not require written conformity determinations prior to implementation. The emission thresholds are based on the region's nonattainment status and regional emission levels. The specific de minimis emission thresholds for Licking County are 100 tons per year for both VOC and NO_x emissions (ozone precursors). The definitions of total direct and indirect emissions for conformity purposes distinguish emissions according to timing and location rather than the type of emission source. Direct emissions occur at the same time and place as the federal action. Indirect emissions include those that may occur later in time or at a distance from the federal action. In addition the conformity rule limits the scope of indirect emissions to those which can be quantified and are reasonably foreseeable by the federal agency at the time of analysis, and those for which the federal agency can practicably control and maintain control through its continuing program responsibility.

The only federal reuse-related action associated with the Proposed Action would be the establishment of DFAS and its operations. Direct and indirect emissions associated with DFAS would be a subset of the total reuse-related emissions summarized in Section 4.4.3.1. Potential direct and indirect emissions would consist primarily of the mobile source emissions associated with on-site operations, motor vehicle emissions from direct employee commuter trips, and stationary emissions associated with space heating. Based on the emission analyses summarized in Appendix H, the direct and indirect emissions for the DFAS activities described in Chapter 2 would remain below the de minimis emission thresholds and, therefore, would not be subject to a written conformity determination.

4.4.3.1 Proposed Action

Construction. No air quality impacts are associated with construction since no land areas would be disturbed by construction of facilities, infrastructure improvements, or other construction activities under the Proposed Action.

Operation. A summary of reuse-related operation emissions for the Proposed Action is presented in Table 4.4-1 for 2001 and 2006. Reuse-related emissions are comprised of emissions from both direct and indirect sources associated with reuse of the base. The direct sources include such on-base sources as boilers, generators, degreasers, storage tanks, solvent use, paint use, and on-base vehicle miles traveled. Indirect sources are the vehicle miles traveled by employees commuting to and from the base. In addition to the calculated indirect mobile source emissions, other indirect source emissions would be added to the county inventory by new population in-migrating in response to reuse activities. However, for all alternatives, the in-migrating population is a small portion of the existing county population (less than 0.07 percent). The amount of nonmobile indirect source emissions attributable to this new population would be negligible in comparison to the existing county emissions inventory. Estimates for all

Table 4.4-1. Emissions Associated with the Proposed Action (tons/year)

Pollutant	Licking County	Newark AFB Preclosure	Reuse-Related Emissions	
	1990	1992	2001	2006
NO _x	9,536	39.31	33.96	35.60
CO	43,348	228.78	167.24	163.23
SO ₂	543	0.04	0.04	0.04
PM ₁₀	476	0.66	0.66	0.66
VOC	7,894	35.64	30.40	31.27

CO = carbon monoxide

NO_x = nitrogen oxides

PM₁₀ = particulate matter equal to or less than 10 microns in diameter

SO₂ = sulfur dioxide

VOC = volatile organic compound

emissions were calculated using the methodologies as described in Appendix H.

Potential impacts to air quality as a result of operational emissions from the Proposed Action were evaluated in terms of two spatial scales: regional and local. The regional-scale analysis considered the potential for total reuse-related emissions to cause or increase the severity of nonattainment status of the region for any pollutant as indicated by large increases in the regional pollutant inventories (NO₂, CO, SO₂, PM₁₀, and VOC emissions). The local-scale analysis evaluated the potential for emissions to cause or contribute to an exceedance of any NAAQS in the immediate vicinity of the base. If one of these conditions were to occur, the Proposed Action would have an adverse impact on air quality.

Regional Scale. Emissions of criteria pollutants from the Proposed Action are greater than emissions that would be associated with closure of the base. However, the emissions are less than or equal to those that occurred under preclosure conditions. It is therefore expected that the Proposed Action would not cause the region to become nonattainment for any criteria pollutant. The following paragraphs summarize the results of the regional-scale impact analysis on a pollutant-by pollutant basis.

Ozone Precursors. Table 4.4-1 provides a comparison of emission estimates for Licking County (preclosure), Newark AFB (preclosure), and the Proposed Action at 5- and 10-year increments after closure (i.e., 2001 and 2006). Table 4.4-1 also shows that NO_x and VOC emissions would remain below preclosure levels throughout the 10-year analysis period. By 2006, the total reuse-related NO_x and VOC emissions would be approximately 90 percent of the preclosure emissions at Newark AFB. The potential for ozone formation would be reduced in the region around Newark AFB.

NO₂, CO, SO₂, and PM₁₀. Table 4.4-1 provides a means to compare emissions from the Proposed Action to 1990 Licking County emissions and 1992 base preclosure emission levels. All NO_x emissions in Table 4.4-1 are assumed to convert to NO₂ emissions on a regional basis. Direct reuse-related NO₂, CO, SO₂, and PM₁₀ emissions would be less than or equal to preclosure emission levels. Emissions of the primary pollutants from the Proposed Action would therefore not affect maintenance of the attainment status of the respective pollutant standards.

Local Scale. Reuse-related emissions associated with the Proposed Action would be less than or equal to emissions prior to preclosure. In addition, ambient background concentrations of NO_x and CO would be reduced from preclosure conditions primarily due to more stringent tailpipe exhaust standards which govern emissions from later model vehicles. Background concentrations of VOC would also be reduced in response to more stringent tailpipe exhaust standards and fuel volatility standards. Because of these reductions in reuse-related emissions and decreases in ambient background concentrations, local air quality impacts would be expected to be similar to or less than preclosure conditions and would not exceed any NAAQS.

Mitigation Measures. Project impacts associated with the Proposed Action would not be significant; mitigation of impacts would, therefore, not be required.

4.4.3.2 Industrial Alternative

Construction. No air quality impacts are associated with construction since no land areas would be disturbed by construction of facilities, infrastructure improvements, or other construction activities under the Industrial Alternative.

Operation. Table 4.4-2 summarizes the results of the operation emission calculations associated with the Industrial Alternative for 2001 and 2006.

Regional Scale. For evaluation of regional-scale impacts from the Industrial Alternative, the effects that reuse-related air emissions would have on the air quality attainment status of Licking County were considered. Even though emissions of NO_x, VOC, and SO₂ would increase over preclosure conditions, the increase in emissions would not jeopardize the attainment status of any criteria pollutant. The following paragraphs summarize the results of the regional-scale impact analysis on a pollutant-by-pollutant basis.

Ozone Precursors. Table 4.4-2 shows that total reuse-related emissions of NO_x and VOC would increase in 2006 by 168 tons per year (0.05 ton per day) and 89 tons per year (0.2 ton per day) over preclosure conditions, respectively. Most of these emissions (195 of the 207 tons per year of NO_x and 118 tons of the 125 tons per year of VOC) are caused by sources

Table 4.4-2. Emissions Associated with the Industrial Alternative (tons/year)

Pollutant	Licking County	Newark AFB Preclosure	Reuse-Related Emissions	
	1990	1992	2001	2006
NO _x	9,536	39.31	104.08	206.97
CO	43,348	228.78	49.97	88.02
SO ₂	543	0.04	6.18	12.35
PM ₁₀	476	0.66	Negl.	Negl.
VOC	7,894	35.64	62.83	124.79

CO = carbon monoxide

Negl. = negligible

NO_x = nitrogen oxides

PM₁₀ = particulate mater equal to or less than 10 microns in diameter

SO₂ = sulfur dioxide

VOC = volatile organic compound

associated with the industrial land use (see Appendix H). The estimates of future reuse-related emissions are conservative in nature because they are based on emissions from equipment used in 1990 throughout the entire ROI. Newer, less polluting equipment would be used for industrial redevelopment of the base. In addition, these new sources would be regulated under the Ohio EPA permitting regulations and would be required to install best available emission control technology and/or offset significant emissions increases.

The 1990 CAA Amendments require the U.S. EPA to finalize NESHAP to affect a reduction in risk to human health from HAPs. Of the 189 U.S. EPA-listed HAPs, approximately 170 can also be considered VOCs. Application of MACT and generally available control technology proposed as part of the final NESHAP would result in a reduction of future VOC emissions. Furthermore, as part of the Request of the Columbus Metropolitan Nonattainment Area for Redesignation to Attainment Status of the National Ambient Air Quality Standard for Ozone submitted to the U.S. EPA by the Mid-Ohio Regional Planning Commission (1993), it was demonstrated that VOC emissions from all sources in the Franklin, Delaware, and Licking County Management Area (FDLCMA) would decrease by more than 35 tons per day between 1988 (the last year of a violation of the ozone NAAQS) and 2006. The redesignation request concluded that this substantial decrease in VOC emissions would occur and the NAAQS could be maintained without the implementation of any new controls. The redesignation request further concluded that NO_x emission reductions were not required to maintain the ozone standard since "The FDLCMA has been in continuous attainment of the NAAQS since 1989 without any NO_x control requirements. Further, VOC emissions are already well below the level needed to maintain the NAAQS and are projected to continue a steady decline through at least 2006. Finally, Title IV of the CAA (Acid Deposition Control) will require significant NO_x reductions in the area over the next 10 years in any event,

even without additional controls under Title I (Air Pollution Prevention and Control)." The small increase in NO_x reuse-related emissions would be offset by the decrease in VOC expected throughout the region and would not be sufficient to jeopardize the ozone attainment planning efforts of the region.

NO₂, CO, SO₂, and PM₁₀. Reuse-related emissions of NO₂ would increase by 168 tons per year over preclosure conditions by 2006. This increase represents approximately 2 percent of the 1990 Licking County NO₂ emissions. However, more stringent tailpipe exhaust standards and Title IV requirements to reduce acid deposition will cause an overall reduction in regional NO₂ emissions. The reuse-related increase in NO₂ emissions would, therefore, not be sufficient to affect the NO₂ attainment status of the region. Emissions of SO₂ would increase by 12.3 tons per year over preclosure conditions. When compared to the Licking County SO₂ emissions inventory, the increase is approximately 2 percent of baseline conditions. However, Title IV requirements will reduce SO₂ emissions in the region and the 2-percent reuse-related increase would not adversely affect the SO₂ attainment status of the region. Emissions of reuse-related CO would decrease from preclosure levels and emissions of PM₁₀ would be negligible. Reuse-related emissions of CO and PM₁₀ would not produce any adverse air quality impacts or affect the current attainment status.

Local Scale. Reuse-related emissions of CO and PM₁₀ associated with the Industrial Alternative would be less than or approximately equal to the CO and PM₁₀ emissions that occurred under preclosure. In 2006, the increased emissions of NO₂ and SO₂ would be 2 percent of the baseline Licking County emissions, respectively. In addition, the ambient concentrations of NO₂ and SO₂ are currently less than 25 percent and 45 percent of the NAAQS, respectively (see Table 3.4-2). With the phase-in of more stringent tailpipe exhaust standards for later model automobiles and the implementation of reduced fuel volatility standards being promulgated by U.S. EPA, the ambient background concentration of CO, NO₂, and VOC would be reduced from preclosure conditions. In addition, Title IV requirements to reduce acid rain would reduce ambient background concentrations of NO₂ and SO₂. The local air quality impacts of reuse-related emissions from the Industrial Alternative would be similar to those that occurred under preclosure conditions, and would have no adverse impact on local air quality because: (1) emissions of CO and PM₁₀ are less than or approximately equal to preclosure conditions; (2) increased NO₂ and SO₂ emissions are small fractions of the baseline Licking County inventories for NO₂ and SO₂; (3) the ambient concentrations of NO₂ and SO₂ are currently less than 25 percent and 45 percent of the NAAQS; and (4) ambient concentrations of CO, NO₂, SO₂, and VOC are expected to decrease from current levels.

Mitigation Measures. Project impacts associated with the Industrial Alternative would not be adverse. Mitigation of impacts would, therefore, not be required.

4.4.3.3 No-Action Alternative. Due to the low level of emissions produced from No-Action Alternative activities, no adverse air quality impacts would occur.

4.4.4 Biological Resources

Under the Proposed Action and alternatives only existing facilities would be utilized; no new construction or ground-disturbing activities are planned. Building modifications would take place within existing buildings. Consequently, implementation of the Proposed Action and alternatives (including the No-Action Alternative) is not expected to affect the biological resources of Newark AFB. Potential impacts from reuse activities are described below for each alternative.

4.4.4.1 Proposed Action. No development is proposed under the Proposed Action. No land areas would be disturbed by construction of facilities, infrastructure improvements, or other operational activities under this reuse alternative. Existing building space and associated existing development (parking lots, roads, and landscaped areas) would be used by future property recipients.

Vegetation. The Proposed Action would not impact vegetation on Newark AFB. Maintenance activities for the landscaped and grassland areas would be similar to preclosure conditions.

Wildlife. Direct impacts to wildlife may result from increased vehicular traffic. The riparian corridor provides an avenue of movement for many terrestrial species; it is possible that these species may wander across the two access roads provided by Irving-Wick Drive. However, potential impacts to wildlife populations would be negligible.

Threatened and Endangered Species. None of the sensitive species discussed in Section 3.4.4.3 were observed in the 1994 ODNR survey, although the potential exists for their occurrence. Because there would be no facility construction or infrastructure improvements, the USFWS has concurred with the finding that no federal endangered, threatened, proposed, or candidate species would be adversely affected by the disposal and reuse of Newark AFB. If portions of the property are transferred to another federal agency, the receiving agency would be required to conduct additional consultation under Section 7 of the Endangered Species Act prior to committing resources to any project that could adversely impact threatened or endangered species.

Sensitive Habitats. There are no construction or other ground disturbance activities planned under the Proposed Action; therefore, no impacts are anticipated. The 1 acre of potential wetlands at Newark AFB is in an area designated as vacant land, that protects the runway approach to the Newark-Heath Airport.

Executive Order 11990 states that, when federally owned wetlands or portions of wetlands are proposed for disposal to non-federal or private parties, the Air Force shall (a) reference in the conveyance those uses that are restricted under federal, state, or local wetland regulations; and (b) attach other appropriate restrictions to the uses of properties by recipients (except where prohibited by law); or (c) withhold such properties from disposal.

If the Proposed Action were implemented, the Air Force would reference in conveyance documents those uses that are restricted under federal, state, and local wetland regulations. This reference would be made in accordance with the provisions of Section 4 of Executive Order 11990.

Mitigation Measures. There would be no impacts to biological resources from implementation of the Proposed Action; therefore, no mitigation measures would be required.

4.4.4.2 Industrial Alternative. No development is proposed under the Industrial Alternative. No land areas would be disturbed by the construction of facilities, infrastructure improvements, or other operational activities under this reuse alternative. Existing building space and associated existing development (parking lots, roads, and landscaped areas) would be used by future property recipients. Projected employment by 2016 under this alternative would be less than under the Proposed Action. Because of this, impacts from vehicular traffic and human presence would be slightly less than for the Proposed Action.

Vegetation. The Industrial Alternative would not impact vegetation on Newark AFB. Limited maintenance activities for the landscaped and grassland areas would be similar to preclosure conditions.

Wildlife. Potential impacts to wildlife on Newark AFB from this alternative would be similar to the Proposed Action.

Threatened and Endangered Species. Potential impacts to threatened and endangered species under the Industrial Alternative would be similar to those described for the Proposed Action.

Sensitive Habitats. Potential impacts to sensitive habitats would be the same as those under the Proposed Action.

Mitigation Measures. Mitigation measures for this alternative would not be required.

4.4.4.3 No-Action Alternative. Under the No-Action Alternative, the base would be preserved. Caretaker activities would consist of base resource protection; grounds maintenance; existing utilities operations, as necessary;

and building care. No impacts would occur from the preservation of the base under this alternative.

Vegetation. The No-Action Alternative would not impact vegetation on Newark AFB. Limited maintenance activities for the landscaped and grassland areas would be provided to prevent fire, health, and safety hazards.

Wildlife. Impacts to wildlife under this alternative would be negligible. A decrease in human activity at the base could improve habitat value.

Threatened and Endangered Species. No impacts to threatened and endangered species are expected under the No-Action Alternative.

Sensitive Habitats. Potential impacts to sensitive habitats would be the same as those under the Proposed Action.

Mitigation Measures. Mitigation measures for this alternative would not be required.

4.4.5 Cultural Resources

Potential impacts were assessed by (1) identifying types and possible locations of reuse activities that could directly or indirectly affect cultural resources, and (2) identifying the nature and potential significance of cultural resources in potentially affected areas. Pursuant to the NHPA, consultation as directed by the Section 106 review process has been initiated with the Ohio SHPO.

Historic properties, under 36 CFR 800, are defined as any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the NRHP. This term includes, for the purposes of these regulations, artifacts, records, and remains that are related to and located within such properties. The term "eligible for inclusion in the NRHP" includes both properties formally determined as such by the Secretary of the Interior and all other properties that meet NRHP listing criteria. Therefore, as such, all sites or structures considered eligible for inclusion, whether or not they are actually nominated to the NRHP, are afforded the same regulatory consideration as nominated historic properties.

As a federal agency, the Air Force is responsible for identifying any cultural resources at Newark AFB. This identification process includes not only field surveys and recording of cultural resources, but also evaluations to develop determinations of significance in terms of NRHP criteria. NRHP criteria and related qualities of significance are discussed in Appendix D, Methods of Analysis. Completion of this process results in a listing of historic properties subject to federal regulations regarding the treatment of cultural resources.

As described in Section 3.4.5, the identification of cultural resources as defined by the NHPA has been completed at Newark AFB, although consultation with the SHPO is still ongoing. No archaeological resources were identified within the boundaries of the base.

The evaluation of the Cold War-era facilities resulted in the identification of Building 4, the primary industrial complex for the base, as the only exceptionally significant resource on the base. SHPO concurrence with this finding is still pending. A formal determination of eligibility will be developed by the Air Force once SHPO concurrence is received on the recommendations presented in the Historic Building Inventory and Evaluation (U.S. Air Force, 1995). For purposes of analysis, it is assumed that Building 4 is the only historic property located within the project area.

4.4.5.1 Proposed Action. Under the Proposed Action, Building 4 would be conveyed to a non-federal party as part of a privatization-in-place of the current base activities. The guidance system repair and maintenance activities based in Building 4 would be contracted to a non-federal entity. The METCAL activities would remain under DOD management, with DOD leasing back the METCAL laboratory housed in the lower levels of Building 4.

The planned usage of Building 4 constitutes a continued use in kind. No renovations, expansions, or modifications (beyond normal maintenance requirements) are anticipated. However, regulations for implementing Section 106 of the NHPA indicate that the conveyance of historic properties without adequate measures to ensure preservation is procedurally considered to be an adverse impact, thereby ensuring full regulatory consideration in federal planning and execution. All historic properties on Newark AFB could be impacted by conveyance. Through application of the mitigation measures described below, effects on these structures would be reduced to a nonadverse level.

Although no archaeological resources have been identified on base, SHPO expressed concern over suspected remnants of the Newark Earthworks in close proximity to the base boundary. No proposed activity would affect these resources, if present. Therefore the disposal and reuse of Newark AFB would have no effect on archaeological resources.

Mitigation Measures. If facilities eligible for inclusion in the NRHP are conveyed to a non-federal entity (state, local, or private) and an adverse effect is identified, placement of preservation covenants on the lease or disposal document could reduce potential impacts to a nonadverse level. Any minor development within the designated parcels that could impact historic properties would, therefore, fall under the requirements of Section 106 of the NHPA. Management options available to subsequent recipients would include preservation in place and data recovery.

Data recovery may also be considered a viable mitigation option for the treatment of Building 4 on Newark AFB. Data recovery of historic structures generally entails the compilation of documentation (e.g., photographs, measured drawings), most often to Historic American Building Survey/ Historic American Engineering Record standards. The implementation of data recovery would ensure that important characteristics of the historic properties are retained.

The Air Force would consult with the SHPO and the Advisory Council on Historic Preservation to implement an appropriate mitigation approach, if one is required. Consultation would proceed in compliance with Section 106 of the NHPA and its implementing regulations (36 CFR 800). A Memorandum of Agreement may be developed to document the accepted mitigation. A Memorandum of Agreement for cultural resources must be coordinated with, at a minimum, the SHPO, the Advisory Council of Historic Preservation, and the Air Force. Other parties may be included as appropriate.

4.4.5.2 Industrial Alternative. This alternative proposes the use of Building 4 for manufacturing and associated warehousing within the same parcel. Industrial uses would be complemented by commercial, public facilities/recreation, and vacant land. The primary use could include light manufacturing, such as assembly of computer components or furniture. No building demolition is proposed. No land areas would be disturbed by construction of buildings, infrastructure improvements, or other operational activities under the Industrial Alternative.

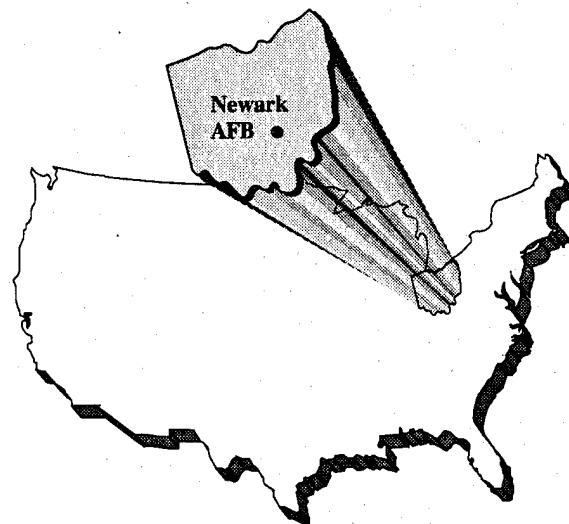
Impacts associated with the conveyance of historic properties, as described for the Proposed Action, would be applicable to the Industrial Alternative. Application of mitigation measures can reduce the potential impact to a nonadverse level for the alternative.

Mitigation Measures. Appropriate mitigation measures would be the same as those outlined for the Proposed Action.

4.4.5.3 No-Action Alternative. Implementation of this alternative would result in the property being placed in caretaker status. All current activities would be transferred to other installations and/or facilities, and the property would be put to no further use. No effect on historic properties would result from implementation of the No-Action Alternative because Newark AFB would remain under federal jurisdiction. The OL must ensure that a proper level of maintenance is accomplished to prevent deterioration of historic properties.

As with the Proposed Action, implementation of the No-Action Alternative would constitute no effect on archaeological resources.

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CHAPTER 5

CONSULTATION AND COORDINATION

5.0 CONSULTATION AND COORDINATION

The federal, state, and local agencies and private agencies/organizations that were contacted during the course of preparing this EA are listed below.

FEDERAL AGENCIES

Defense Finance and Accounting Service
Environmental Protection Agency (Region V)
Federal Aviation Administration
United States Department of Agriculture, Natural Resources Conservation Service
United States Department of the Interior, Bureau of Mines
United States Department of the Interior, Fish and Wildlife Service

STATE AGENCIES

Ohio Bureau of Employment Services
Ohio Department of Development
Ohio Department of Natural Resources, Division of Natural Areas and Preserves
Ohio Environmental Protection Agency, Division of Air Quality Control
Ohio Environmental Protection Agency, Division of Emergency and Remedial Response
Ohio Environmental Protection Agency, Division of Solid and Hazardous Waste Management
Ohio Historic Preservation Office

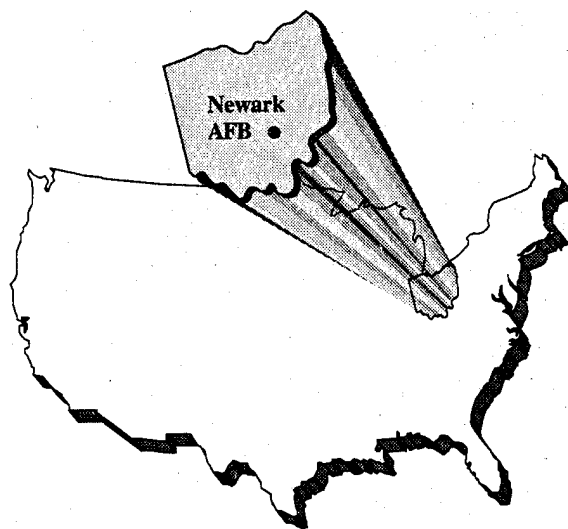
LOCAL/REGIONAL AGENCIES

City of Heath
City of Newark
Franklin/Licking County Regional Air Pollution Control Agency
Licking County Area Transportation
Licking County Planning Commission
Newark-Heath Air Force Base Reuse Commission

PRIVATE ORGANIZATIONS AND INDIVIDUALS

City of Newark Water and Wastewater Department
Coshocton, Fairfield, Licking, Perry Solid Waste District
National Gas and Oil Company
Ohio Power Company

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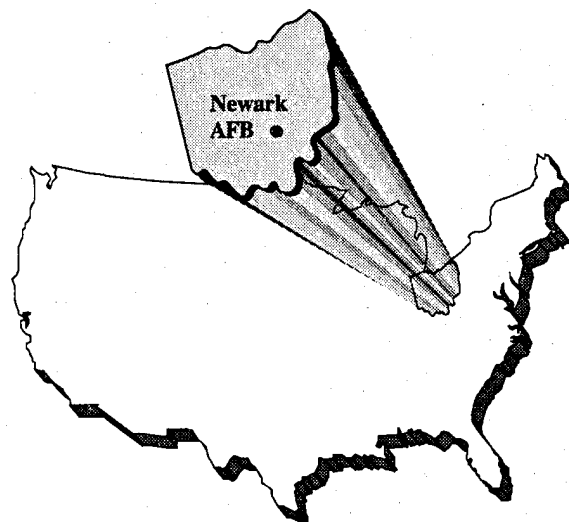
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CHAPTER 7 REFERENCES

7.0 REFERENCES

- Advisory Council on Historic Preservation, 1991. Balancing Historic Preservation Needs with the Operation of Highly Technical or Scientific Facilities, Washington, DC.
- Battelle, 1993. Final Solid Waste Study for Newark Air Force Base, Solid Waste Management Plan.
- Britton, N.L. and Brown, A., 1970. An Illustrated Flora of the Northern United States and Canada, 2nd ed. revised, Dover Publications, Inc., New York.
- Burt, W.H. and Grossenheider, R.P., 1952. A Field Guide to the Mammals of America North of Mexico, 3rd ed., Houghton Mifflin Company, Boston.
- Dames & Moore, Inc., 1984. Investigation of Proffered Donation of 13.39 Acres to Newark Air Force Station.
- Dames & Moore, Inc., 1988a. Installation Restoration Program, Newark Air Force Base, Preliminary Assessment for the LA-1, Kaiser Land Acquisition Site, December.
- Dames & Moore, Inc., 1988b. Installation Restoration Program, Newark Air Force Base, Preliminary Assessment for the LA-2, Orr Land Acquisition Site, December.
- Dames & Moore, Inc., 1989a. Installation Restoration Program, Newark Air Force Base, Decision Document, LA-1, Kaiser Land Acquisition Site, July.
- Dames & Moore, Inc., 1989b. Installation Restoration Program, Newark Air Force Base, Decision Document, LA-2, Orr Land Acquisition Site, July.
- Dames & Moore, Inc., 1989c. Installation Restoration Program, Newark Air Force Base, Ohio, Site Inspection, July.
- Dames & Moore, Inc., 1991. Installation Restoration Program, Newark Air Force Base, Ohio, Remedial Investigation Report, Vol. I, June.
- Dames & Moore, Inc., 1993. Final Focused Feasibility Study, Site AC-13, Newark Air Force Base, December.
- Dove, G.D., 1960. Water Resources of Licking County, Ohio, State of Ohio Department of Natural Resources, Bulletin 36.
- EARTH TECH, 1995. BRAC Air Emission Factor Calculator, Version 1.2.
- Engler, G., 1993. Personal communication with Mr. Gary Engler of the Ohio EPA requesting Air Quality Monitoring Data, December.
- ENSR Operations, 1990. PCB Inventory, March.

- Environmental Laboratory, 1987. Corps of Engineers Wetlands Delineation Manual, Technical Report Y-87-1, U.S. Army Engineer Waterways Experiment Station, Vicksburg, Mississippi.
- Forsyth, J.L., 1965. Glacial Map of Licking County, Ohio, State of Ohio, Department of Natural Resources, Division of Geologic Survey, Bulletin 59.
- Galson Technical Services, 1989. Basewide Asbestos Survey Results and Recommendations, Newark Air Force Base, Ohio, Final Report, January.
- Green, Paul, 1993. Treatment of Cold War Historic Properties for U.S. Air Force Installations, Washington DC, HQ USAF/CE, June.
- Heath, 1992. Zoning Ordinance, City of Heath.
- Hickman, ed., 1993. The Jepson Manual.
- Horton, 1961. The Most Advanced Standards Lab in the World, ISA Journal, December.
- Institute of Transportation Engineers, 1991. Trip Generation and Informational Report (5th ed.).
- International Conference of Building Officials, 1991. Uniform Building Code.
- Jagielski, K.D., 1994. Calculation Methods for Criteria Air Pollutant Emission Inventories, AL/OE-TR-1994, USAF Occupational and Environmental Health Directorate, Brooks Air Force Base, Texas.
- Licking County Planning Commission, 1976. Optimum Land Use Policy and Plan, Licking County, OH, August.
- McClane, A.J., 1974. Field Guide to Freshwater Fishes of North America, Holt, Rinehart and Winston, New York, NY.
- Mid-Ohio Regional Planning Commission, 1993. Request of the Columbus Metropolitan Nonattainment Area for Redesignation to Attainment Status of the National Ambient Air Quality Standard for Ozone, September.
- National Geographic Society, 1987. Field Guide to the Birds of North America, National Geographic Society, Washington, DC.
- National Register of Historic Places, 1991. Guidelines for Evaluating and Nominating Properties that Have Achieved Significance within the Past Fifty Years, Bulletin No. 22.
- Newark Chamber of Commerce, 1993. Licking County Demographics.
- NRHP, see National Register of Historic Places.

- Office of Environmental Management, 1993. Interim Guidance: Treatment of Cold War Historic Properties for U.S. Air Force Installations, Resource Protection Branch of the Office of Environmental Management, Wright Patterson Air Force Base, Ohio.
- Ohio Bureau of Employment Services, 1993. Labor Market Projections, SDA 15 1988-2000.
- Ohio Bureau of Employment Services, 1995. Monthly Employment by Industrial Group, 1992.
- Ohio Department of Development, 1993. Projected Population: County Totals, Ohio Data Users Center, Administration Division.
- Ohio Department of Natural Resources, 1982. Groundwater Resources of Licking County, Ohio.
- Ohio Department of Natural Resources, 1990. Breeding Bird Atlas and other written correspondence with Patricia D. Jones, Division of Natural Areas and Preserves, Columbus, Ohio, July.
- Ohio Department of Natural Resources, 1994. Floristic and Faunal Survey of the Newark Air Force Base, Licking County, Ohio, October.
- Ohio EPA, see Ohio Environmental Protection Agency.
- Peterson, R., 1980. Eastern Birds (4th ed.).
- Pike, D., 1994. Personal communication with Dennis Pike, DFAS, Washington DC; discussion of DFAS alternative potential at Newark Air Force Station.
- Radian Corporation, 1985. Installation Restoration Program, Newark Air Force Station, Ohio, Phase I - Records Search, April.
- Reed, P.B., Jr., 1988. National List of Plant Species that Occur in Wetlands: 1988 National Summary, Biological Report 88(24) Fish and Wildlife Service in Cooperation with the National and Regional Interagency Review Panel.
- Rocque, A., and Marple, M., 1970. Ohio Fossils, State of Ohio, Department of Natural Resources, Division of Geologic Survey, Bulletin 54.
- Sherfy, M. and W.R. Luce, 1991. National Register Bulletin 22: Guidelines for Evaluating and Nominating Properties that Have Achieved Significance within the Last Fifty Years, U.S. Department of the Interior, National Park Service, Washington, DC.
- Terradex, 1988. Radon Monitoring Program Results, May.
- Transportation Research Board, 1985. Highway Capacity Manual, National Research Council Special Report 209, National Academy of Sciences, Washington, DC.
- Union Township, 1990. Union Township Zoning Resolution (Amended through September 4, 1990), September.

- U.S. Air Force, 1967. Letters to AFLC (Radioisotope Committee), Radioactive Light Sources, Newark Air Force Station, January 2 and April 19.
- U.S. Air Force, 1972. Plutonium Letter Report, Newark Air Force Station, August 24.
- U.S. Air Force, 1976. Application for termination of license No. 34-09220-03 Newark Air Force Station.
- U.S. Air Force, 1976-1992. Radioactive Material Receiving and Disposition Records.
- U.S. Air Force, 1980. Newark Air Force Station Inventory Listing (radioactive material).
- U.S. Air Force, 1987a. Compliance Inspection Radioactive Material (Biomedical), Newark Air Force Base, January 6.
- U.S. Air Force, 1987b. Finding Work Sheet AFISC Form 283 for AGMC Newark Air Force Base Radioactive Material Inventory, Storage and Waste Management.
- U.S. Air Force, 1987c. Finding Work Sheets, Small Source Radioactive Permit 34-60025-3AFP, and Radioactive Material Inventory, Storage and Waste Management, Newark Air Force Base, September.
- U.S. Air Force, 1988a. Economic Resource Impact Statement, Aerospace Guidance and Metrology Center, Newark Air Force Base, Ohio.
- U.S. Air Force, 1988b. Medical Service Control of Radiological Health Hazards, AGMC Supplement 1, AFR 160-132, Newark Air Force Base, August 31.
- U.S. Air Force, 1988c. 3M Static Eliminator Device Source Inventory, Newark Air Force Base.
- U.S. Air Force, 1989a. Aerospace Medicine Calibration and Control of Radioactive Material, ML Operating Instruction 161-16-2 Directorate of Metrology, Newark Air Force Base, January 31.
- U.S. Air Force, 1989b. Aerospace Medicine ML Operating Instruction 161-16-2, AFLC, Newark Air Force Base, January 31.
- U.S. Air Force, 1989c. Asbestos Management, Newark Air Force Base, August.
- U.S. Air Force, 1989d. Economic Resource Impact Statement, Aerospace Guidance and Metrology Center, Newark Air Force Base, Ohio.
- U.S. Air Force, 1989e. Finding Work Sheet, General Radioactive Material Permit No. 34-09220-IAFP and Small Source Radioactive Permit No. 34-30149-IAFP, November 13-15.
- U.S. Air Force, 1989f. Phase I Archaeological Survey of the Newark Air Force Base, Licking County, OH, by James L. Murphy, submitted to Woolpert Consultants, Inc., December.

- U.S. Air Force, 1989g. Self-Inspection Program, AFLC Newark Air Force Base, AGMC Regulation 123-2, October 31.
- U.S. Air Force, 1990a. Aerospace Medicine Control of Radioactive Material, ML Operating Instruction 161-16-1 Directorate of Metrology, Newark Air Force Base, January 11.
- U.S. Air Force, 1990b. Economic Resource Impact Statement, Aerospace Guidance and Metrology Center, Newark Air Force Base, Ohio.
- U.S. Air Force, 1991. Economic Resource Impact Statement, Aerospace Guidance and Metrology Center, Newark Air Force Base, Ohio.
- U.S. Air Force, 1992a. Asbestos Operations Plan Newark AFB.
- U.S. Air Force, 1992b. Economic Resource Impact Statement, Aerospace Guidance and Metrology Center, Newark Air Force Base, Ohio.
- U.S. Air Force, 1992c. Finding Work Sheets, AGMC/MA Newark Air Force Base Small Source Radioactive Material Permit No. 34-30285-IAFP and 34-30113-IAFP.
- U.S. Air Force, 1992d. Finding Work Sheet, Radioactive Material Control, May 11-13.
- U.S. Air Force, 1992e. From "Missile Base" to "Gold Watch": An Illustrated History of the Aerospace Guidance and Metrology Center and Newark Air Force Base.
- U.S. Air Force, 1992f. Hazardous Waste Management -- Environmental Planning (Newark Air Force Base Regulation), March.
- U.S. Air Force, 1992g. Natural Resources Plan, Newark Air Force Base, Ohio, September.
- U.S. Air Force, 1992h. Newark Air Force Base Radiation Safety Program, June.
- U.S. Air Force, 1992i. Pollution Prevention Management Plan for Newark Air Force Base, May.
- U.S. Air Force, 1992j. Spill Prevention and Response Plan for Newark Air Force Base, Ohio, November.
- U.S. Air Force, 1993a. Comprehensive Plan TAB Series Map, Base Sites of Contamination.
- U.S. Air Force, 1993b. Database List Leased Facilities File Report, Newark AFB, May
- U.S. Air Force, 1993c. Hazardous Waste Management Plan for Newark Air Force Base, Ohio, in Accordance with Air Force Regulation 19-11, August.
- U.S. Air Force, 1993d. Inventory of Nuclear Sources, Newark Air Force Base.
- U.S. Air Force, 1993e. Newark Air Force Base Satellite Accumulation Point Listing, December.

- U.S. Air Force, 1993f. Personal communication with Rob Lange regarding current pesticide inventory, December.
- U.S. Air Force, 1993g. Real Property Inventory Change Report, Newark Air Force Base, December.
- U.S. Air Force, 1994a. BRAC Cleanup Plan (BCP) Newark Air Force Base, Ohio, April.
- U.S. Air Force, 1994b. Lead-Based Paint Management Plan, Newark Air Force Base.
- U.S. Air Force, 1995. Historic Building Inventory and Evaluation, Newark Air Force Base, Licking County, Ohio.
- U.S. Air Force, n.d. Quality Assurance Program for Sealed Sources, sample.
- U.S. Department of Agriculture, 1992. Soil Survey of Licking County, Ohio, May.
- U.S. Environmental Protection Agency, 1971. Air Quality Criteria for Oxides, AP-84, Research Triangle Park, North Carolina.
- U.S. Environmental Protection Agency, 1992a. A Citizen's Guide to Radon.
- U.S. Environmental Protection Agency, 1992b. Consumers Guide to Radon Reduction, How to Reduce Levels in Your Home.
- U.S. Environmental Protection Agency, 1993. Guidelines on Air Quality Models (Revised), EPA-450/2-78-027R, Research Triangle Park, North Carolina.
- U.S. Environmental Protection Agency, 1994. Memorandum regarding guidance on U.S. EPA concurrence in the identification of uncontaminated parcels under CERCLA Section 120(h), April.
- U.S. EPA, see U.S. Environmental Protection Agency
- U.S. Fish and Wildlife Service, 1988. National List of Plant Species that Occur in Wetlands: 1988 National Summary.
- U.S. Geological Survey, 1967. Topographic Quadrangle for Columbus, Ohio.
- U.S. Geological Survey, 1978. Topographic Quadrangle for Marion, Ohio.
- U.S. Geological Survey, 1982. Topographic Quadrangle for Newark, Ohio.
- U.S. Nuclear Regulatory Commission, 1989. General License Database System.
- Want, W.L., 1992. Law of Wetland Regulation, Clark Boardman Callaghan, Rel. #3, 5/92.
- Woolpert Consultants, Inc., 1989. A Phase I Archaeological Survey of Newark Air Force Base, Licking County, Ohio. December.

Woolpert Consultants, Inc., 1990. A Phase II Archaeological Survey of Newark Air Force Base, Licking County, Ohio. April.

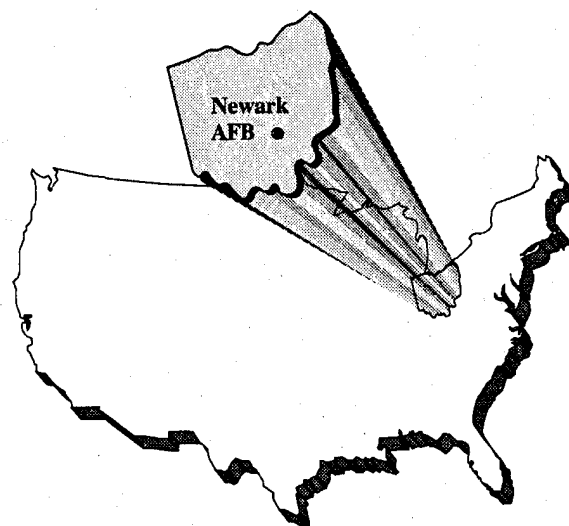
Woolpert Consultants, Inc., 1991. Base Comprehensive Plan, Newark Air Force Base, Ohio, April.

Woolpert Consultants, Inc., 1990, 1992, and 1993. Comprehensive Plan TAB Series Maps A, B, C, D, G, I, and M, Newark Air Force Base, Ohio.

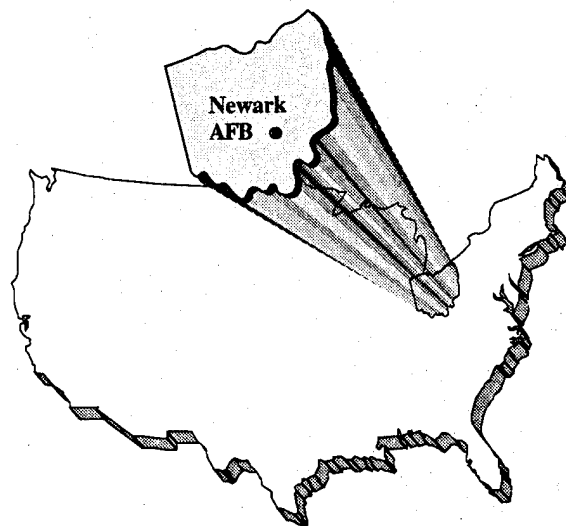
Wright Associates, Inc., 1993a. Amended Closure/Post-Closure Plan for Former Facility 87, Newark Air Force Base, December.

Wright Associates, Inc., 1993b. Hydrogeologic Investigation, Risk Assessment, and Remedial Alternatives Evaluation for The Former Facility 87 Area at the Newark Air Force Base, Newark, Ohio, REWAI project 92352.

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APPENDICES



APPENDIX A

APPENDIX A

GLOSSARY OF TERMS AND ACRONYMS/ABBREVIATIONS

APPENDIX A

GLOSSARY OF TERMS AND ACRONYMS/ABBREVIATIONS

GLOSSARY OF TERMS

Advisory Council on Historic Preservation. A 19-member body appointed, in part, by the President of the United States to advise the President and Congress and to coordinate the actions of federal agencies on matters relating to historic preservation, to comment on the effects of such actions on historic and archaeological cultural resources, and to perform other duties as required by law (Public Law 89-655; 16 U.S. Code §470).

Aesthetics. Referring to the perception of beauty.

Aggregate. Materials such as sand, gravel, or crushed stone used for mixing with a cementing material to form concrete or alone as railroad ballast or graded fill.

Alluvial plain. Plain produced by deposition of alluvium.

Alluvium. Clay, silt, sand, gravel, or similar material deposited by running water.

Ambient air quality standards. Standards established on a state or federal level that define the limits for airborne concentrations of designated "criteria" pollutants (nitrogen dioxide, sulfur dioxide, carbon monoxide, total suspended particulates, ozone, and lead) to protect public health with an adequate margin of safety (primary standards) and to protect public welfare, including plant and animal life, visibility, and materials (secondary standards).

Aquifer. The water-bearing portion of subsurface earth material that yields or is capable of yielding useful quantities of water to wells.

Archaeology. A scientific approach to the study of human ecology, cultural history, and cultural process.

Arterial. Signalized street that serves primarily through-traffic and provides access to abutting properties as a secondary function.

Asbestos. A carcinogenic substance formerly used widely as an insulation material by the construction industry; often found in older buildings.

Association. Two or more soils occurring together in a characteristic pattern.

Attainment area. A region that meets the National Ambient Air Quality Standards for a criteria pollutant under the Clean Air Act.

Average Annual Daily Traffic (AADT). For a 1-year period, the total volume passing a point or segment of a highway facility in both directions, divided by the number of days in the year.

Average travel speed. The average speed of a traffic stream computed as the length of a highway segment divided by the average travel times of vehicles traversing the segment, in miles per hour.

Biophysical. Pertaining to the physical and biological environment, including the environmental conditions crafted by man.

Biota. The plant and animal life of a region.

Capacity. The maximum rate of flow at which vehicles can be reasonably expected to traverse a point or uniform segment of a lane or roadway during a specified time period under prevailing roadway, traffic, and control conditions.

Carbon monoxide (CO). A colorless, odorless, poisonous gas produced by incomplete fossil-fuel combustion. One of the six pollutants for which there is a national ambient standard. See Criteria Pollutants.

Class I, II, and III Areas. Area classifications, defined by the Clean Air Act, for which there are established limits to the annual amount of air pollution increase. Class I areas include international parks and certain national parks and wilderness areas; allowable increases in air pollution are very limited. Air pollution increases in Class II areas are less limited, and are least limited in Class III areas. Areas not designated as Class I start out as Class II and may be reclassified up or down by the state, subject to federal requirements.

Comprehensive Plan. A public document, usually consisting of maps, text, and supporting materials, adopted and approved by a local government legislative body, which describes future land uses, goals, and policies.

Contaminants. Undesirable substances rendering something unfit for use.

Convey. To deliver title of property to a non-federal entity.

Council on Environmental Quality (CEQ). Established by the National Environmental Policy Act (NEPA), the CEQ consists of three members appointed by the President. CEQ regulations (40 Code of Federal Regulations §§ 1500-1508, as of July 1, 1986) described the process for implementing NEPA, including preparation of environmental assessments and environmental impact statements, and the timing and extent of public participation.

Corrosive. A material that has the ability to cause visible destruction of living tissue and has a destructive effect on other substances. An acid or a base.

Criteria pollutants. The Clean Air Act required the U.S. Environmental Protection Agency (EPA) to set air quality standards for common and widespread pollutants after preparing "criteria documents" summarizing scientific knowledge on their health effects. Today there are standards in effect for six "criteria pollutants:" sulfur dioxide (SO₂), carbon monoxide (CO), particulate matter equal to or less than 10 microns in diameter (PM₁₀), nitrogen dioxide (NO₂), ozone (O₃), and lead (Pb).

Cultural resources. Prehistoric and historic districts, sites, buildings, objects, or any other physical evidence of human activity considered important to a culture, subculture, or a community for scientific, traditional, religious, or any other reason.

Cumulative impacts. The combined impacts resulting from all activities occurring concurrently at a given location.

Easement. A right or privilege (agreement) that a person may have on another's property.

Effluent. Waste material discharged into the environment.

Endangered species. A species that is threatened with extinction throughout all or a significant portion of its range.

Environmental Impact Analysis Process. The process of conducting environmental studies as outlined in Air Force Instruction 32-7061.

Erosion. Wearing away of soil and rock by weathering and the action of streams, wind, and underground water.

Excess property. Property that is reported to the General Services Administration as no longer required by a federal agency. This property is then made available to all other federal agencies.

Floodplain. The lowland and relatively flat areas adjoining inland and coastal waters including flood-prone areas of offshore islands; including, at a minimum, that area subject to a 1 percent or greater change of flooding in any given year.

Friable. Easily crumbled or reduced to powder under hand pressure.

Fungicides. Any substance which kills or inhibits the growth of fungi.

Geomorphic. Pertaining to the form of the earth or its surface features.

Groundwater. Water within the earth that supplies wells and springs.

Groundwater basin. Subsurface structure having the character of a basin with respect to collection, retention, and outflow of water.

Groundwater recharge. Absorption and addition of water to the zone of saturation.

Heavy metals. A metal (e.g., lead, mercury, cadmium, or chromium) of atomic weight greater than sodium (a.w. 22.9 grams/molecule) that forms soaps on reaction with fatty acids.

Herbicides. A pesticide, either organic or inorganic, used to destroy unwanted vegetation, especially various types of weeds, grasses, and woody plants.

Hydrocarbons (HC). Any of a vast family of compounds containing hydrogen and carbon. Used loosely to include many organic compounds in various combinations; most fossil fuels are composed predominately of hydrocarbons. When hydrocarbons mix with nitrogen oxides in the presence of sunlight, ozone is formed; hydrocarbons in the atmosphere contribute to the formation of ozone.

Impacts. An assessment of the meaning of changes in all attributes being studied for a given resource; an aggregation of all the adverse effects, usually measured using a qualitative and nominally subjective technique. In this EIS, as well as in the CEQ regulations, the word impact is used synonymously with the word effect.

Infrastructure. The basic installations and facilities on which the continuance and growth of a local community depend (e.g., roads, schools, power plants, transportation, and communication systems).

Interstate. The designated National System of Interstate and Defense Highways located in both rural and urban areas, connecting the East and West coasts and extending from points on the Canadian border to various points on the Mexican border.

Liquefaction susceptibility. Potential for fluidization and loss of mechanical strength of structural soils during an earthquake.

Lead (Pb). A heavy metal used in many industries, which can accumulate in the body and cause a variety of negative effects. One of the six pollutants for which there is a national ambient air quality standard. See Criteria Pollutants.

Level of service (LOS). In transportation analyses, a qualitative measure describing operational conditions within a traffic stream and how they are perceived by motorists and/or passengers. In public services, a measure describing the amount of public services (e.g., fire protection and law enforcement services) available to community residents, generally expressed as the number of personnel providing the services per 1,000 population.

Loam, Loamy. Rich, permeable soil composed of a mixture of clay, silt, sand, and organic matter.

Mineral. Naturally occurring inorganic element or compound.

Mineral resources. Mineral deposits that may eventually become available, known deposits not recoverable at present or yet undiscovered.

Mitigation. A method or action to reduce or eliminate program impacts.

National Ambient Air Quality Standards (NAAQS). Section 109 of the Clean Air Act requires the U.S. EPA to set nationwide standards, the NAAQS, for widespread air pollutants. Currently, six pollutants are regulated by primary and secondary NAAQS: carbon monoxide, lead, nitrogen dioxide, ozone, particulate matter (PM₁₀), and sulfur dioxide. See Criteria Pollutants.

National Priorities List (NPL). The U.S. EPA's list of the most serious uncontrolled or abandoned hazardous waste sites identified for possible long-term remedial action under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980, as amended.

National Register of Historic Places. A register of districts, sites, buildings, structures, and objects important in American history, architecture, archaeology, and culture, maintained by the Secretary of the Interior under authority of Section 2(b) of the Historic Sites Act of 1935 and Section 101(a)(1) of the National Historic Preservation Act of 1966, as amended.

Native Americans. Used in a collective sense to refer to individuals, bands, or tribes who trace their ancestry to indigenous populations of North America prior to Euro-American contact.

Native vegetation. Plant life that occurs naturally in an area without agricultural or cultivational efforts. It does not include species that have been introduced from other geographical areas and have become naturalized.

National Environmental Policy Act (NEPA). Public Law 91-190, passed by Congress in 1969. The Act established a national policy designed to encourage consideration of the influences of human activities (e.g., population growth, high-density urbanization, industrial development) on the natural environment. NEPA also established the CEQ. NEPA procedures require that environmental information be made available to the public before decisions are made. Information contained in NEPA documents must focus on the relevant issues in order to facilitate the decision-making process.

Nitrogen dioxide (NO₂). Gas formed primarily from atmospheric nitrogen and oxygen when combustion takes place at high temperature. NO₂ emissions contribute to acid deposition and formation of atmospheric ozone. One of the six pollutants for which there is a national ambient air quality standard. See Criteria Pollutants.

Nitrogen oxides (NO_x). Gases formed primarily by fuel combustion, which contribute to the formation of acid rain. Hydrocarbons and nitrogen oxides combine in the presence of sunlight to form ozone, a major constituent of smog.

Nonattainment area. An area that has been designated by the U.S. EPA or the appropriate state air quality agency, as exceeding one or more national or state ambient air quality standard.

100-year flood zone. Land area having a 1-percent chance of being flooded during a given year.

1,1,2-trichloro-1,2,2-trifluoroethane (CFC-113). A solvent used in the removal of grease from metal.

Operating Location (OL). An organizational element of the Air Force Base Conversion Agency located at a closing or realigning base. The OL is responsible for the care and custody of closed areas of the base, disposal of real and related personal property and environmental cleanup. This office is the primary point of contact for local community reuse organizations and the general public who deal with the disposal and reuse of the base.

Outlease. Contract by which the government transfers exclusive possession of real estate or facilities for a specified term.

Ozone (ground level). A major ingredient of smog. Ozone is produced from reactions of hydrocarbons and nitrogen oxides in the presence of sunlight and heat. Some 68 areas, mostly metropolitan, did not meet a December 31, 1987 deadline in the Clean Air Act for attaining the ambient air quality standard for ozone.

PCB-contaminated equipment. Equipment that contains a concentration of polychlorinated biphenyls (PCBs) (see definition) from 50 to 499 ppm and regulated by the U.S. EPA.

PCB equipment. Equipment that contains a concentration of PCBs of 500 ppm or greater and is regulated by the U.S. EPA.

Permeability. The capacity of a porous rock or sediment to transmit a fluid.

Pesticides. Any substance, organic or inorganic, used to destroy or inhibit the action of plant or animal pests; the term thus includes insecticides, herbicides, fungicides, rodenticides, miticides, fumigants, and repellents. All pesticides are toxic to humans to a greater or lesser degree. Pesticides vary in biodegradability.

Physiographic province. A region in which all parts are similar in geologic structure and climate.

Pitchblende. A mineral formed by radioactive decay, often found in sulfide-bearing veins.

Pleistocene. An earlier epoch of the Quaternary period during the "ice age" beginning approximately 3 million years ago and ending 10,000 years ago. Also refers to the rocks and sediments deposited during that time.

Plume. An elongated mass of contaminated fluid moving with the flow of the fluid.

Polychlorinated biphenyls (PCBs). Any of a family of industrial compounds produced by chlorination of biphenyl. These compounds are noted chiefly as an environmental pollutant that accumulates in organisms and concentrates in the food chain with resultant pathogenic and teratogenic effects. They also decompose very slowly.

Potable water. Suitable for drinking.

Prehistoric. The period of time before the written record.

Prevention of Significant Deterioration (PSD). In the 1977 Amendments to the Clean Air Act, Congress mandated that areas with air cleaner than required by NAAQS must be protected from significant deterioration. The Clean Air Act's PSD program consists of two elements: requirements for best available control technology on major new or modified sources, and compliance with an air quality increment system.

Prevention of Significant Deterioration Area. A requirement of the Clean Air Act that limits the increases in ambient air pollutant concentrations in attainment areas to certain increments even though ambient air quality standards are met.

Prime farmland. Environmentally significant agricultural lands protected from irreversible conversion to other uses.

Primary roads. A consolidated system of connected main roads important to regional, statewide, and interstate travel; they consist of rural arterial routes and their extensions into and through urban areas of 5,000 or more population.

Recent. The time period from approximately 10,000 years ago to the present and the rocks and sediments deposited during that time.

Sediment. Material deposited by wind or water.

Seismicity. Relative frequency and distribution of earthquakes.

Seismic Zone 1. Area designated in the Uniform Building Code as having a low potential risk for large seismic events.

Shrink/swell potential. Volume change possible upon wetting or drying.

Site. As it relates to cultural/resources, any location where humans have altered the terrain or discarded artifacts.

Site-related. A group that is directly or indirectly related to the base property. For example, site-related population refers to all employees (direct and secondary), and their dependents, associated with the reuse.

Soil series. A group of soils having similar parent materials, genetic horizons, and arrangement in the soil profile.

Solvent. A substance that dissolves or can dissolve another substance.

State Historic Preservation Officer. The official within each state, authorized by the state at the request of the Secretary of the Interior to act as liaison for purposes of implementing the National Historic Preservation Act.

Sulfur dioxide (SO₂). A toxic gas that is produced when fossil fuels, such as coal and oil, are burned. SO₂ is the main pollutant involved in the formation of acid rain. SO₂ also can irritate the upper respiratory tract and cause lung damage. During 1980, some 27 million tons of sulfur dioxide were emitted in the United States, according to the Office of Technology Assessment. The major source of SO₂ in the United States is coal-burning electric utilities.

Surplus property. Property designated as excess that is of no interest to any federal agency. These properties are made available to state, local, or non-profit organizations or sold to private organizations.

Threatened species. Plant and wildlife species likely to become endangered in the foreseeable future.

Total Suspended Particulates (TSP). The particulate matter in the ambient air. The previous NAAQS for particulates was based on TSP levels and was replaced in 1987 by an ambient standard based on PM₁₀ levels.

Traffic assignment. The allocation of traffic flows among routes available between any two places.

Transfer. Deliver U.S. Government property accountability to another federal agency.

Trip distribution. A determination of the interchange of trips among zones in the region.

Trip generation. A determination of the quantity of trip ends associated with a parcel of land.

Unified Soil Classification System. A rapid method for identifying and grouping soils. Soils are grouped by grain size, gradation, and liquid limit.

Unique farmland. Agricultural lands protected from conversion by the U.S. Department of Agriculture due to their value for production of specific or high economic value crops.

U.S. Environmental Protection Agency (U.S. EPA). The independent federal agency, established in 1970, that regulates federal environmental matters and oversees the implementation of federal environmental laws.

Volatile organic compound (VOC). Compounds containing carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides, metallic carbonates, and ammonium carbonate.

Volume. The number of vehicles passing a point on a lane, roadway, or other trafficway during some time interval.

Waters of the United States. Waters that are subject to Section 404 of the Clean Water Act. These include both deep water aquatic habitats and special aquatic sites, including wetlands. Jurisdictional wetlands include those that are isolated, part of intermittent streams, or that are adjacent to waters that are, or eventually flow into, interstate or navigable waters.

Wetlands. Areas that are inundated or saturated with surface or groundwater at a frequency and duration sufficient to support a prevalence of vegetation typically adapted for life in saturated soil. This classification includes swamps, marshes, bogs, and similar areas. Jurisdictional wetlands are those wetlands that meet the hydrophytic vegetation, hydric soils, and wetland hydrology criteria under normal circumstances (or meet the special circumstances as described in the Corps of Engineers 1987 wetland delineation manual where one or more of these criteria may be absent and are a subset of "waters of the United States").

Zoning. The division of a municipality (or county) into districts for the purpose of regulating land use, types of building, required yards, necessary off-street parking, and other prerequisites to development. Zones are generally shown on a map and the text of the zoning ordinance specifies requirements for each zoning category.

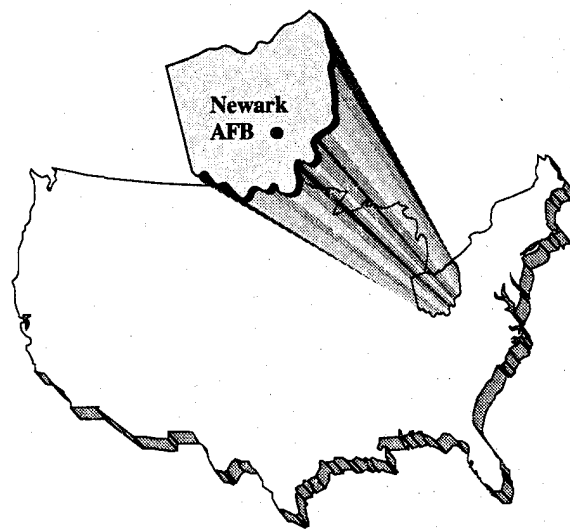
ACRONYMS/ABBREVIATIONS

AADT	average annual daily traffic
ACM	asbestos-containing materials
ADT	average daily trips
AFB	Air Force Base
AFBCA	Air Force Base Conversion Agency
AFI	Air Force Instruction
AGMC	Aerospace Guidance and Metrology Center
AHERA	Asbestos Hazard Emergency Response Act
APE	Area of Potential Effect
B&O	Baltimore and Ohio Railroad
BRACFAC	Base Realignment and Closure Air Emission Factor
CAA	Clean Air Act (Federal)
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CFC-113	1,1,2-trichloro -1,2,2-trifluoroethane
CFR	Code of Federal Regulations
CO	carbon monoxide
CWA	Clean Water Act
DBCRA	Defense Base Closure and Realignment Act
DCSC	Defense Construction Supply Center
DERP	Defense Environmental Restoration Program
DFAS	Defense Finance and Accounting Service
°F	degrees Fahrenheit
DOD	Department of Defense
DOI	Department of the Interior
DRMO	Defense Reutilization and Marketing Office
DSMOA	DOD/State Memorandum of Agreement
EA	environmental assessment
EGADS	U.S. EPA's Graphical Analytical Data System
EIAP	environmental impact analysis process
EIS	environmental impact statement
EPA	Environmental Protection Agency
EPCRA	Emergency Planning and Community Right-to-Know Act
ESA	Endangered Species Act
FDLCMA	Franklin, Delaware, and Licking County Management Area
FEMA	Federal Emergency Management Agency
FFS	Focused Feasibility Study
FIFRA	Federal Insecticide, Fungicide, and Rodenticide Act
FMV	Fair Market Value
FONSI	Finding of No Significant Impact
FPMR	Federal Property Management Regulations
FS	Feasibility Study
gpm	gallons per minute
GSA	General Services Administration
HAP	hazardous air pollutant

HARM	Hazard Assessment Rating Methodology
HUD	U.S. Department of Housing and Urban Development
IGCG	Inertial Guidance and Calibration Group
IRP	Installation Restoration Program
LOS	level of service
MACT	maximum achievable control technology
METCAL	metrology calibration
MGD	million gallons per day
$\mu\text{g}/\text{m}^3$	micrograms per cubic meter
mg/m^3	milligrams per cubic meter
MMCF	million cubic feet
mph	miles per hour
MSDS	Material Safety Data Sheet
MSL	mean sea level
MWH	megawatt-hours
NAAQS	National Ambient Air Quality Standards
NCP	National Oil and Hazardous Substance Pollution Contingency Plan
NEPA	National Environmental Policy Act of 1969
NESHAP	National Emissions Standards for Hazardous Air Pollutants
NFRAP	No Further Response Action Planned
NHPA	National Historic Preservation Act
NHRC	Newark-Heath Air Force Base Reuse Commission
NO	nitric oxide
NO_2	nitrogen dioxide
NO_x	nitrogen oxides
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
NRC	Nuclear Regulatory Commission
NRHP	National Register of Historic Places
O_3	ozone
OAC	Ohio Administrative Code
ODNR	Ohio Division of Natural Resources
OL	Operating Location
ORC	Ohio Revised Code
OSHA	Occupational Safety and Health Administration
PA	Preliminary Assessment
PA/SI	Preliminary Assessment/Site Inspection
PCB	polychlorinated biphenyl
pCi/l	picocuries per liter
PHV	peak-hour volume
P.L.	Public Law
PM_{10}	particulate matter equal to or less than 10 microns in diameter
POL	petroleum, oil, and lubricants
ppm	parts per million
PSD	Prevention of Significant Deterioration
PW	Production Well
RA	Remedial Action

RAB	Restoration Advisory Board
RADIAC	Radiation, Detection, Indication and Computation
RCRA	Resource Conservation and Recovery Act
RD	Remedial Design
RD/RA	Remedial Design/Remedial Action
RI	Remedial Investigation
RI/FS	Remedial Investigation/Feasibility Study
ROI	region of influence
RSO	Radiation Safety Officer
SARA	Superfund Amendments and Reauthorization Act
SH	State Highway
SHPO	State Historic Preservation Officer
SI	Site Inspection
SIP	State Implementation Plan
SO ₂	sulfur dioxide
SRI	supplemental remedial investigation
SVOC	semivolatile organic compound
TD	technology development
TSCA	Toxic Substances and Control Act
TSDF	Treatment, Storage, and Disposal Facility
TSP	total suspended particulates
U.S.C.	U.S. Code
USFWS	U.S. Fish and Wildlife Service
UST	underground storage tank
VOC	volatile organic compound
VPH	vehicles per hour
VMT	vehicle miles traveled

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APPENDIX B

APPENDIX B
NOTICES OF INTENT

APPENDIX B

NOTICES OF INTENT

The following Notice of Intent was circulated and published by the Air Force in the October 29, 1993, Federal Register in order to provide public notice of the Air Force's intent to prepare an environmental impact statement for disposal and reuse of Newark Air Force Base, Ohio. This Notice of Intent has been retyped for clarity and legibility.

Based on the lack of environmental issues identified during scoping, the Air Force published a Notice of Intent in the Federal Register to advise the public of the intent to prepare an environmental assessment for disposal and reuse of Newark Air Force Base, Ohio, rather than an environmental impact statement. This Notice of Intent has been retyped for clarity and legibility.

**NOTICE OF INTENT
TO PREPARE AN ENVIRONMENTAL IMPACT STATEMENT
FOR DISPOSAL AND REUSE OF SEVEN AIR FORCE BASES**

The United States Air Force (Air Force) is issuing this notice to advise the public that the Air Force intends to prepare seven environmental impact statements (EISs) to assess the potential environmental impacts of disposal and reuse of the following bases identified for closure under the Base Closure and Realignment Act of 1990 as amended:

Gentile Air Force Station, Dayton, Ohio

Griffiss Air Force Base, Rome, New York

March Air Force Base, Riverside, California

Newark Air Force Base, Newark, Ohio

K. I. Sawyer Air Force Base, Marquette, Michigan

O'Hare International Airport Air Force Reserve Station, Chicago, Illinois

Plattsburgh Air Force Base, Plattsburgh, New York

These EISs will address the potential environmental impacts of disposal of the property to public or private entities, as well as the potential environmental impacts of all reasonable reuse alternatives.

To provide a forum for public officials and the community to provide information and comments, scoping meetings will be held in each community beginning in November 1993 and continuing through late 1994. Notice of the times and locations of these meetings will be provided at a later date, and publicized in each community. The purpose of these meetings is to: (1) identify the environmental issues and concerns that should be analyzed to support base disposal and reuse; (2) solicit comments on the proposed action; and (3) solicit potential disposal and reuse alternatives for consideration in developing each EIS. In soliciting disposal and reuse alternatives, the Air Force will consider all reasonable alternatives offered by any federal, state or local government agency, and any federally-sponsored or private entity or individual. The resulting EISs will be considered in making disposal decisions that will be documented in the Air Force's Final Disposal Plan and Record of Decision for each base.

To ensure sufficient time to adequately consider public comments concerning environmental issues and disposal alternatives to be included in the EISs, the Air Force recommends that comments and reuse proposals be presented at the upcoming scoping meetings or forwarded to the address listed below at the earliest possible date. The Air Force will, however, accept additional comments at any time during the environmental impact analysis process.

Please direct written comments or requests for further information concerning the base disposal and reuse EISs to:

Lt. Colonel Gary P. Baumgartel
AFCEE/ESE
8106 Chennault Road
Brooks AFB, Texas 78235-5318
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**NOTICE OF INTENT
TO PREPARE AN ENVIRONMENTAL ASSESSMENT
FOR DISPOSAL AND REUSE OF NEWARK AIR FORCE BASE**

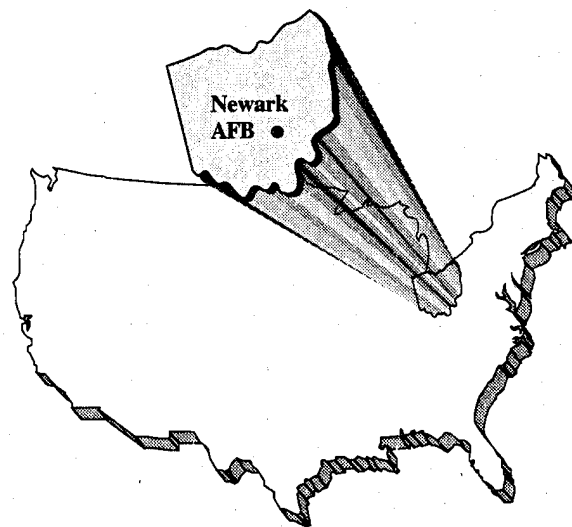
The United States Air Force is issuing this notice to advise the public that the Air Force intends to prepare an environmental assessment (EA) to assess the potential environmental consequences of the disposal and reuse of Newark AFB identified for closure under the Base Closure and Realignment Act of 1990 as amended. This notice amends the Federal Register Notice of October 28, 1993, which stated that an environmental impact statement (EIS) would be prepared for the disposal and reuse of Newark AFB.

The Air Force conducted a public scoping meeting on May 10, 1994 at the Heath City Hall, Heath, OH. This meeting had been previously publicized in a Federal Register Notice dated May 5, 1994. Based on the lack of environmental issues raised at this scoping meeting and environmental baseline data collected to date, preparation of an environmental assessment is reasonable. The environmental assessment might lead to issuance of a Finding of No Significant Impact (FONSI) if supported by the environmental impact analysis. If significant environmental impacts are identified during the environmental analysis process, an EIS will be prepared. The Air Force will publish another notice in the Federal Register notifying the public of the FONSI or of the intent to prepare an EIS.

Please direct requests for further information concerning the Newark AFB disposal and reuse environmental assessment to:

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APPENDIX C

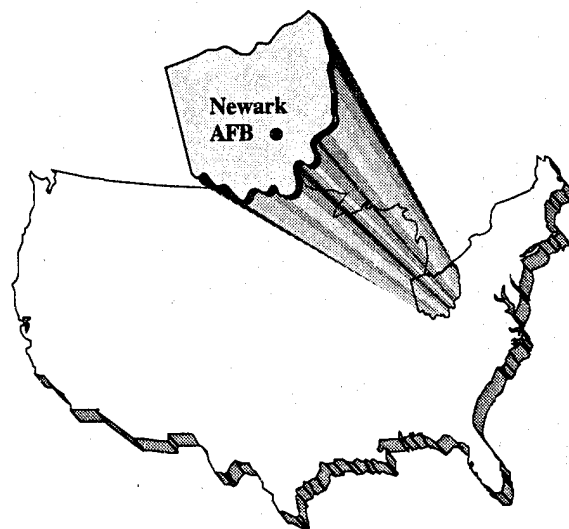
APPENDIX C
INSTALLATION RESTORATION PROGRAM BIBLIOGRAPHY

APPENDIX C

INSTALLATION RESTORATION PROGRAM BIBLIOGRAPHY

- Dames & Moore, Inc., 1984. Investigation of Proffered Donation of 13.39 Acres to Newark Air Force Station.
- Dames & Moore, Inc., 1988a. Installation Restoration Program, Newark AFB, Preliminary Assessment for the LA-1, Kaiser Land Acquisition Site, December.
- Dames & Moore, Inc., 1988b. Installation Restoration Program, Newark AFB, Preliminary Assessment for the LA-2, Orr Land Acquisition Site, December.
- Dames & Moore, Inc., 1989a. Installation Restoration Program, Newark AFB, Decision Document, LA-1, Kaiser Land Acquisition Site, July.
- Dames & Moore, Inc., 1989b. Installation Restoration Program, Newark AFB, Decision Document, LA-2, Orr Land Acquisition Site, July.
- Dames & Moore, Inc., 1989c. Installation Restoration Program, Newark AFB, Ohio, Site Inspection, July.
- Dames & Moore, Inc., 1991. Installation Restoration Program, Newark AFB, Ohio, Remedial Investigation Report, Vol. I, June.
- Dames & Moore, Inc., 1993. Final Focused Feasibility Study, Site AC-13, Newark AFB, December.
- Radian Corporation, 1985. Installation Restoration Program, Newark AFS, Ohio, Phase I - Records Search, April.
- U.S. Air Force, 1993. Comprehensive Plan TAB Series Map, Base Sites of Contamination.
- Woolpert Consultants, Inc., 1990. Comprehensive Plan TAB Series Map, D-6 Composite Installation Constraints/Opportunities.

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APPENDIX D

APPENDIX D
METHODS OF ANALYSIS

APPENDIX D

METHODS OF ANALYSIS

1.0 INTRODUCTION

This section describes the methods used in preparing this environmental assessment (EA). These methods were designed and implemented to evaluate the potential environmental impacts of disposal of Newark Air Force Base (AFB) and incident reuse. Since future reuse of the site is uncertain in its scope, activities, and timing, the analysis considered several alternative reuse scenarios and evaluated their associated environmental impacts. The reuse scenarios analyzed in this EA were defined for this study to span the anticipated range of reuse activities that are reasonably likely to occur due to disposal of the base. They were developed based on proposals submitted by affected local communities and the Air Force, and considered general land use planning objectives.

The various analysis methods used to develop this EA are summarized here by resource. In some instances, more detail is included in another appendix. These instances are noted for each resource in its respective subsection below.

2.0 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

The community's reuse plan was utilized to develop the Proposed Action. Preparation of the Proposed Action was coordinated with the Newark-Heath AFB Reuse Commission (NHRC) to ensure that the data developed represented the community's reuse desires. If data were not available in the community reuse plan, the necessary data were generated for analysis. The NHRC provided land uses, building retention, overall employment and population, phasing, and new construction and ground disturbance for the Proposed Action. The overall employment data were transferred into standard land use categories for computer modeling to determine employment for each land use. In addition to the data provided, utility demands and vehicular trip generation data were developed for the Proposed Action, and a geographic information system (GIS) was utilized to derive consistent land use acreages. Alternatives to the Proposed Action were developed by the Air Force. A comprehensive planning model was utilized to derive land uses, population, employment, building retention, phasing, ground disturbance, utility consumption, and trip generation.

A site visit was made by planning, facilities, and infrastructure personnel in December 1993 to interview key community and on-base personnel. The data collected during the site visit were used to compile existing base facilities information, community concerns and issues, and the project site's

internal opportunities and constraints. Areas of unstable soils, floodplains, wetlands, unique aesthetic resources, and the transportation network were evaluated for development of reuse scenarios. In addition, existing off-base land use, community zoning, future community/neighborhood land use plans, and data pertaining to other special projects were collected. This information provided an understanding of the project site's overall opportunities and constraints, including future community land uses.

A list of buildings (greater than 500 square feet) was generated from the base Real Property Inventory List. Other facilities, such as water tanks or recreation pavilions, were not included on the list, although it was acknowledged that they may have importance in reuse. Analysis of real property records provided information on building types and condition. For the Proposed Action and alternatives, no buildings were recommended for demolition.

Employment data generated for the plans were based on an analysis of the land uses and the types of buildings located within each land use. Factors estimating employment per building square footage were applied to each of the land uses to derive the employment. These factors, based on typical industrial standards, varied depending on the land use.

Market and economic trend data were analyzed as part of the plan development process to determine the absorption of the land uses within the Proposed Action and alternatives at the 5-, 10-, and 20-year intervals. This absorption is expressed in terms of a percentage at each of the intervals.

Ground disturbance associated with the Proposed Action and alternatives was also reviewed as a result of building renovation. It was determined that these impacts would be negligible.

Trip generation for the Proposed Action and alternatives was estimated using the Institute of Transportation Engineers' (ITE) trip generation rates developed for land uses and associated employment and building space. Each proposed land use was compared to the land use categories in the ITE database, and an appropriate land use category was selected. The number of trips was determined from the trip generation rate for that land use and the number of trip ends per unit of the independent variable (i.e., per employee or per 1,000 square feet). Each land use was compared to the trip generation characteristics of the land use type, the sample size of the ITE data, and specific site characteristics of the proposed land use, and adjustments were made that realistically estimated the trips generated by land use type for Newark AFB. Trips were then aggregated for the base to determine the total estimated average daily traffic volume for each alternative. Trip generation for each land use was estimated based upon the anticipated phasing of development over the 20-year period. Trip generation data were generated for 5-, 10-, and 20-year intervals.

Utility consumption for the Proposed Action and alternatives was generated for water, wastewater, solid waste, electricity, and, natural gas. Historic base consumption data were collected for the utilities. Expected consumption for each utility was derived using the historic consumption data. Consumption rates, based on land use, were derived for water, wastewater, and solid waste. Consumption rates for electricity and natural gas were determined using building square footage. These rates were calculated and applied to the proposed land uses in the Proposed Action and alternatives. In addition, the utility usage that would not normally be captured in an average consumption rate was determined for each of the land uses. The results were generated for the 5-, 10-, and 20-year intervals.

3.0 LOCAL COMMUNITY

3.1 COMMUNITY SETTING

The community setting section was developed to provide the context within which other biophysical impacts could be assessed. Community setting impacts were based on projected changes to direct and secondary employment levels and resultant population changes related to the transition/closure and reuse of Newark AFB. These projections were used to quantify and evaluate changes in demand on transportation services and air quality.

Closure refers to conditions in 1996, as Newark AFB draws down mission activities by approximately one-third under the Proposed Action and to an Air Force Base Conversion Agency Operating Location under the reuse alternatives.

The 1992 employment, payroll, and expenditure data from the Newark AFB Economic Resource Impact Statement (ERIS) provided the baseline historical information used to determine the number of secondary jobs created by base activities during the closure period (1992 through 1996). All secondary effects were generated using the Economic Impact Forecasting System model. Direct employment numbers for the reuse alternatives were taken directly from the Description of the Proposed Action and Alternatives (Chapter 2). Payroll assumptions for the Proposed Action were derived from historical ERIS data. Payroll estimates for Defense Finance and Accounting Service (DFAS) activities are from interviews with DFAS personnel (Pike, 1994). For the Industrial Alternative, payroll estimates were derived using data from the Ohio Bureau of Employment Services. Expenditure levels under the Proposed Action were estimated in two steps. The first step estimated expenditures for electricity, natural gas, and sewage disposal, using 1992 average rates derived from historical data and multiplied by projected consumption levels in the Description of the Proposed Action and Alternatives. The second portion was for other applicable expenses, including communications, service contracts, and procurement of materials, equipment, and supplies. These factors would be influenced more by the

activity level on the site rather than the amount of employment, and were projected to increase in proportion to changes in activity levels. Under the Industrial Alternative, the expenditure levels were estimated in the same manner as for the Proposed Action except for "other applicable expenses," which were based on reuse employment levels. Expenditure assumptions for DFAS activities were provided by DFAS personnel (Pike, 1994).

Employment and population projections were provided by the Ohio Department of Development. The closure and reuse population impacts were distributed to Licking County and the local communities using zip code data from military and civilian workers at Newark AFB in 1993.

This analysis used information from the U.S. Air Force, U.S. Bureau of Economic Analysis, U.S. Bureau of Labor Statistics, U.S. Bureau of the Census, Ohio Bureau of Employment Services, Ohio Department of Development, Licking County, and the cities of Heath and Newark.

3.2 LAND USE AND AESTHETICS

Potential land use impacts were projected based on compatibility of land uses associated with the Proposed Action and alternatives with adjacent land uses and zoning, and consistency with comprehensive plans and other land use plans, regulations, regional plans, and policies.

The region of influence (ROI) for the majority of direct land use impacts for this analysis consisted of Newark AFB, the city of Heath surrounding the base, and unincorporated Licking County west of the base.

Maps, aerial photography, and visual surveys were used to characterize on- and off-base land uses. Applicable policies, regulations, and land use restrictions were identified from the land use plans and ordinances of municipalities in the ROI. The alternatives were compared to existing land use and zoning to identify areas of conflict, as well as to local planning goals and objectives as set forth in community comprehensive plans. Land uses were examined for consistency with recommended land uses in the vicinity of airfields.

For the aesthetics analysis, the affected environment was described based upon the visual sensitivity of areas within and visible from the base. Exceptional or unique areas were categorized as having a high visual sensitivity. The Proposed Action and alternatives were then evaluated to identify land uses to be developed, visual modifications that would occur, and new areas of visual sensitivity, and to determine whether modification of unique or otherwise irreplaceable visual resources would occur and detract from the visual qualities or setting. Consistency with applicable plans that protect visual resources was also examined.

3.3 TRANSPORTATION

Potential impacts to transportation due to the Proposed Action and alternative reuse plans for Newark AFB focus on key roads, including those segments of the transportation networks in the region that serve as direct or mandatory indirect linkages to the base, and those that are commonly used by Newark AFB personnel. The need for improvements to on-base roads, off-base access, and regional arterials was considered. The analysis was derived using information from state and local government agencies. Other data sources used for the roadway analysis include the ITE and the Transportation Research Board. The ROI for the transportation analysis includes the principal road and rail networks that serve the cities of Newark and Heath with emphasis on the area surrounding Newark AFB.

The number of vehicle trips expected as a result of specific land uses on the site was estimated for 1996, 2001, and 2016 on the basis of direct on-site jobs. Trip generation data from the ITE was used to determine vehicle trips. Vehicle trips were then allocated to the local road network using prior patterns and expected destinations and sources of trips. Changes in work and associated travel patterns were derived by assigning or removing traffic to or from the most direct commuting routes. Freeway-bound traffic was determined as a percentage of total trips, then distributed to key regional roads based on trip length distribution. Changes in traffic volumes arising from reuse alternatives at Newark AFB were estimated and resulting volume changes on key regional, local, and on-base roadway segments were then determined.

The transportation network in the ROI was examined to identify potential impacts to levels of service (LOS) arising from future conditions and effects of reuse alternatives. Planning computations from the Highway Capacity Manual were used to determine a given LOS. The planning application provided estimates of traffic and anticipated LOS where the amount of detail and accuracy of information was limited. The planning procedures used in this analysis were based on forecasts of average annual daily traffic and on assumed traffic, roadway, vehicle parking, and control conditions. The results provided a basic assessment of whether or not capacity was likely to be exceeded for a given volume. Intersection analysis was then integrated into the planning capacity analysis for each roadway section analyzed and the results provided an estimate of the changes in LOS ratings expected as a result of traffic volume changes on key regional, local, and on-base roadway segments.

Projected effects of reuse alternatives on railroad transportation were based on projected populations, using current passenger-to-population ratios. Population figures were used since none of the alternatives assume direct use of local railroads.

Vehicle miles traveled (VMT) for preclosure conditions were determined for base personnel commuting to the base and for VMT on base. VMT for commuting personnel were determined by identifying the distribution of base personnel by zip codes within and outside Licking County. The centroid of each zip code area was identified and the straight line distance to the base was measured. For persons residing outside Licking County and commuting to the base, the distance from a point on the Licking County line near the commuting route to the base was used. Actual travel distances to the base from a number of locations within Licking County were evaluated and compared against the straight line distance. Based on this review the straight line distances were increased by 20 percent to take into account the routes traveled by commuters. The VMT analysis took into account a small percentage of the personnel that ride share.

The VMT analysis for on-base activities was developed by determining the straight line distance from the centroids of each parking area to the East Gate. The total number of employees, reduced by 5 percent to take ride sharing into consideration, was distributed to parking areas based on an estimate of the number of parking spaces in each area. The distance was multiplied by the number of employees for each parking area to obtain the on-base VMT.

This process was applied to the Proposed Action and alternatives by taking the employees commuting to the base and allocating them to the various zip codes based on the existing employee distribution.

3.4 UTILITIES

Utility usage was determined based on land uses and projected area population increases. The utility systems addressed in this analysis include the facilities and infrastructure used for potable water (pumping, treatment, storage, and distribution), wastewater (collection and treatment), solid waste (collection and disposal), and energy generation and distribution (electricity and natural gas). Historic consumption data, service curtailment data, peak demand characteristics, storage and distribution capacities, and related information for base utilities (including projections of future utility demand for each utility provider's particular service area) were extracted from various engineering reports. Information was also obtained from public and private utility purveyors and related county and city agencies.

The ROI for this analysis comprised the service areas of the local purveyors of potable water, wastewater treatment, and energy that serve Newark AFB and the surrounding area. It was assumed that these local purveyors would provide services within the area of the existing base after disposal/reuse.

Potential impacts were evaluated based on long-term projections of demand and population obtained from the various utility purveyors within the region (through 2016) for each of their respective service areas. In each case,

purveyors provided the most recent comprehensive projections that were either made prior to the base closure announcement or that did not take into account a change in demand by the base.

The potential effects of reuse alternatives were evaluated by estimating and comparing the additional direct and indirect demand associated with each alternative to the existing and projected operating capabilities of each utility system. Estimates of direct on-site utility demands were used to identify the effects of the reuse activities on site-related utility systems. All changes to the utility purveyors' long-term forecasts were based on estimated project-related population changes in the region and the future rates of per capita demand explicitly indicated by each purveyor's projections or derived from those projections. It was assumed that the regional per capita demand rates were representative of the reuse activities, based on assumed similarities between proposed land uses and existing or projected uses in the region. Projections in the utilities analysis include direct demand associated with activities planned on base property, as well as resulting changes in domestic demand associated with population changes in the region.

4.0 HAZARDOUS MATERIALS AND HAZARDOUS WASTE MANAGEMENT

Two categories of hazardous materials and hazardous waste management issues were addressed for this analysis: (1) impacts of hazardous materials utilized and hazardous wastes generated by each reuse proposal and (2) residual impacts associated with past Air Force practices, including delays due to Installation Restoration Program (IRP) site remediation. IRP sites were identified as part of the affected environment (Chapter 3), while remediation impacts associated with these sites were addressed as environmental consequences (Chapter 4). Impacts of hazardous wastes generated by each reuse proposal were also addressed in Chapter 4. Primary sources of data include existing published reports such as IRP documents, management plans for various toxic or hazardous substances (e.g., spill response, hazardous waste, asbestos), and survey results (e.g., radon). Pertinent federal, state, and local regulations and standards were reviewed for applicability to the Proposed Action and alternatives. Hazardous materials and waste management plans and inventories were obtained from Newark AFB. Interviews with personnel associated with on-base agencies provided the information necessary to fill any data gaps.

The ROI includes the current base property and all geographical areas that have been affected by an on-base release of a hazardous material or hazardous waste. All IRP sites are located within the base boundary, except for a portion of Landfill 2 in the northern portion of the base and contamination associated with the application of 1,1,2-trichloro-1,2,2-trifluoroethane (CFC-113) along the perimeter fence, which may extend beyond the base boundary.

Preclosure baseline conditions as defined for this study include current hazardous materials/waste management practices and inventories pertaining to the following areas: hazardous materials, hazardous waste, IRP sites, aboveground and underground storage tanks and oil/water separators, asbestos, pesticides, polychlorinated biphenyls (PCBs), radon, medical/biohazardous waste, radioactive materials, and lead-based paint. The impact analysis considered (1) the amount and type of hazardous materials/waste currently associated with specific facilities and/or areas proposed under each reuse alternative; (2) the regulatory requirements or restrictions associated with property transfer and reuse; (3) delays to development due to IRP remediation activities; and (4) remediation schedules of specific hazardous materials/waste (e.g., PCBs, medical/biohazardous waste) currently used by the Air Force.

5.0 NATURAL ENVIRONMENT

5.1 GEOLOGY AND SOILS

The evaluation of impacts to soils addressed erosion potential, construction-related dust generation, other soils problems (e.g., low soil strength, expansive soils, etc.), and disturbance of unique soil types. Information was obtained from several federal, state, and local agencies. Assessment of potential impacts to geology from the reuse alternatives included evaluation of resource potential (especially aggregates), geologic hazards (particularly potential for seismicity, liquefaction, and subsidence), paleontological resources (fossil evidence of past plant and animal life), and flooding potential.

The soils analysis was based on a review of U.S. Natural Resources Conservation Service documents for soil properties. The soils in the ROI were then evaluated for erosion potential, permeability, evidence of hardpans, expansive soil characteristics, etc., as these relate to construction problems and erosion potential during construction. Mitigations were evaluated based on county ordinances and Natural Resources Conservation Service recommendations. Common engineering practices were reviewed to determine poor soil characteristics and recommended mitigation measures.

The ROI for the geologic analysis included the region surrounding Newark AFB relative to seismic activity, aggregate resources, and flooding potential. The ROI for the soils analysis was limited to the base.

The geologic analysis was based on a review of existing literature for construction problems associated with geologic hazards, paleontological resources, availability of construction aggregate, and whether reuse would impact the availability of known mineral resources.

The treatment of paleontological resources is governed by Public Law 74-292 (the National Natural Landmarks Program, implemented by 36 Code

of Federal Regulations [CFR] 62). Only paleontological remains determined to be significant are subject to consideration and protection by a federal agency. Among the criteria used for National Natural Landmark designation are illustrative character, present condition, diversity, rarity, and value for science and education.

5.2 WATER RESOURCES

Analysis of impacts of the reuse alternatives on water resources considered groundwater quality and quantity, surface water quality (effects from erosion or sedimentation and contamination), surface water drainage diversion, and non-point source surface runoff to Ramp Creek. Impacts to water quality resources resulting from IRP activities were addressed under Hazardous Materials and Waste Management (Section 4.0). Information was obtained from several federal, state, and local agencies. The ROI for water resources included the groundwater basin underlying the base, the surface drainage directly affected by runoff from the base, and the 100-year floodplain of Ramp Creek in the vicinity of the base.

Existing surface water conditions were evaluated for flood potential, non-point source discharge or transportation of contaminants, and surface water quality. Groundwater resources were evaluated as they pertained to adequate water supplies for each of the reuse alternatives. Groundwater quality and the potential as a potable water source for each reuse alternative were documented. The existing storm water drainage system was evaluated based on available literature, and the impacts to this system from each of the reuse alternatives were determined.

5.3 AIR QUALITY

The air quality resource is defined as the condition of the atmosphere, expressed in terms of the concentrations of air pollutants occurring in an area as the result of emissions from natural and/or man-made sources. Reuse alternatives have the potential to affect air quality depending on net changes in the release of both gaseous and particulate matter emissions. The impact significance of these emission changes was determined by comparing the resulting atmospheric concentrations to state and federal ambient air quality standards. This analysis drew from climatological data, air quality monitoring data, baseline emission inventory information, reuse-related source information, and transportation data. Principal sources of these data were the Ohio Environmental Protection Agency (EPA), the Franklin/Licking County Regional Air Pollution Control Agency, the Newark AFB Office of Environmental Management, the Aerospace Guidance and Metrology Center, and the transportation analysis conducted for this EA.

The ROI was determined by emissions from sources associated with operation of the reuse alternatives. For inert pollutant emissions (all pollutants other than ozone and its precursors), the measurable ROI is limited

to a few miles downwind from the source (i.e., the immediate area of Newark AFB). The ROI for ozone impacts from project emissions includes all of the Metropolitan Columbus Intrastate Air Quality Control Region.

Emissions predicted to result from the proposed alternatives were compared to existing baseline emissions to determine the potential for adverse air quality impact. Impacts were also assessed by comparing the potential impact of these emissions to air quality standards and attainment levels for complying with these standards. Appendix H contains the projected emissions inventory information and methods. Impacts were considered significant if project emissions would (1) increase an off-site ambient pollutant concentration from below to above a federal, state, or local standard; (2) contribute a measurable amount to an existing or projected air quality standard exceedance; or (3) expose sensitive receptors (such as schools or hospitals) to substantial pollutant concentrations. All other air quality impacts were considered insignificant.

5.4 BIOLOGICAL RESOURCES

Biological resources addressed in relation to disposal and reuse of Newark AFB included vegetation, wildlife, threatened and endangered species, and sensitive habitats (e.g., wetlands). Primary data sources for the analysis included published literature and reports, 1989 aerial photographs, the Ohio Natural Diversity Database, field reconnaissance of the base, and contacts with agencies such as the U.S. Fish and Wildlife Service and the Ohio Department of Natural Resources. The ROI for the biological resources assessment is Newark AFB and connecting portions of Ramp Creek. Vegetation and sensitive biological resources (e.g., wetlands) on the base were mapped using aerial photographs.

Wetlands were identified using U.S. Army Corps of Engineers criteria for the delineation of wetlands. Although a formal wetland delineation was not conducted, vegetation types identified by the 1994 Ohio Department of Natural Resources Survey were classified for the hydrophytic vegetation parameter using the U.S. Fish and Wildlife Service National List of Plant Species that Occur in Wetlands: 1988 National Summary. The soil parameter was characterized using the Natural Resources Conservation Service 1992 soils classification for Newark AFB. Average stream flows (perennial) and soil classifications were used to calculate the hydrologic component of wetlands. Ramp Creek initially passes the requirements for wetland delineation; areas that are forested but not perennially flooded require further inspection.

The direct impact analysis was performed by overlaying project land use maps for each alternative onto the biological resource maps to calculate the overlap by land use. All other impacts to vegetation, wildlife, sensitive species, and sensitive habitats were qualitatively assessed based on literature data and scientific expertise on the responses of plants and animals

to project-related disturbances, such as landscaping and vegetation maintenance.

5.5 CULTURAL RESOURCES

Cultural resources generally include three main categories: prehistoric resources, historic structures and resources, and traditional resources. Prehistoric resources are places where human activity has measurably altered the earth or left deposits of physical remains. Historic structures and resources include standing structures and other physical remains of historic significance. Traditional resources are topographical areas, features, habitats, plants, animals, minerals, or archaeological sites that contemporary Native Americans or other groups value presently, or did so in the past, and consider essential for the persistence of their traditional culture. Cultural resources of particular concern include properties listed on the National Register of Historic Places (NRHP), properties potentially eligible for the NRHP, and sacred Native American sites and areas.

Data used to compile information on these resources were obtained from existing environmental documents; material on file at Newark AFB; recent cultural resource reports pertaining to the base; interviews with individuals familiar with the history, archaeology, or paleontology of the area; and records of the Ohio Historical Center. The ROI for cultural resources includes all areas within the boundaries of Newark AFB.

The EA contains the most up-to-date information on the importance of cultural resources on Newark AFB, based on recent and ongoing evaluations of eligibility for the NRHP. Cultural resources for which eligibility information was unavailable were assumed to be eligible for the NRHP, as stipulated in the National Historic Preservation Act (NHPA).

According to NRHP criteria (36 CFR 60.4), the quality of significance is present in districts, sites, buildings, structures, and objects that:

- (a) Are associated with events that have made a significant contribution to the broad patterns of history
- (b) Are associated with the lives of persons significant in the past
- (c) Embody the distinctive characteristics of a type, period, or method of construction; represent the work of a master; possess high artistic value; or represent a significant and distinguishable entity whose components may lack individual distinction
- (d) Have yielded, or may be likely to yield, information important in prehistory or history.

To be listed in or considered eligible for listing in the NRHP, a cultural resource must meet at least one of the above criteria and must also possess

integrity of location, design, setting, materials, workmanship, feeling, and association. Integrity is defined as the authenticity of a property's historic identity, as evidenced by the survival of physical characteristics that existed during the property's historic or prehistoric occupation or use. If a resource retains the physical characteristics it possessed in the past, it has the capacity to convey information about a culture or people, historical patterns, or architectural or engineering design and technology.

Types of properties that are generally excluded from potential NRHP listing include religious properties (Criteria Consideration A); moved properties (Criteria consideration B); birthplaces or graves (Criteria Consideration C); cemeteries (Criteria Consideration D); reconstructed properties (Criteria Consideration E); commemorative properties (Criteria Consideration F); and properties that have achieved significance within the last 50 years (Criteria Consideration G). Each of these criteria considerations has exceptions.

For properties less than 50 years in age and particularly for highly specialized military, industrial, and scientific properties, the 50-year age requirement has been found to be increasingly inadequate. General guidance for establishing whether or not a property possesses the *exceptional significance* required if it is less than 50 years in age is provided in NRHP Bulletin No. 22 (NRHP, 1991). Properties associated with military and scientific missile launch programs have been addressed in the Advisory Council on Historic Preservation's (ACHP) guidelines (1991). In addition, the Air Force has developed guidance for the assessment of its Cold War properties, again focusing upon the need to establish *exceptional national significance*. The interim guidance attempts to supplement both the available National Park Service and ACHP guidance (Green, 1993). The interim guidelines include a revised set of evaluation criteria specifically designed to assess exceptional significance of Cold War properties:

Buildings, structures, objects, sites, or districts that possess exceptional value or quality in illustrating the Cold War heritage of the United States; that possess a high degree of integrity of location, design, setting, materials, workmanship, feeling, and association and:

- a. Are directly associated with events that have made a significant contribution to, or are identified with, or that outstandingly represent the broad national pattern of U.S. Cold War history, and from which an understanding of those patterns may be gained; or
- b. Are associated directly and importantly with the lives of persons nationally significant in the Cold War history of the United States; or
- c. Represent some great idea or ideal of the American people (e.g., "Peace through Strength"); or

- d. Embody the distinguishing characteristics of an architectural, engineering, technological, or scientific-type specimen exceptionally valuable for a study of a period, style, method, or technique of construction; or that represent a significant, distinctive, and exceptional entity whose components may lack individual distinction.

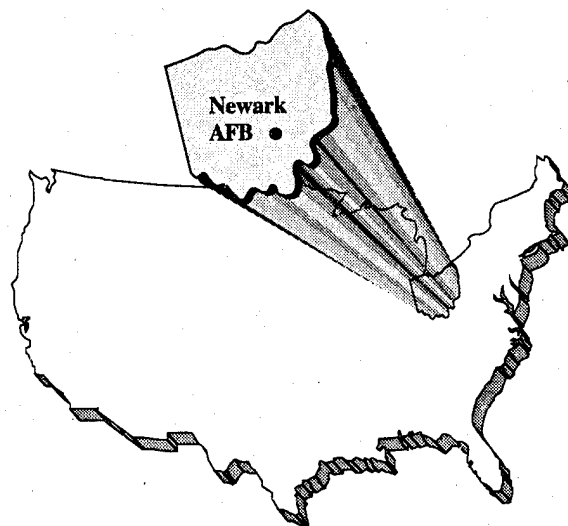
Compliance with requirements of cultural resource laws and regulations ideally involves four basic steps: (1) identification of significant cultural resources that could be affected by the Proposed Action or its alternatives, (2) assessment of the impacts or effects of these actions, (3) determination of significance of potential historic properties within the ROI, and (4) development and implementation of measures to eliminate or reduce adverse impacts. The primary law governing cultural resources in terms of their treatment in an environmental analysis is the NHPA, which addresses the protection of archaeological, historic, and Native American resources. In compliance with the NHPA, the Air Force is in the process of consultation with the State Historic Preservation Officer, as required under Sections 106 and 111 of the NHPA.

Adverse effects that may occur as a result of base reuse are those that have a negative impact on characteristics that make a resource eligible for listing in the NRHP. Actions that can diminish the integrity, research potential, or other important characteristics of a historic property include the following (36 CFR 800.9):

- Physical destruction, damage, or alteration of all or part of the property
- Isolating the property from its setting or altering the character of the property's setting when that character contributes to the property's qualification for the NRHP
- Introduction of visual or auditory elements that are out of character with the property or that alter its setting
- Transfer or sale of a federally owned property without adequate conditions or restrictions regarding its preservation, maintenance, or use
- Neglect of a property, resulting in its deterioration or destruction.

Regulations for implementing Section 106 of the NHPA indicate that the transfer, conveyance, lease, or sale of a historic property are procedurally considered to be adverse effects, thereby ensuring full regulatory consideration in federal project planning and execution. However, effects of a project that would otherwise be found to be adverse may not be considered adverse if one of the following conditions exists:

- When the historic property is of value only for its potential contribution to archaeological, historical, or architectural research, and when such value can be substantially preserved through the conduct of appropriate research, and such research is conducted in accordance with applicable professional standards and guidelines
- When the undertaking is limited to the rehabilitation of buildings and structures and is conducted in a manner that preserves the historical and architectural value of the affected historic property through conformance with the Secretary's Standards for Rehabilitation and Guidelines for Rehabilitation of Historic Buildings
- When the undertaking is limited to the transfer, conveyance, lease, or sale of a historic property, and adequate restrictions or conditions are included to ensure preservation of the property's significant historic features.



APPENDIX E

APPENDIX E
CURRENT ENVIRONMENTAL PERMITS

APPENDIX E

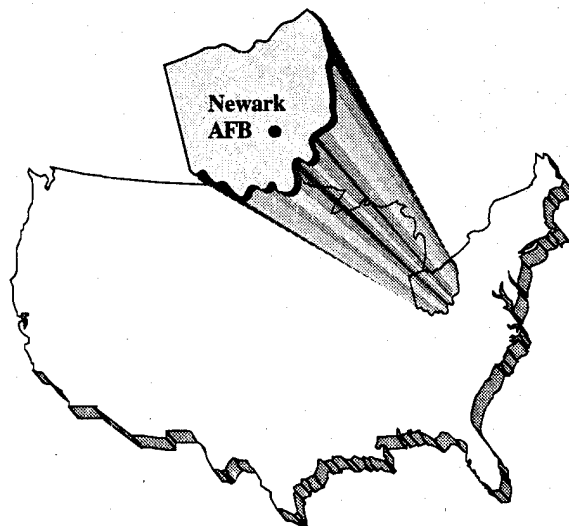
CURRENT ENVIRONMENTAL PERMITS

Permit No.	Permitted Facility/ Equipment	Issuing Agency	Date of Issuance	Date of Expiration
34-30113-1AFP	Static meters (Hydrogen-3)	NRC	Unknown	2/28/95
	Static and vacuum brushes (Polonium-210)			
	Magnetic compasses (Promethium-147)			
	Ionizers and air guns (Polonium-210)			
34-30285-1AFP	Emergency exit signs (Hydrogen-3)	U.S. Air Force RIC	3/23/95	3/31/95
34-30149-1AFP	Tritium tritidefoils (Hydrogen-3)	U.S. Air Force RIC	2/9/93	2/28/96
34-09220-1AFP	Calibration equipment (Cesium-137)	U.S. Air Force RIC	1/22/86	Unknown
	Calibration equipment (Cobalt-60)			
	Hydrogen-3			
NAFB-04 A	Industrial wastewater pretreatment permit	City of Heath, Ohio POTW	10/1/91	10/1/96
Pending	48-inch storm sewer outfall #92 NPDES	Ohio EPA	Applied for 12/18/90	NA
4546912	PDWS non-transient/non- community license to operate	Ohio EPA	1/24/95	1/30/96 Annually
Pending	Group storm water industrial	Ohio EPA	Applied for 9/27/91	NA
450041	UST annual registration 5 systems	Ohio Dept. of Commerce Div. of SFM BUSTR	Applied for 9/27/91 7/1/94	6/30/95
45-4-0260	Class IV (yard waste) Composting Facility	Ohio EPA	12/19/94	None; one- time applic.
Pending	Class IV (yard waste) composting facility	Local Solid Waste District	Applied for 1/20/95	NA
B026 (pending)	Industrial boiler air PTO	Ohio EPA	On registration	NA
B027	Industrial boiler air PTO	Ohio EPA	9/16/95	9/15/97
B028	Industrial boiler air PTO	Ohio EPA	9/16/95	9/15/97
L031 (pending)	Solvent spray booth	Ohio EPA	8/1/91	8/1/94
L095	CFC-113 fume hood PTO	Ohio EPA	8/12/94	8/12/97

**CURRENT ENVIRONMENTAL PERMITS
(Continued)**

Permit No.	Permitted Facility/ Equipment	Issuing Agency	Date of Issuance	Date of Expiration
K003	Paint spray booth	Ohio EPA	4/6/94	Unknown
L096	Delta sonic cold cleaner PTO	Ohio EPA	8/12/94	8/12/97
P002	Beryllium cyclone/baghouse PTO	Ohio EPA	Applied for 6/23/94	NA
P004 (pending)	CFC-113 distillation unit PTO	Ohio EPA	8/16/93 on registration	NA
B029-B036, K002, L001-L012, L014, L015, L017-L021, L023-L027, L029- L033, L035, L037, L042, L044, L046- L057, L060-L073, L077-L089, L091, L093, L094, L097- L099, L102, L104, L105, L107-L110, L127-L131, P001, P003, P005-P007, P009, P010, P012 4001, T001-T005, 5012, T013	Air pollutant emission source	Ohio EPA	119 sources on registration	NA

BUSTR = Bureau of Underground Storage Tank Regulations
 EPA = Environmental Protection Agency
 NA = not applicable
 NPDES = National Pollutant Discharge Elimination System
 NRC = Nuclear Regulatory Commission
 PDWS = Potable Drinking Water System
 POTW = public owned treatment works
 PTO = Permit to Operate
 RIC = Radioisotope Committee
 SFM = State Fire Marshal
 UST = underground storage tank



APPENDIX F

APPENDIX F

**AIR FORCE POLICY FOR
MANAGEMENT OF ASBESTOS-CONTAINING
MATERIAL (ACM) AT CLOSURE BASES AND
RESULTS OF NEWARK AIR FORCE BASE ASBESTOS SURVEY**

APPENDIX F

AIR FORCE POLICY FOR MANAGEMENT OF ASBESTOS-CONTAINING MATERIAL (ACM) AT CLOSURE BASES

This policy applies specifically to property being disposed of through the Base Realignment and Closure (BRAC) process and supersedes all previous policy on this matter.

1. REFERENCES

- a. Asbestos Hazard Emergency Response Act (AHERA).
- b. Federal Tort Claims Act, 28 U.S.C. § 2671.
- c. 40 CFR Part 61, Subpart M - National Emission Standards for Hazardous Air Pollutants (NESHAP).
- d. 29 CFR Section 1910.1001 - Occupational Safety and Health Administration (OSHA) general industry standard for asbestos.
- e. 29 CFR Section 1926.58 - Occupational Safety and Health Administration (OSHA) construction industry standard for asbestos.
- f. 40 CFR Part 302 - Designation, Reportable Quantities, and Notification.
- g. 41 CFR Section 101-47.304-13 - Federal Property Management Regulations provisions relating to asbestos.
- h. AFI 32-1052, Facility Asbestos Management.
- i. AFI 32-7066, Environmental Baseline Surveys in Real Estate Transactions.

2. DEFINITIONS

- a. **Asbestos** - A group of naturally occurring minerals that separate into fibers, including chrysotile, amosite, crocidolite, asbestiform anthophyllite, asbestiform tremolite, and asbestiform actinolite.
- b. **ACM** - Asbestos-Containing Material. Any material containing more than one percent asbestos.
- c. **Accredited Asbestos Professional** - Air Force Bioenvironmental Engineer or any other professional who is accredited through EPA's asbestos model accreditation plan or other equivalent method.

3. POLICY

The Air Force will ensure that at the time any property is conveyed, leased, or otherwise disposed of through the Base Realignment and Closure (BRAC) process, it does not pose a threat to human health due to ACM and that the property complies with all applicable statutes and regulations regarding ACM.

a. Responsibilities

- (1) The Air Force Base Conversion Agency (AFBCA) conducts and funds, from BRAC accounts, any asbestos surveys and remediation needed solely for base closure; to include, but not limited to, additional asbestos surveys for environmental baseline surveys, asbestos repair or resurvey of vacated buildings.
- (2) The MAJCOM's conduct and fund asbestos surveys and remediation needed to properly manage asbestos hazards, in accordance with current policy guidelines, up to the time of property management responsibility transfer to AFBCA.

b. Surveys for ACM. A survey of facilities for ACM will be accomplished or updated within the 6 months prior to the initial transfer, whether by lease, sale or other disposal method. Surveys will, at a minimum, identify the extent of asbestos contained in facilities and the exposure hazards. Surveys will be accomplished under the supervision of an accredited asbestos professional. These surveys will minimally include the following:

- (1) A review of facility records.
- (2) A visual inspection.
- (3) An intrusive inspection, as directed by an accredited asbestos professional.
- (4) Ambient air sampling, if directed by an accredited asbestos professional, in order to determine if any appropriate remedial actions are needed prior to the property being leased or transferred, or to protect facility occupants.

c. Remediation of ACM. Remediation of ACM in facilities at closure bases will be in accordance with applicable laws, regulations and standards. Remediation of ACM may be required if, in the judgment of an accredited asbestos professional, at least one of the following criteria apply:

- (1) The ACM is of a type, condition, and in a location such that, through normal and expected use of the facility, it will be damaged to the extent that it will produce an asbestos fiber hazard to facility occupants.
- (2) The type and condition of the ACM is such that it is not in compliance with appropriate statutes or regulations.

EXCEPTION: Remediation of ACM by AFBCA will not be accomplished if the transferee is willing to conduct remediation in accordance with applicable standards prior to beneficial occupancy as part of the transfer agreement.

- d. **Full Disclosure.** AFBCA will make a full disclosure to the extent known of the types, quantities, locations, and condition of ACM in any real property to be conveyed, leased, sold, or otherwise transferred. Results of ambient air sampling will also be disclosed where available. This disclosure will normally be included in appraisal instructions, invitations for bids or offers to purchase, advertisements and contracts for sale, leases, and deeds.
- e. **Management of ACM.** ACM remaining in a facility will be managed in-place using commonly accepted standards, criteria, and procedures in compliance with all applicable laws and regulations to assure the protection of human health and the environment. The responsibility for this management will be transferred to the owner or lessee by execution of the appropriate documents.

4. EFFECTIVE DATE

This policy becomes effective on the date signed and remains in effect until superseded.

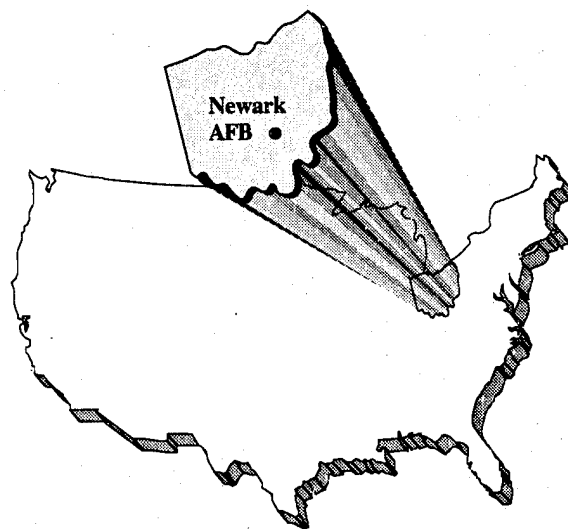
/s/ _____
Alan P. Babbitt
Acting Deputy Assistant Secretary of the Air Force
(Environment, Safety, and Occupational Health)

3/25/94
Date

This Air Force Policy for Management of Asbestos Containing Material (ACM) at Closure Bases, March 25, 1994, supersedes previous Air Force Policy on management of asbestos dated November 6, 1990, and May 1, 1992, respectively, and has been retyped for purposes of clarity and legibility.

Table F-1. Facilities Surveyed for Asbestos, Newark Air Force Base, 1989

Location (Facility No.)	Facility Description	Asbestos-Containing Material (ACM) Present
1	Medical Aid Station	Transite wall material
2	Logistics Facility Depot Operations	Thermal system insulation, cementitious ACM in pipe chases
3	Vehicle Maintenance Shop	Transite pipe (exterior)
4	Instrument Overhaul and Test Depot	Thermal system insulation, spray on fireproofing, trowled on ACM
5	Electric Power Station	No ACM identified
6	Water Supply Building	No ACM identified
7	Water Supply Building	No ACM identified
8	Water Supply Building	No ACM identified
9	Storage Building	No ACM identified
20	Pavement and Grounds Facility	No ACM identified
21	Gymnasium	No ACM identified
22	Compressed Air Plant	No ACM identified
26	Gymnasium	No ACM identified
52	Electric Power Station	No ACM identified
54	Storage Building	No ACM identified
55	Logistics Facility Depot Operations	No ACM identified
56	Fire Station	No ACM identified
88	Demolished	No ACM identified
--	Industrial Process Coding Tower	Transite splash plates



APPENDIX G

APPENDIX G
BIOLOGICAL RESOURCES

**Table G-1. Species Observed during the Ohio Department of Natural Resources
Biological Survey at Newark Air Force Base in 1994**

Page 1 of 11

Common Name	Scientific Name
PLANTS	
Maple Family	Aceraceae
Box elder	<i>Acer negundo</i>
Silver maple	<i>Acer saccharinum</i>
Water-Plantain Family	Alismataceae
Water-plantain	<i>Alisma subcordatum</i>
Sumac or Cashew Family	Anacardiaceae
Poison ivy	<i>Toxicodendron radicans</i>
Carrot Family	Apiaceae
Poison hemlock	<i>Conium maculatum</i>
Queen Anne's lace	<i>Daucus carota</i>
Dogbane Family	Apocynaceae
Dogbane	<i>Apocynum cannabinum</i>
Sunflower Family	Asteraceae
Lesser ragweed	<i>Ambrosia artemisiifolia</i>
Corn cotula	<i>Anthemis arvensis</i>
Burdock	<i>Arctium minus</i>
New England aster	<i>Aster novae-angliae</i>
Common white aster	<i>Aster pilosus</i>
Zigzag aster	<i>Aster prenanthoides</i>
Small-headed aster	<i>Aster racemosus</i>
Panicled aster	<i>Aster simplex</i>
Bur-marigold	<i>Bidens cernua</i>
Strawstem beggar-ticks	<i>Bidens comosa</i>
Devil's beggar-ticks	<i>Bidens frondosa</i>
Pineapple weed	<i>Chamomila suaveoleus</i>
Ox-eye daisy	<i>Chrysanthemum leucanthemum</i>
Canada thistle	<i>Cirsium arvense</i>
Field thistle	<i>Cirsium discolor</i>
Bull thistle	<i>Cirsium vulgare</i>
Pilewort	<i>Erechtites heiracifolia</i>
Philadelphia fleabane	<i>Erigeron philadelphicus</i>
Rough fleabane	<i>Erigeron strigosus</i>
Tall thorough-wort	<i>Eupatorium altissimum</i>
Boneset	<i>Eupatorium perfoliatum</i>

**Table G-1. Species Observed during the Ohio Department of Natural Resources
Biological Survey at Newark Air Force Base in 1994**

Page 2 of 11

Common Name	Scientific Name
PLANTS (Continued)	
White-snakeroot	<i>Eupatorium rugosum</i>
Ox-eye sunflower	<i>Heliopsis helianthoides</i>
Field-cress	<i>Lepidium campestre</i>
Green-headed coneflower	<i>Rudbeckia laciniata</i>
Three-lobed coneflower	<i>Rudbeckia triloba</i>
Cup plant	<i>Silphium lacinatedum</i>
Canada goldenrod	<i>Solidago gigantea</i>
Dandelion	<i>Taraxacum officinale</i>
Colt's foot	<i>Tussilago farfara</i>
Moth mullein	<i>Verbascum blattaria</i>
Common mullein	<i>Verbascum thapsus</i>
Tall iron-weed	<i>Veronia gigantea</i>
Cocklebur	<i>Xanthium strumarium</i>
Mustard Family	Brassicaceae
Garlic-mustard	<i>Alliaria petiolata</i>
Yellow rocket	<i>Barbarea vulgaris</i>
Black mustard	<i>Brassica nigra</i>
Shepherd's purse	<i>Capsella bursa-pastoris</i>
Dame's rocket	<i>Hesperis matronalis</i>
Bellflower Family	Campanulaceae
Great blue lobelia	<i>Lobelia siphilitica</i>
Honeysuckle Family	Caprifoliaceae
Japanese honeysuckle	<i>Lonicera japonica</i>
Amur honeysuckle	<i>Lonicera maackii</i>
Morrow's honeysuckle	<i>Lonicera morrowii</i>
Elderberry	<i>Sambucus canadensis</i>
Pink Family	Caryophyllaceae
Deptford pink	<i>Dianthus armeria</i>
Bouncing bet	<i>Saponaria officinalis</i>
Goosefoot Family	Chenopodiaceae
Lamb's quarter	<i>Chenopodium albidum</i>
Mexican tea	<i>Chenopodium ambrosioides</i>
Morning-glory Family	Convolvulaceae
Field bindweed	<i>Convolvulus arvensis</i>

Table G-1. Species Observed during the Ohio Department of Natural Resources
Biological Survey at Newark Air Force Base in 1994

Page 3 of 11

Common Name	Scientific Name
PLANTS (Continued)	
Dogwood Family	Cornaceae
Grey dogwood	<i>Cornus racemosa</i>
Gourd Family	Cucurbitaceae
Wild cucumber	<i>Echinocystis lobata</i>
Dodder Family	Cuscutaceae
Common dodder	<i>Cuscuta gronovii</i>
Sedge Family	Cyperaceae
Woodland sedge	<i>Carex blanda</i>
Crested sedge	<i>Carex cristatella</i>
Frank's sedge	<i>Carex frankii</i>
Sedge	<i>Carex molesta</i>
Fox sedge	<i>Carex vulpinoidea</i>
Shining umbrella sedge	<i>Cyperus bipartitus</i>
False nutsedge	<i>Cyperus strigosus</i>
Red-footed spike-rush	<i>Eleocharis erythropoda</i>
Teasel Family	Dipsacaceae
Teasel	<i>Dipsacus sylvestris</i>
Spurge Family	Euphorbaceae
Three-seeded mercury	<i>Acalypha rhomboidea</i>
Toothed spurge	<i>Euphorbia dentata</i>
Spotted spurge	<i>Euphorbia maculata</i>
Eyebane	<i>Euphorbia nutans</i>
Horsetail Family	Equisetaceae
Common horsetail	<i>Equisetum arvense</i>
Common scouring-rush	<i>Equisetum hyemale</i>
Legume Family	Fabaceae
Black medic	<i>Medicago lupulina</i>
White sweet-clover	<i>Melilotus alba</i>
Yellow sweet-clover	<i>Melilotus officinalis</i>
Black locust	<i>Robinia psuedoacacia</i>
Alsike clover	<i>Trifolium hybridum</i>

**Table G-1. Species Observed during the Ohio Department of Natural Resources
Biological Survey at Newark Air Force Base in 1994
Page 4 of 11**

Common Name	Scientific Name
PLANTS (Continued)	
Buckeye Family	Hippocastanaceae
Ohio buckeye	<i>Aesculus glabra</i>
Arrow-grass Family	Juncaceae
Torrey's rush	<i>Juncus torreyi</i>
Mint Family	Lamiaceae
Ground ivy	<i>Glechoma hederacea</i>
Purple dead-nettle	<i>Lamium purpureum</i>
Mother-wort	<i>Leonurus cardiaca</i>
Common mint	<i>Menta arvensis</i>
Catnip	<i>Nepeta cataria</i>
Self-heal	<i>Prunella vulgaris</i>
Germander	<i>Teucrium canadense</i>
Lily Family	Liliaceae
Common garlic	<i>Allium vineale</i>
Day-lily	<i>Heemerocallis fulva</i>
Meadowfoam Family	Limnanthaceae
Mermaid-weed	<i>Floerkea proserpinacoides</i>
Flax Family	Linaceae
Spotted jewel-weed	<i>Impatiens capensis</i>
Pale jewel-weed	<i>Impatiens pallida</i>
Mulberry Family	Moraceae
White mulberry	<i>Morus alba</i>
Olive Family	Oleaceae
Green ash	<i>Fraxinus pennsylvanica</i>
Evening Primrose Family	Onagraceae
Enchanter's nightshade	<i>Circaea lutetiana</i>
American willow-herb	<i>Epilobium ciliatum</i>
Common evening-primrose	<i>Oenothera biennis</i>

**Table G-1. Species Observed during the Ohio Department of Natural Resources
Biological Survey at Newark Air Force Base in 1994**

Page 5 of 11

Common Name	Scientific Name
PLANTS (Continued)	
Oxalis Family	Oxalidaceae
Yellow wood-sorel	<i>Oxalis stricta</i>
Poppy Family	Papaveraceae
Bloodroot	<i>Sanguinaria canadensis</i>
Pokeweed Family	Phytolaccaceae
American pokeweed	<i>Phytolacca americana</i>
Plantain Family	Plantaginaceae
English plantain	<i>Plantago lanceolata</i>
Sycamore Family	Platanaceae
Sycamore	<i>Platanus occidentalis</i>
Grass Family	Poaceae
Red-top grass	<i>Agrostis gigantea</i>
Common brome grass	<i>Bromus commutatus</i>
Hungarian brome grass	<i>Bromus inermis</i>
Orchard grass	<i>Dactylis glomerata</i>
Barnyard grass	<i>Echinochloa muricata</i>
Stream-bank wild rye	<i>Elymus riparius</i>
Meadow-fesque	<i>Festuca pratensis</i>
Fowl manna grass	<i>Glyceria striata</i>
Panic grass	<i>Panicum clandestinum</i>
Wired witchgrass	<i>Panicum flexile</i>
Reed-canary grass	<i>Phalaris arundinacea</i>
Dark-green bulrush	<i>Scirpus altrovirens</i>
Soft-stemmed bulrush	<i>Scirpus validus</i>
Yellow foxtail grass	<i>Setaria glauca</i>
Green foxtail	<i>Setaria viridis</i>
Grease grass	<i>Tridens flavus</i>
Phlox Family	Polemonaceae
Forest phlox	<i>Phlox divaricata</i>

**Table G-1. Species Observed during the Ohio Department of Natural Resources
Biological Survey at Newark Air Force Base in 1994**

Page 6 of 11

Common Name	Scientific Name
PLANTS (Continued)	
Buckwheat Family	Polygoniaceae
Tufted smartweed	<i>Polygonum cespitosum</i>
Pinkweed	<i>Polygonum pennsylvanicum</i>
Lady's thumb	<i>Polygonum persicaria</i>
Dotted smartweed	<i>Polygonum punctatum</i>
False buckwheat	<i>Polygonum scandens</i>
Curly dock	<i>Rumex crispus</i>
Primrose Family	Primulaceae
Moneywort	<i>Lysimachia nummularia</i>
Buttercup Family	Ranunculaceae
Virgin's bower	<i>Clematis virginiana</i>
Kidney-leaved crowfoot	<i>Ranunculus abortivus</i>
Cursed crowfoot	<i>Ranunculus sceleratus</i>
Rose Family	Rosaceae
Thick-leaved wild strawberry	<i>Fragaria virginiana</i>
White avens	<i>Geum canadense</i>
Spring avens	<i>Geum vernum</i>
Strawberry-weed	<i>Potentilla norvegica</i>
Sulphur four-fingers	<i>Potentilla recta</i>
Wild black cherry	<i>Prunus serotina</i>
Multiflora rose	<i>Rosa multiflora</i>
Blackberry	<i>Rubus</i> sp.
Madder Family	Rubiaceae
Cleavers	<i>Galium aparine</i>
Willow Family	Salicaceae
Cottonwood	<i>Populus deltoides</i>
Diamond willow	<i>Salix eriocephala</i>
Sandbar willow	<i>Salix exigua</i>
Black willow	<i>Salix nigra</i>
Figwort Family	Scrophulariaceae
Winged monkey-flower	<i>Mimulus alatus</i>
Eastern figwort	<i>Scrophularia marilandica</i>
Thyme-leaved speedwell	<i>Veronica serpyllifolia</i>

Table G-1. Species Observed during the Ohio Department of Natural Resources
Biological Survey at Newark Air Force Base in 1994

Page 7 of 11

Common Name	Scientific Name
PLANTS (Continued)	
Nightshade Family	Solanaceae
Black nightshade	<i>Solanum nigrum</i>
Cattail Family	Typhaceae
Narrow-leaved cattail	<i>Typha angustifolia</i>
Broad-leaved cattail	<i>Typha latifolia</i>
Elm Family	Ulmaceae
American elm	<i>Ulmus americana</i>
Nettle Family	Urticaceae
Canada wood nettle	<i>Laportea canadensis</i>
Clearweed	<i>Pilea pumila</i>
Stinging nettle	<i>Urtica dioica</i>
Valerian Family	Valerianaceae
Corn-salad	<i>Valerianella umbilicata</i>
Vervian Family	Verbanaceae
Blue vervain	<i>Verbena hastata</i>
White vervain	<i>Verbena urticifolia</i>
Wingstem	<i>Verbesina alternifolia</i>
Violet Family	Violaceae
Common blue violet	<i>Viola sororia</i>
Creamy violet	<i>Viola striata</i>
Grape Family	Vitaceae
Virginia creeper	<i>Parthenocissus quinquefolia</i>
River-bank grape	<i>Vitis riparia</i>

**Table G-1. Species Observed during the Ohio Department of Natural Resources
Biological Survey at Newark Air Force Base in 1994**
Page 8 of 11

Common Name	Scientific Name
BIRDS	
Plovers	Charadriidae
Killdeer	<i>Charadrius vociferus</i>
Pigeons, Doves	Columbidae
Mourning dove	<i>Zenaida macroura</i>
Swifts	Apodidae
Chimney swift ^(a)	<i>Chaetura pelagica</i>
Kingfishers	Alcedinidae
Belted kingfisher	<i>Ceryle alcyon</i>
Woodpeckers	Picidae
Common flicker	<i>Colaptes auratus</i>
Downy woodpecker	<i>Picoides pubescens</i>
Swallows	Hirundinidae
Barn swallow ^(a)	<i>Hirundo rustica</i>
Rough-winged swallow ^(a)	<i>Stelgidopteryx serripennis</i>
Jays, Magpies, and Crows	Corvidae
American crow	<i>Corvus brachyrhynchos</i>
Blue jay	<i>Cyanocitta cristata</i>
Chickadees and Titmice	Paridae
Tufted titmouse	<i>Parus bicolor</i>
Carolina chickadee	<i>Parus carolinensis</i>
Nuthatches	Sittidae
White-breasted nuthatch	<i>Sitta carolinensis</i>
Wrens	Troglodytidae
Carolina wren	<i>Thryothorus ludovicianus</i>
House wren ^(a)	<i>Troglodytes aedon</i>
Bluebirds, Solitaires, Other Thrushes	Turdinae
American robin	<i>Turdus migratorius</i>

Note: (a) Neotropical migrants

**Table G-1. Species Observed during the Ohio Department of Natural Resources
Biological Survey at Newark Air Force Base in 1994**

Page 9 of 11

Common Name	Scientific Name
BIRDS (Continued)	
Mockingbirds and Thrashers	Mimidae
Grey catbird ^(a)	<i>Dumetella carolinensis</i>
Waxwings	Bombycillidae
Cedar waxwing	<i>Bombycilla cedrorum</i>
Starlings	Sturnidae
European starling	<i>Sturnus vulgaris</i>
Vireos	Vireonidae
Warbling vireo ^(a)	<i>Vireo gilvus</i>
Sparrows, Blackbirds, and others	Emberizidae
Yellow warbler ^(a)	<i>Dendroica petechia</i>
Common yellowthroat ^(a)	<i>Geothlypis trichas</i>
Eastern meadowlark	<i>Sturnella magna</i>
Red-winged blackbird	<i>Agelaius phoeniceus</i>
Northern oriole ^(a)	<i>Icterus galbula</i>
Common grackle	<i>Quiscalus quiscula</i>
Northern cardinal	<i>Cardinalis cardinalis</i>
Indigo bunting ^(a)	<i>Passerina cyanea</i>
House finch	<i>Carpodacus mexicanus</i>
American goldfinch	<i>Carduelis tristis</i>
Chipping sparrow ^(a)	<i>Spizella passerina</i>
Song sparrow	<i>Melospiza melodia</i>
Old World Sparrows	Passeridae
House sparrow	<i>Passer domesticus</i>
MAMMALS	
Raccoons and Ringtails	Procyonidae
Raccoon	<i>Procyon lotor</i>
Deer	Cervidae
White-tailed deer	<i>Odocoileus virginianus</i>

Note: (a) Neotropical migrants

**Table G-1. Species Observed during the Ohio Department of Natural Resources
Biological Survey at Newark Air Force Base in 1994
Page 10 of 11**

Common Name	Scientific Name
MAMMALS (Continued)	
Squirrels	Sciuridae
Groundhog	<i>Marmota monax</i>
Voies and Allies	Arvicolidae
Muskrat	<i>Ondatra zibethicus</i>
Rabbits and Hares	Leporidae
Eastern cottontail	<i>Sylvilagus floridanus</i>
REPTILES AND AMPHIBIANS	
Lungless Salamanders	Plethodontidae
Two-lined salamander	<i>Eurycea bislineata</i>
True Frogs	Ranidae
Green frog	<i>Rana clamitans melanota</i>
Toads	Bufonidae
American toad	<i>Bufo americanus</i>
Colubrid Snakes	Colubridae
Northern water snake	<i>Nerodia sipedon</i>
FISHES	
Suckers	Catostomidae
Quillback carpsucker	<i>Carpionodes cyprinus</i>
White sucker	<i>Catostomus commersonii</i>
Northern hog sucker	<i>Hypentelium nigricans</i>
Carps and Minnows	Cyprinidae
Central stoneroller	<i>Compstoma anomalum</i>
Spotfin shiner	<i>Cyprinella spilopterus</i>
Striped shiner	<i>Luxilus chrysocephalus</i>
Silver shiner	<i>Notropis photogenis</i>
Rosyface shiner	<i>Notropis rubellus</i>
Sand shiner	<i>Notropis stramineus</i>

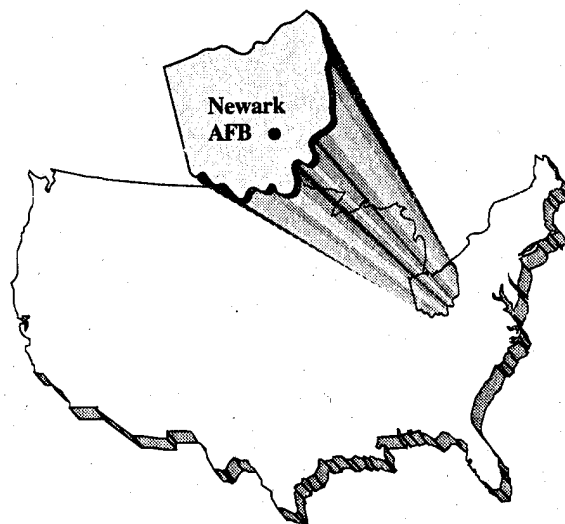
Table G-1. Species Observed during the Ohio Department of Natural Resources
Biological Survey at Newark Air Force Base in 1994

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Common Name	Scientific Name
FISHES (Continued)	
Carps and Minnows (Continued)	<i>Cyprinidae</i>
Bluntnose minnow	<i>Pimephales notatus</i>
Southern redbelly dace	<i>Phoxinus erythrogaster</i>
Blacknose dace	<i>Rhinichthys atratulus</i>
Creek chub	<i>Semotilus atromaculatus</i>
Darters and Perches	<i>Percidae</i>
Greenside darter	<i>Etheostoma blenniodes</i>
Rainbow darter	<i>Etheostoma caeruleum</i>
Johnny darter	<i>Etheostoma nigrum</i>
Fantail darter	<i>Etheostoma flabellare</i>
Orangethroat darter	<i>Etheostoma spectabile</i>

Sources: Britton and Brown, 1970; Burt and Grossenheider, 1952; Hickman, 1993; Ohio Department of Natural Resources, 1994; Peterson, 1980.

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APPENDIX H

APPENDIX H

AIR QUALITY ANALYSIS METHODS AND AIR EMISSIONS INVENTORY FOR NEWARK AIR FORCE BASE

APPENDIX H

AIR QUALITY ANALYSIS METHODS AND AIR EMISSIONS INVENTORY FOR NEWARK AIR FORCE BASE

PRECLOSURE EMISSIONS

Preclosure emissions inventory data for Newark Air Force Base (AFB) are presented in Table H-1. All tables are at the end of this appendix. The preclosure inventory provides a baseline which is a composite of the best available emissions data for operations at Newark AFB. Emissions from heating and power production, motor vehicles, surface coatings, fuel evaporation losses, and solvent degreasing sources were calculated as described in the sections below from data supplied by the Newark AFB Aerospace Guidance and Metrology Center (AGMC) and the Office of Environmental Management (AGMC/EM). Data supplied reflect both 1992 and 1993 conditions; however, operations have remained relatively constant since the late 1980s and the data are assumed to be representative of 1992 preclosure conditions. Emissions from vehicle miles traveled (VMT) were calculated for two categories of data. The direct employee computer VMT were calculated based on the number of base employees, the employee distribution by zip code, average commuter speeds by roadway type, and on-base distances from gates to parking areas. The military VMT category represents emission sources from government vehicles and heavy duty equipment, calculated from fleet mileage data maintained by the Newark AFB Transportation Division. Direct motor vehicle emissions represent the government vehicle VMT and on-site employee VMT. Indirect motor vehicle emissions represent the off-site VMT for direct employee commuter trips.

Boiler Emissions

Boiler emissions were calculated using emission factors from the U.S. Environmental Protection Agency (EPA) AP-42 emission factor document, and information on boiler types, sizes, and fuel use obtained from the Newark AFB Air Quality Utility Information System (AQUIS). Although some of the larger boilers are capable of operating with either natural gas or heating oil fuel, all fuel use in recent years has been natural gas. The emission factors used in the calculations are provided in Table H-2, while the boiler characteristics and emissions are provided in Table H-3.

Generator Emissions

Generator emissions were calculated using emission factors from the U.S. EPA's AP-42 emission factor document and information on generator types,

sizes, and hours of usage obtained from the Newark AFB AQUIS. All of the generators at Newark AFB are standby emergency generators. The hours of usage obtained from the AQUIS database are typical of normal annual usage. The emission factors used in the calculations are provided in Table H-4, while the generator characteristics and emissions are provided in Table H-5.

Solvent Degreasing Emissions

Solvent degreasing emissions were obtained from data listed in the AQUIS database for calendar year 1993. Solvent degreasing emissions for the year included 7,003 pounds of isopropyl alcohol, 6,062 pounds of acetone, 42 pounds of ethyl alcohol, and 6,798 pounds of other miscellaneous volatile organic compounds (VOCs).

Fuel Evaporation Emissions

Fuel evaporation breathing loss emissions from two gasoline storage tanks at Newark AFB were calculated with the U.S. EPA's TANKS2 program using information on physical characteristics of the tanks, storage capacity, annual throughput, and types of pollution control equipment supplied by the AGMC. In addition to the TANKS2 calculations of the breathing/filling/emptying losses associated with the on-base tanks, the filling and spillage losses associated with motor vehicle gasoline pumping were estimated using emission factors from the U.S. EPA's AP-42 emission factor document, i.e., 1.1 pounds of VOC emissions for tank filling and 0.7 pound of VOC emissions for spillage for every 1,000 gallons of gasoline pumped. A summary of the storage tank characteristics and emissions is provided in Table H-6.

Surface Coating Emissions

Emissions of turpentine, naphtha, methyl ethyl ketone (MEK), and stoddard solvent were obtained from data listed in the AQUIS database for calendar year 1993. These substances were included in the surface coating category, primarily as solvents used in surface coating operations. Emissions of these substances for the year included 201 pounds of turpentine, 988 pounds of naphtha, 80 pounds of MEK, and 578 pounds of stoddard solvent. In addition to these four solvents, an inventory of paint and other surface coating material used in 1993 was provided by the AGMC/EM. VOC emissions from the usage of these materials were calculated using density and percent VOC content data (using Tables F-2 and F-3) from the Calculation Methods for Criteria Air Pollutant Emission Inventories (Jagielski et al., 1994) and VOC content data from California's South Coast Air Quality Management District Rules 1113, 1136, and 1145. A summary of the surface coating types, amounts used, densities, VOC content, and VOC emissions is presented in Table H-7.

Military Vehicle Emissions

Military vehicle emissions associated with preclosure conditions at Newark AFB were calculated with emission factors generated by the U.S. EPA's MOBILE5A vehicle emissions model. Input to the model included data on number, types, and annual on-base and off-base mileage for the military fleet vehicles as supplied by the AGMC (Table H-8). Daily VMT were determined as an average by dividing the annual mileage by 365 days per year. The MOBILE5A model was run for conditions representative of the Newark AFB area in each of the four seasons. The seasonal emission factors generated by the model were averaged to determine an appropriate annual emission factor prior to multiplying by the total mileage for the year. A summary of the daily and annual VMT data is presented in Table H-9. Calculated emissions are contained in Table H-10. Emissions of sulfur oxides (SO₂) and particulate matter equal to or less than 10 microns in diameter (PM₁₀) would be negligible.

Commuter Vehicle Emissions

Commuter vehicle emissions were calculated using the same basic methodology used for the military vehicles. The MOBILE5A was used to generate emission factors for the Newark AFB area. The number of employee vehicles was assumed to equal the number of employees times a factor of 0.95 to account for ride sharing. Daily VMT, both on- and off-base, were provided by the transportation analysis conducted for this environmental assessment (EA) and were based on employee zip code data and estimated average trip lengths to and from the base, and from the base gates to and from the parking areas. Annual VMT were estimated by assuming that each employee worked an average of 5 days per week, 50 weeks per year. A summary of the daily and annual VMT data is presented in Table H-9. Calculated emissions are contained in Table H-10. SO₂ and PM₁₀ emissions from the employee vehicles would be negligible.

PROPOSED ACTION EMISSIONS

Under the Proposed Action, operations at Newark AFB would be privatized and would continue in a manner similar to operations under preclosure conditions. The primary difference between emissions which occurred during preclosure and emissions which would occur as part of the Proposed Action would be related to the elimination of the military and the adjustment in the number of civilian employees. The assumption is made that heating and power production, surface coating, fuel evaporation losses, and solvent degreasing emissions would be similar to preclosure levels; i.e., the types of sources and operations associated with heating and power production, surface coating, fuel evaporation losses, and solvent degreasing under the Proposed Action would not change from preclosure conditions. As part of this general assumption, it is further assumed that existing permits would be transferred to the new operators without changes in conditions.

Emissions associated with employee vehicles for the Proposed Action were calculated with the MOBILE5A model using the same methodology described above for preclosure conditions. It was necessary to run the MOBILE5A model specific to the Proposed Action to account for the change in employees and the planned decrease in emission factors that would occur in future years due to more stringent tailpipe exhaust requirements. A summary of VMT emissions for 2001 and 2006 associated with the Proposed Action is provided in Table H-10. Total emissions expected from the Proposed Action in 2001 and 2006 are contained in Table H-11.

INDUSTRIAL ALTERNATIVE EMISSIONS

The Industrial Alternative proposes to reuse Building 4 for light manufacturing and associated warehouse activities. The heating and power production equipment, degreasers, and surface coating operations would be shut down. The permits associated with the equipment and operations would be transferred to the new users or would be canceled and emission reduction credits would be obtained. If credits were obtained, the Air Force would sell the credits or transfer them to the new users. Because the type of work performed in Building 4 would change, the amount and types of emissions generated from this alternative would be different from the amounts and types generated under the Proposed Action and a new methodology was used to estimate the emissions from this alternative. Instead of treating the entire facility as one unit, the facility was divided into different land uses and the emissions from each type of land use were calculated individually. The emissions from the different land uses are presented in Table H-12, while the total Industrial Alternative emissions are presented in Table H-13. The methodology used to estimate the emissions for the different land use types is explained in detail in the following paragraphs.

Industrial Land Use Emissions

Emissions from the industrial land use area planned as part of the Industrial Alternative were calculated using U.S. EPA's Graphical Analytical Data System (EGADS). An indicator-based emission factor was developed from data contained in EGADS for typical industry types found in the region of influence (ROI). EGADS is a PC-based data retrieval program containing point source data from U.S. EPA's Aerometric Information Retrieval System (AIRS) and point, area, and mobile source data from U.S. EPA's 1990 Interim Emissions Inventory.

Data in the EGADS database is not complete; however, sufficient data were available to select point source information for the industry types considered most likely to be located on the base after redevelopment. Per employee point source emission factors were developed from data available for these industry types by summing the reported emissions and dividing by the total number of employees associated with the industry types. It was assumed

that the resulting per employee factors could be multiplied by the estimate of reuse-related employees working in the industrial land use area to provide reasonable estimates of the industrial point source emissions. The point source emission factors and calculated emissions are presented in Table H-12. No point source data were reported in EGADS for PM_{10} . It is assumed that future PM_{10} point source emissions associated with the Industrial Alternative land use area will be well controlled and negligible in magnitude.

Area and off-road mobile source emissions associated with the industrial land use area were also calculated from information contained in the EGADS database. Per employee area/off-road mobile source emission factors were developed by summing the area/off-road mobile source emissions data reported for all source classification codes representative of industry that could be located on the former base and dividing by the total number of employees associated with these industries. The major emission source types considered in this manner included natural gas combustion, surface coating operations, solvent use for various industries, and on-site incineration. The area/off-road mobile source emission factors and calculated emissions are presented in Table H-12. No area/off-road mobile source data were reported in EGADS for SO_2 or PM_{10} . It is assumed that future SO_2 and PM_{10} area and off-road mobile source emissions associated with the industrial land use area would be negligible in magnitude.

Commercial Land Use Emissions

Emissions from the commercial land use area planned as part of the Industrial Alternative were also calculated with EGADS. No point source emissions are available for the commercial land use category, so only emissions from area and off-road mobile sources were calculated. Per employee area/off-road mobile source emission factors were developed by summing the area/off-road mobile source emissions data reported for all source classification codes in the ROI (representative of commercial activities that could be located on Newark AFB) and dividing by the total number of employees associated with these activities. The major emission source types considered in this manner included heat production and solvent usage during dry cleaning activities. The area/off-road mobile source emission factors and calculated emissions are presented in Table H-12. No area/off-road mobile source data were reported in EGADS for SO_2 or PM_{10} , and it is assumed that future SO_2 and PM_{10} area and off-road mobile source emissions associated with the commercial land use area would be negligible in magnitude.

Table H-1. Newark AFB Preclosure Emissions Inventory (tons/year)

Source	CO	VOC	NO _x	PM ₁₀	SO _x
Boilers	1.56	0.12	6.37	0.64	0.03
Generators	0.05	0.02	0.24	0.02	0.02
Solvent degreasing ^(a)	0.00	9.95	0.00	0.00	0.00
Fuel evaporation	0.00	0.04	0.00	0.00	0.00
Surface coating	0.00	1.60	0.00	0.00	0.00
Mobile Sources					
On-base (military)	1.61	0.17	0.11	Negl.	Negl.
Off-base (military)	1.67	0.19	0.37	Negl.	Negl.
Subtotal (military)	3.28	0.35	0.47	Negl.	Negl.
On-base (commuter)	6.28	0.65	0.38	Negl.	Negl.
Off-base (commuter)	217.61	22.91	31.85	Negl.	Negl.
Subtotal (commuter)	223.89	23.56	32.23	Negl.	Negl.
Total	228.78	35.64	39.32	0.66	0.04

Note: (a) Solvent degreasing emissions do not include chlorinated solvents.

CO = carbon monoxide

Negl. = negligible

NO_x = nitrogen oxides

PM₁₀ = particulate matter equal to or less than 10 microns in diameter

SO_x = sulfur oxides

VOC = volatile organic compound

Table H-2. Boiler Emission Factors

Boiler Size (MMBTU/hour)	Natural Gas Emission Factors (pounds/MMCF)				
	CO	VOC ^(a)	NO _x	PM ₁₀	SO _x
0.3 - <10	21	2.40	100	12.0	0.6
10 - 100	35	2.40	140	13.7	0.6

Note: (a) VOC factors determined as VOC speciation weight fraction minus methane speciation weight fraction, where speciation weight fractions are as shown in the California Air Resources Board's Speciation Manual, Table II-3.

MMBTU = million British thermal units

MMCF = million cubic feet

CO = carbon monoxide

NO_x = nitrogen oxides

PM₁₀ = particulate matter equal to or less than 10 microns in diameter

SO_x = sulfur oxides

VOC = volatile organic compound

Source: U.S. EPA 1993 (AP-42, Tables 1.4-1, -2, and -3); California Air Resources Board.

Table H-3. Newark AFB Boiler Emissions

Source	AQUIS ID	Rating (MMBTU/hour)	Natural Gas		Emissions (pounds/year)				
			Fuel Consumption (MMCF/year)	CO	VOC	NO _x	PM ₁₀	SO _x	
Boiler water plant H-11	7020	1,250	1,179	24.8	2.8	117.9	14.1	0.7	
Boiler blue room H-8	7021	1,250	1,179	24.8	2.8	117.9	14.1	0.7	
Boiler cut & weld H-7	7017	1,562	1,473	30.9	3.5	147.3	17.7	0.9	
Boiler METCAL	7011	2,100	1,981	41.6	4.8	198.1	23.8	1.2	
Boiler Minuteman III	7016	3,125	2,947	61.9	7.1	294.7	35.4	1.8	
Boiler Civil Engineering hold area H-2	7018	3,125	2,947	61.9	7.1	294.7	35.4	1.8	
Boiler Base Engineering Room H-3	7019	3,125	2,947	61.9	7.1	294.7	35.4	1.8	
Boiler Clean Room 7	7012	3,350	3,160	66.3	7.6	316.0	37.9	1.9	
Boiler #2	7010	10,450	0,000	0.0	0.0	0.0	0.0	0.0	
Boiler #1	7001	16,700	8,032	281.1	19.3	1,124.5	110.0	4.8	
Boiler #3	7009	21,000	70,302	2,460.6	169.0	9,842.3	963.1	42.2	
Total (pounds/year)				3,115.8	231.1	12,748.1	1,286.9	57.8	
Total (tons/year)				1.56	0.12	6.37	0.64	0.03	

AQUIS = Air Quality Utility Information System

CO = carbon monoxide

METCAL = metrology calibration

MMBTU = million British thermal units

MMCF = million cubic feet

NO_x = nitrogen oxidesPM₁₀ = particulate matter equal to or less than 10 microns in diameterSO_x = sulfur oxides

VOC = volatile organic compound

Table H-4. Generator Emission Factors

Generator Size (horsepower)	Diesel Fuel Emission Factors (grams/kilowatt-hour)				
	CO	VOC ^(a)	NO _x	PM ₁₀	SO _x
<600	4.06	1.57	18.8	1.29	1.25

Note: (a) VOC factors determined as VOC speciation weight fraction minus methane speciation weight fraction, where speciation weight fractions are as shown in the California Air Resources Board's Speciation Manual, Table II-9. Total VOC calculated as sum of aldehydes, exhaust hydrocarbons, and crankcase hydrocarbons.

CO = carbon monoxide

NO_x = nitrogen oxides

PM₁₀ = particulate matter equal to or less than 10 microns in diameter

SO_x = sulfur oxides

VOC = volatile organic compound

Source: U.S. EPA, 1993 (Table 3.3-2).

Table H-5. Newark AFB Generator Emissions

Source	AQUIS ID	Rating (kilowatt)	Usage (hours/year)	Emissions (pounds/year)				
				CO	VOC	NO _x	PM ₁₀	SO _x
Emergency generator	7938	20	29.2	4.87	1.89	22.57	1.54	1.50
Emergency generator	7934	30	7.5	1.88	0.73	8.70	0.60	0.58
Emergency generator	7935	30	18.6	4.66	1.80	21.57	1.48	1.43
Emergency generator	7942	30	10.6	2.65	1.03	12.29	0.84	0.82
Emergency generator	7939	39	6.9	2.25	0.87	10.40	0.71	0.69
Emergency generator	7937	54	6.1	2.75	1.06	12.73	0.87	0.85
Emergency generator	7941	365	27.5	83.79	32.41	387.98	26.55	25.80
Total (pounds/year)				102.85	39.79	476.24	32.59	31.67
Total (tons/year)				0.05	0.02	0.24	0.02	0.02

Note: All emissions based on an average load factor of 0.9326.

AQUIS = Air Quality Utility Information System

CO = carbon monoxide

NO_x = nitrogen oxides

PM₁₀ = particulate matter equal to or less than 10 microns in diameter

SO_x = sulfur oxides

VOC = volatile organic compound

Table H-6. Newark AFB Fuel Evaporation Emissions

Source	AQUIS ID	Capacity (gallons)	Net		VOC Emissions (pounds/year)		
			Throughput (gallons/year)	Breathing Filling ^(a)	Vehicle Filling ^(b)	Spillage ^(c)	Total
Horizontal Fixed Roof UST (length = 12 feet; diameter = 8 feet)	7005	4,500	6,750	53.98	7.43	4.73	66.14
Horizontal Fixed Roof UST (length = 11 feet; diameter = 4 feet)	7006	1,050	1,680	13.43	1.85	1.18	16.46
Total (pounds/year)				67.41	9.28	5.91	82.60
Total (tons/year)				0.033	0.005	0.003	0.041

Notes: (a) Emissions calculated with the U.S. EPA's TANKS 2 program.

(b) Emissions calculated based on an emission factor of 1.1 pounds per 1,000 gallons (U.S. EPA, 1993).

(c) Emissions calculated based on an emission factor of 0.7 pound per 1,000 gallons (U.S. EPA, 1993).

AQUIS = Air Quality Utility Information System

UST = underground storage tank

VOC = volatile organic compound

Table H-7. Newark AFB Surface Coating Emissions
Page 1 of 2

ID No.	Description	Quantity (gallons/year)	Density ^(b) (pounds/gallon)	VOC Content ^(c) (percent)	Assumptions	VOC Emissions (pounds/year)
8010-00-067-5437	Aerosol enamel	0.25	7.36	50.0	U.S. EPA solvent; 50% solvent	0.92
8010P252009202	Aerosol paint	0.5	7.36	50.0	U.S. EPA solvent; 50% solvent	1.84
8010-00-988-1458	Enamel	1.0	7.60	60.4	Air dry enamel	4.59
8010-00-348-7715	Enamel	0.75	7.60	60.4	Air dry enamel	3.44
8010-00-527-3198	Enamel, red gloss	2.0	7.60	60.4	Air dry enamel	9.18
8010-00-664-4761	Enamel, white	3.0	7.60	60.4	Air dry enamel	13.77
8010-01-314-0392	Epoxy coating	1.0	10.50	42.8	Primer, Epoxy	4.49
8030-20-695-65-2006	Flex coat W/I = 5	1.0	10.50	42.8	Primer, Epoxy	4.49
8010-00-958-8147	Lacquer	0.25	7.90	73.9	Spraying	1.46
8010-00-721-9750	Lacquer	0.13	7.90	73.9	Spraying	0.73
8010-00-166-3147	Lacquer, black	0.75	7.90	73.9	Spraying	4.38
8010-00-582-5382	Lacquer, flat black	16.0	7.90	73.9	Spraying	93.41
8010-00-257-5376	Lacquer, TT-L-32	0.25	7.90	73.9	Spraying	1.46
8010-P3801	Latex enamel ^(a)	20.0	NA	1.30	Water base paint	26.00
8010-BB66W1	Metal finish primer	40.0	9.40	51.0	Primer surface	191.76
8520PO591242-006	Paint cleaner (paint goof)	8.5	7.36	50.0	EPA solvent	31.28
8010-01-120-8382	Paint forest green	10.0	7.60	60.4	Air dry enamel	45.90
8010-01-029-8066	Paint remover	0.25	7.36	50.0	U.S. EPA solvent	0.92
8010PTUFF-Job	Paint remover	1.5	7.36	50.0	U.S. EPA solvent	5.52
8010-00-133-5414	Paint thinner ^(a)	1.0	NA	7.22	Toluene	7.22
8010P0632722006	Paint tint base ^(a)	21.0	NA	1.30	Water base paint	27.30
8010-00-663-2673	Paint, clear	2.0	7.60	60.4	Air dry enamel	9.18

Table H-7. Newark AFB Surface Coating Emissions
Page 2 of 2

ID No.	Description	Quantity (gallons/year)	Density ^(b) (pounds/gallon)	VOC Content ^(c) (percent)	Assumptions	VOC Emissions (pounds/year)
8010-PB42W101	Paint, metal	1.0	7.60	60.4	Air dry enamel	4.59
8010-00754-2609	Paint, rubber ^(a)	2.0	NA	2.30	Coating; SCAQMD 1145	4.60
8010P3718	Paint, white tint ^(a)	232.0	NA	1.30	Water base paint	301.60
8010-01-015-6498	Polycoat, gray	6.0	9.20	68.3	Polyurethane	37.70
8010-PO38K41	Polyurethane	22.0	9.20	68.3	Polyurethane	138.24
8010-00-405-5030	Polyurethane	1.0	9.20	68.3	Polyurethane	6.28
8010-00-754-2610	Primer coat	45.0	9.40	51.0	Primer surface	215.73
8030-00-086-1506	Resin coating ^(a)	1.0	NA	5.70	Topcoat; SCAQMD 1136	0.71
8010-P3787	Tint base ^(a)	30.0	NA	1.30	Water base paint	39.00
6810-00-281-2002	Toluene ^(a)	4.0	NA	7.22	Toluene	28.88
8010-00-900-2938	Traffic paint, white ^(a)	6.0	NA	2.09	250 grams/liter; SCAQMD 1113	12.52
8010-00-900-3650	Traffic paint, yellow ^(a)	33.0	NA	2.09	250 grams/liter; SCAQMD 1113	68.85
Total (pounds/year)						1,347.94
Total (tons/year)						0.67

Notes: (a) For this coating type, VOC content is in units of pounds/gallon.

(b) Densities obtained from Calculation Methods for Criteria Air Pollutant Emission Inventories (Jagielski et al. 1994).

(c) VOC contents obtained from Calculation Methods for Criteria Air Pollutant Emission Inventories (Jagielski et al. 1994), and from SCAQMD's Rules and Regulations.

EPA = Environmental Protection Agency

NA = not applicable

SCQMD = South Coast Air Quality Management District (California)

VOC = volatile organic compound

Newark AFB Disposal and Reuse EA

Table H-8. Newark AFB 1992 Military Vehicle Fleet Information

Vehicle Category/Type	Number of Vehicles	On-Base VMT	Off-Base VMT	Total VMT
Gasoline <8,000 pounds				
Sedans	3	3,027	57,517	60,544
Police cruisers	1	8,266	435	8,701
Station wagons	3	916	17,403	18,319
Passenger vans	1	645	12,263	12,908
Command van	1	1,443	76	1,519
Pickup truck	2	5,462	1,821	7,283
4x4	2	13,093	2,311	15,404
Subtotal	13	32,852	91,826	124,678
Gasoline >8,000 pounds				
Cargo truck	1	51	965	1,016
Fire trucks	2	2,355	0	2,355
Subtotal	3	2,406	965	3,371
Diesel <8,000 pounds				
Ambulance	1	532	28	560
Diesel >8,000 pounds				
Cargo trucks	1	51	965	1,016
5-ton tractor truck	1	475	9,017	9,492
5-ton dump truck	1	330	17	347
Subtotal	3	856	9,999	10,855
Total	20	36,646	102,818	139,464

VMT = vehicle miles traveled

Table H-9. Employee Commuter VMT Information

Alternative	Number of Vehicles	VMT		
		Daily (per Vehicle)	Daily (Total)	Annual (Total)
Preclosure (1992)				
On-Base				
Civilian ^(a)	2,119	0.3	724.8	181,200
Military ^(b) (gas)	16	6.0	96.6	35,259
Military ^(b) (diesel)	4	1.0	3.8	1,387
Off-Base				
Civilian ^(a)	2,119	29.0	61,452.3	15,363,075
Military ^(b) (gas)	16	15.9	254.2	92,783
Military ^(b) (diesel)	4	6.9	27.5	10,038
Proposed Action^(c)				
2001 - On-Base	2,079	0.4	748.40	187,099
2001 - Off-Base	2,079	29.0	60,267.83	15,066,957
2006 - On-Base	2,435	0.4	876.67	219,166
2006 - Off-Base	2,435	29.0	70,597.10	17,649,274
Industrial Alternative^(c)				
2001 - On-Base	419	0.4	150.84	37,711
2001 - Off-Base	419	29.0	12,147.22	3,036,805
2006 - On-Base	827	0.4	297.58	74,395
2006 - Off-Base	827	29.0	23,963.90	5,990,975
No-Action Alternative^(d)				
On-Base	5	10.0	50.0	13,000
Off-Base	5	30.0	150.0	39,000

Notes: (a) Number of vehicles = number of base employees x 0.95, where 0.95 = ride sharing factor; total daily VMT calculated by the transportation resource; annual VMT = total daily VMT x 250 days/year.

(b) Number of vehicles and annual VMT supplied by Newark AFB; total daily VMT = annual VMT/365 days/year.

(c) Number of vehicles = number of base employees x 0.95, where 0.95 = ride sharing factor; daily VMT assumed to be similar to preclosure conditions; annual VMT = total daily VMT x 250 days/year.

(d) Number of vehicles and daily VMT estimated; annual VMT = total daily VMT x 260 days/year.

VMT = vehicle miles traveled

Table H-10. Preclosure, Closure, and Reuse Vehicle VMT Emissions

Alternative	Emissions (tons/year)		
	VOC	CO	NO _x
Preclosure (1992)			
On-Base			
Civilian	0.65	6.28	0.38
Military (diesel)	0.00	0.01	0.02
Military (gas)	0.16	1.60	0.09
Subtotal	0.81	7.89	0.49
Off-Base			
Civilian	22.91	217.61	31.85
Military (diesel)	0.02	0.07	0.17
Military (gas)	0.17	1.60	0.20
Subtotal	23.10	219.28	32.22
Preclosure Total	23.91	227.17	32.71
Proposed Action			
2001 - On-Base	0.49	4.89	0.70
2001 - Off-Base	18.18	160.74	26.65
2001 - Total	18.67	165.63	27.34
2006 - On-Base	0.52	5.47	0.65
2006 - Off-Base	19.02	156.15	28.34
2006 - Total	19.54	161.61	28.99
Industrial Alternative			
2001 - On-Base	0.10	0.99	0.14
2001 - Off-Base	3.66	32.40	5.37
2001 - Total	3.76	33.38	5.51
2006 - On-Base	0.18	1.86	0.22
2006 - Off-Base	6.46	53.00	9.62
2006 - Total	6.63	54.86	9.84
No-Action Alternative (1996)			
On-Base	0.04	0.40	0.04
Off-Base	0.05	0.49	0.08
No-Action Total	0.09	0.89	0.11

CO = carbon monoxide
 NO_x = nitrogen oxides
 VMT = vehicle miles traveled
 VOC = volatile organic compound

Table H-11. Proposed Action Emissions

Year/Source	Emissions (tons/year)				
	CO	VOC	NO _x	PM ₁₀	SO _x
2001					
Boilers	1.56	0.12	6.37	0.64	0.03
Generators	0.05	0.02	0.24	0.02	0.02
Solvent degreasing ^(a)	0.00	9.95	0.00	0.00	0.00
Fuel evaporation	0.00	0.04	0.00	0.00	0.00
Surface coating	0.00	1.60	0.00	0.00	0.00
Mobile (commuter) on-base	4.89	0.49	0.70	Negl.	Negl.
Mobile (commuter) off-base	160.74	18.18	26.65	Negl.	Negl.
Total	167.24	30.40	33.96	0.66	0.05
2006					
Boilers	1.56	0.12	6.37	0.64	0.03
Generators	0.05	0.02	0.24	0.02	0.02
Solvent degreasing ^(a)	0.00	9.95	0.00	0.00	0.00
Fuel evaporation	0.00	0.04	0.00	0.00	0.00
Surface coating	0.00	1.60	0.00	0.00	0.00
Mobile (commuter) on-base	5.57	0.52	0.65	Negl.	Negl.
Mobile (commuter) off-base	156.15	19.02	28.34	Negl.	Negl.
Total	163.23	31.27	35.60	0.66	0.05

Note: (a) Solvent degreasing emissions do not include chlorinated solvents.

CO = carbon monoxide

Negl. = negligible

NO_x = nitrogen oxides

PM₁₀ = particulate matter equal to or less than 10 microns in diameter

SO_x = sulfur oxides

VOC = volatile organic compound

Table H-12. Industrial Alternative Emissions

Year/Source	Emissions (tons/year)				
	CO	VOC	NO _x	PM ₁₀	SO _x
2001					
Industrial land use	16.37	59.04	97.53	Negl.	6.18
Commercial land use	0.21	0.03	1.04	Negl.	Negl.
Public facilities/recreation	0.00	0.00	0.00	0.00	0.00
Mobile (commuter) on-base	0.99	0.10	0.14	Negl.	Negl.
Mobile (commuter) off-base	32.40	3.66	5.37	Negl.	Negl.
Total	49.97	62.83	104.08	Negl.	6.18
2006					
Industrial land use	32.74	118.09	195.05	Negl.	12.35
Commercial land use	0.42	0.06	2.08	Negl.	Negl.
Public facilities/recreation	0.00	0.00	0.00	0.00	0.00
Mobile (commuter) on-base	1.86	0.18	0.22	Negl.	Negl.
Mobile (commuter) off-base	53.00	6.46	9.62	Negl.	Negl.
Total	88.02	124.79	206.97	Negl.	12.35

CO = carbon monoxide

Negl. = negligible

NO_x = nitrogen oxidesPM₁₀ = particulate matter equal to or less than 10 microns in diameterSO_x = sulfur oxides

VOC = volatile organic compound

Table H-13. Land Use Emissions Associated with the Industrial Alternative
Page 1 of 2

Source Type	Year	Employees	VOC	NO _x	CO	SO ₂	PM ₁₀
ROI Industrial Point Sources ^(a) in tons/year	NA	7,733	22	63	22	143	ND
Industrial Per Employee Point Source Factor in tons/employee/year	NA	7,733	0.0028	0.0081	0.0028	0.0185	--
ROI Industrial Area/Off-Road Mobile Sources ^(b) in tons/year	NA	7,733	1,345	2,195	357	ND	ND
Industrial Per Employee Area/Off- Road Mobile Source Factor in tons/employee/year	NA	7,733	0.1739	0.2838	0.0462	--	--
Reuse-Related Industrial Point Source Emissions in tons/year and (tons/day)	2001	334	0.95 (0.00) ^(c)	2.72 (0.01)	0.95 (0.00) ^(c)	6.18 (0.02)	--
	2006	668	1.90 (0.01)	5.44 (0.01)	1.90 (0.01)	12.35 (0.03)	--
Reuse-Related Industrial Area/Off- Road Mobile Source Emissions in tons/year and (tons/day)	2001	334	58.09 (0.16)	94.81 (0.26)	15.41 (0.04)	--	--
	2006	668	116.19 (0.32)	189.61 (0.52)	30.84 (0.08)	--	--
Reuse-Related Total Industrial Emissions in tons/year and (tons/day)	2001	334	59.04 (0.16)	97.53 (0.27)	16.37 (0.04)	6.18 (0.02)	--
	2006	668	118.09 (0.32)	195.05 (0.53)	32.74 (0.09)	12.35 (0.03)	--

Notes: (a) Point source emissions are based on data available from the U.S. EPA's Graphical Aerometric Data System (EGADS) for industries in the ROI considered representative of potential reuse-related industry types.

(b) Area/off-road mobile source emissions are based on data available from the U.S. EPA's Graphical Aerometric Data System (EGADS) for Source Category Codes in the ROI considered representative of potential reuse-related industrial sources.

(c) Emissions of 0.00 tons/day indicate emissions are less than 0.005 tons/day.

CO = carbon monoxide

NA = not applicable

ND = no data

NO_x = nitrogen oxide

PM₁₀ = particulate matter equal to or less than 10 microns in diameter

ROI = region of influence

SO₂ = sulfur dioxide

VOC = volatile organic compound

Table H-13. Land Use Emissions Associated with the Industrial Alternative
Page 2 of 2

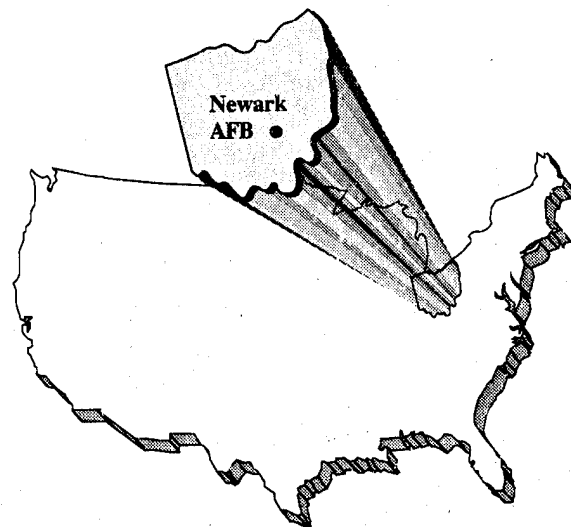
Source Type	Year	Employees	VOC	NO _x	CO	SO ₂	PM ₁₀
ROI Commercial Area/Off-Road Mobile Sources ^(d) in tons/year	NA	112,763	38	1,234	248	ND	ND
Commercial Per Employee Area/Off-Road Mobile Source Factor in tons/employee/year	NA	112,763	0.0003	0.0109	0.0022	--	--
Reuse-Related Commercial Area/Off-Road Mobile Emissions; tons/year and (tons/day)	2001	95	0.03 (0.00) ^(c)	1.04 (0.00) ^(c)	0.21 (0.00) ^(c)	--	--
	2006	190	0.06 (0.00) ^(c)	2.08 (0.01) ^(c)	0.42 (0.00) ^(c)	--	--

Notes: (c) Emissions of 0.00 tons/day indicate emissions are less than 0.005 tons/day.

(d) Area/Off-Road Mobile source emissions are based on data available from the U.S. EPA's Graphical Aerometric Data System (EGADS) for Source Category Codes in the ROI considered representative of potential reuse-related commercial sources.

CO = carbon monoxide
 NA = not applicable
 ND = no data
 NO_x = nitrogen oxide
 PM₁₀ = particulate matter equal to or less than 10 microns in diameter
 ROI = region of influence
 SO₂ = sulfur dioxide
 VOC = volatile organic compound

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APPENDIX I

APPENDIX I
AGENCY LETTERS AND CONSULTATION



United States Department of the Interior

BUREAU OF MINES
Intramountain Field Operations Center
P.O. Box 25086
Building 20, Denver Federal Center
Denver, Colorado 80226

December 02, 1993

Lt Co. Gary P. Baumgartel
AFCEE/ESE, 8106 Chennault Road
Brooks AFB TX 78235-5318

Dear Lt Co. Baumgartel:

Subject: Notice of Intent to Prepare an Environmental Impact
Statement for Disposal and Reuse of Seven Air Force Bases
(ER 93/903)

Personnel of the Bureau of Mines, reviewed the Notice of Intent (NOI) for possible conflict with mineral resources and mineral-producing facilities, as requested by the Director, Office of Environmental Affairs, Department of the Interior. In some instances various mineral resources are situated on or near the Air Force base being considered for disposal.

Preliminary review of available data suggests that the mineral resources included below should be considered during preparation of the various environmental documents.

Gentile AFB Station - Dayton, Montgomery County, Ohio:

Nine sand and gravel pits and four limestone quarries are active in the county. According to state records, about 2.5 million tons of construction aggregates were produced in the county in 1992. Base closure is not expected to significantly affect area mineral resources.

Griffiss AFB - Rome, Oneida County, New York:

At least 12 companies are currently producing construction sand and gravel from 16 pits in Oneida County. At least three of these operations are near the town of Rome. Beazer USA/Hanson is mining crushed limestone southeast of Griffiss in the vicinity of the town of Oriskany. Industrial sand is produced 15 miles west of Rome near the town of McConnellsville. Area mineral resources are not expected to be significantly affected by base closure.

March AFB - Riverside, Riverside County, California:

The area is underlain by sand and gravel. USGS topographic maps of the area show at least five gravel pits and one quarry near the western side of the base. Two pipelines on the north side of the base also are shown on area USGS topographic maps. Area mineral resources and pipeline operations probably would not be significantly impacted by base closure.

Newark AFB - Newark, Licking County, Ohio:

Four sand & gravel pits, one salt brine operation, and one clay operation are active in the county. One sand and gravel pit and the salt operation are near Newark. No significant impact to mineral resources is expected with base closure.

K. I. Sawyer AFB - Marquette, Marquette County, Michigan:

The area of the base is covered by glacially derived material. Four sand and gravel pits, near the western side of the base, are shown on USGS topographic maps of the area. Sand and gravel, mined in the vicinity of the base, probably was used as fill material for base construction. Significant impacts to mineral resources in the area are not expected with base closure.

O'Hare International Airport AF Reserve Station - Chicago, Illinois:

Deposits of clay, limestone/dolomite, and sand and gravel have been mined in the Chicago area. USGS topographic maps of the area show at least one clay pit on the eastern side of the O'Hare International Airport complex, a quarry is shown four miles to the south in the community of Elmhurst, and a large pit area (possible quarry) is about four miles to the north in the Northfield area. Again, no impact is expected to mineral resources with base closure.

Plattsburg AFB - Plattsburg, Clinton County, New York:

Construction sand and gravel is mined by four companies operating six pits in Clinton County. At least four of the operations are in the vicinity of the town of Plattsburg. Plattsburg Quarries Inc. currently mines crushed limestone near Plattsburg. Most of the crushed stone is used for concrete and bituminous aggregate and roadbase. Base closure is not expected to significantly affect mineral resources in the area.

A discussion should be included in the planned Environmental Impact Statement stating whether these or any other mineral resources are present on the affected bases and how they would be affected by disposal and reuse. If no adverse impacts to mineral resources are identified, a statement to that effect should be included.

We appreciate this opportunity to provide comments on the proposed project. Our comments are drawn from available information, are provided on a technical assistance basis only, and may not reflect the position of the Department of the Interior.

If you have questions regarding this review, please contact Robert Wood at (303) 236-0451.

A handwritten signature in cursive script, reading "Mark H. Hibpshman".

Mark H. Hibpshman
Supervisory Physical Scientist



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services
6950-H Americana Parkway
Reynoldsburg, Ohio 43068

IN REPLY REFER TO:

COMM: 614/469-6923 FAX: 614/469-6919
February 23, 1994

Mr. William A. Myers, AICP, Acting Chief
Environmental Planning Division
HQ AFCEE/ESE, Dept. of the Air Force
8106 Chennault Road
Brooks Air Force Base, Texas 78235-5318

Dear Mr. Myers:

This letter responds to your December 1993 request for information on threatened and endangered species. Your request is related to an EIS currently underway which examines alternatives for reuse or disposal of Newark Air Force Base in Licking County, Ohio.

This technical assistance letter is submitted in accordance with provisions of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.) and the Endangered Species Act, of 1973, as amended.

Endangered or Threatened Species

The Newark Air Force Base lies within the range of the Federally endangered Indiana bat (Myotis sodalis). We will not know whether or not the Indiana bat will be affected by reuse or disposal until you coordinate further with our office. Such coordination may be required on a project by project basis in order to fulfill consultation requirements of the Endangered Species Act, as amended.

Candidate Species

Though action is not required for candidate species, we provide the following comment, for your information. Our files show Licking County to be within the range of a Federal Category 2 candidate species called the hellbender (a salamander, Cryptobranchus alleganiensis).

Additional Comments

Two divisions of the Ohio Department of Natural Resources, the Division of Wildlife (DOW, 614-265-6300) and the Division of Natural Areas and Preserves (DNAP, 614-265-6472), maintain lists of plants and animals of concern to the State of Ohio. The Ohio Environmental Protection Agency (OEPA, 614-644-2856) also maintains lists of fish and invertebrate species found in many of Ohio's

rivers and streams. If you have not already done so, please contact each of these agencies to obtain site-specific information on species of State concern.

If we can be of further assistance, please feel free to contact Buddy B. Fazio at this office.

Sincerely,


Kent E. Kroonemeyer
Supervisor

cc: DOW, Wildlife Environmental Section, Columbus, OH
ODNR, Office of Realty and Land Management, Columbus, OH
Ohio EPA, Water Quality Monitoring, Attn: G.Hesse, Columbus, OH
US EPA, Office of Environmental Review, Chicago, IL

rivers and streams. If you have not already done so, please contact each of these agencies to obtain site-specific information on species of State concern.

If we can be of further assistance, please feel free to contact Buddy B. Fazio at this office.

Sincerely,


Kent E. Kroonemeyer
Supervisor

cc: DOW, Wildlife Environmental Section, Columbus, OH
ODNR, Office of Realty and Land Management, Columbus, OH
Ohio EPA, Water Quality Monitoring, Attn: G.Hesse, Columbus, OH
US EPA, Office of Environmental Review, Chicago, IL



George V. Voinovich • Governor
Frances S. Buchholzer • Director

December 29, 1993

William A. Myers, Acting Chief
Environmental Planning Division
HQ AFCEE/ESE
8106 Chennault Road
Brooks AFB, TX 78235-5318

Dear Mr. Myers:

After reviewing our maps and files, I find the Division of Natural Areas and Preserves currently contains no records of rare and endangered species in the Newark Air Force Base project area.

There are no existing or proposed nature preserves or scenic rivers in the project area, and we are unaware of any unique ecological sites in the vicinity of the Heath, Licking County site. The Newark AFB is to be inventoried by the Division of Natural Areas and Preserves, Ohio Department of Natural Resources, in 1994. For more information about the upcoming surveys, please contact the Division Zoologist, Daniel Rice, telephone (614) 265-6469.

Because our inventory program relies on information supplied by a number of individuals and organizations, a lack of records for any particular area is not a statement that special plant or animal species are absent from a site. Please note that we inventory only high-quality plant communities and do not maintain an inventory of all Ohio wetlands.

Please contact me if I can be of further assistance.

Sincerely,

JENNIFER HILLMER

Jennifer Hillmer, Ecological Analyst
Division of Natural Areas and Preserves

JH/ks

cc: Dan Rice

Rec'd 4 Jan 94

Ohio Historic Preservation Office

Ohio Historical Center
1982 Velma Avenue
Columbus, Ohio 43211-2497
614/297-2470
Fax: 297-2546



OHIO
HISTORICAL
SOCIETY
SINCE 1885

January 25, 1994

Mr. Don Kellogg
Newark AFB EIS Project Manager
Environmental Planning Division
HQ AFCEE/ESE
8106 Chennault Road
Brooks AFB, TX 78235-5318

Re: Newark Air Force Base Closure
Licking County, Ohio

Dear Mr. Kellogg,

This is in response to correspondence from your office dated December 22, 1993 (received December 28) regarding the above referenced project. The comments of the Ohio Historic Preservation Office (OHPO) are submitted in accordance with provisions of the National Historic Preservation Act of 1966, as amended (16 U.S.C. 470 [36 CFR 800]); the Department of the Air Force serves as the lead federal agency. My staff has reviewed this project, and I offer the following comments.

The project entails closure of the Newark Air Force Base (Newark AFB). OHPO review of this project encompasses a range of issues concerning the effect or potential effect, direct and indirect, for the implementation of the base closure plan. OHPO concerns extend to known historic properties as well as properties which have not yet been identified. Although this letter is primarily concerned with Newark AFB, given the proximity of the adjacent Newark-Heath Airport and the presence of the prehistoric Newark Earthworks, it is necessary for us to consider effects beyond the limits of the project area.

OHPO has received and reviewed Phase I and II reports comprising an intensive archaeological survey of the approximately 70 acre Newark AFB property. The Phase I report is titled "A Phase I Archaeological Survey of the Newark Air Force Base, Licking County, Ohio" by James L. Murphy, December 20, 1989. The Phase II report is titled "Phase II Archaeological Survey of the Newark Air Force Station, Licking County, Ohio" by James L. Murphy, April 18, 1990. During the survey, a tract of approximately 13 acres on the north side of Ramp Creek was not investigated due to the presence of buried toxic wastes. Based on available information, it is my opinion that no further archaeological work is needed within the 70 acre project area.

The Newark Earthworks archaeological complex is one of the most important historic properties in Ohio, and research on this complex has demonstrated that remains extended

Mr. Don Kellogg
January 25, 1994
Page 2

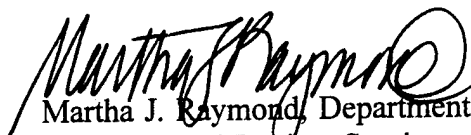
southwest from the core are, which today is in Newark, at least as far as the Newark-Heath Airport and Newark AFB. These remains include a circular earthworks site located on the north side of the runway with associated parallel earthen embankments of what has been interpreted as a road (33-LI-69). It is probable that at one time this road extended in a straight line from the core to the southwest, passing a short distance east of the southeast corner of what today is the Newark AFB. These remains demonstrate the proximity of the project to important archaeological sites. For this reason, changes in the current roadway, runway, or facilities plan could produce adverse effects on historic properties.

It was noted in the Phase I archaeological report that many of the buildings were constructed in the 1950s, however, it is possible that some of these buildings are associated with exceptional significant events requiring further coordination with this office.

It appears that coordination regarding the proposed base closure has been established with OHPO, and we look forward to continued cooperation in the evaluation of and preservation of important historic properties.

Any questions concerning this matter should be addressed to David Snyder at (614) 297-2470, between the hours of 8 am. to 5 pm. Thank you for your cooperation.

Sincerely,


Martha J. Raymond, Department Head
Technical and Review Services

MJR/DMS:ds



United States
Department of
Agriculture

Natural
Resources
Conservation
Service

771 East Main St.
Suite 100
Newark, Ohio 43055-1001

February 21, 1995

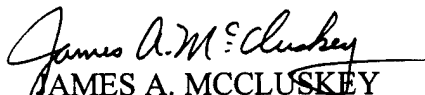
Don Kellogg
HQ AFCEE/ECP
8106 Chennault Road
Brooks AFB, Texas 78235-5318

Dear Mr. Kellogg:

The Farmland Protection Policy Act was amended in 1994. I just received a copy of the Federal Register published June 17, 1994. The change specifies that Part VI will be completed before submitting the form to the Natural Resources Conservation Service for completion of Parts II and IV.

If the points assigned in Part VI are less than 160, then the site would not be considered farmland. I believe this would be true concerning this site. I do not feel this site falls under the FPPA guidelines since it has already been committed to urban uses.

I hope this has been of some help to you. I am returning the AD-1006 for your completion of Part VI. If you have any questions, please call me at 614-349-6920.


JAMES A. MCCLUSKEY
District Conservationist

U.S. Department of Agriculture

FARMLAND CONVERSION IMPACT RATING

PART I (To be completed by Federal Agency)		Date Of Land Evaluation Request	
Name Of Project Disposal and Reuse of Newark AFB		Federal Agency Involved U. S. Air Force	
Proposed Land Use Industrial/Commercial		County And State Licking County, Ohio	
PART II (To be completed by SCS)		Date Request Received By SCS	
Does the site contain prime, unique, statewide or local important farmland? (If no, the FPPA does not apply — do not complete additional parts of this form).		Yes ☐	No ☐
Major Crop(s)	Farmable Land In Govt. Jurisdiction Acres: %	Acres Irrigated	Average Farm Size
Name Of Land Evaluation System Used	Name Of Local Site Assessment System	Amount Of Farmland As Defined in FPPA Acres: %	
		Date Land Evaluation Returned By SCS	
PART III (To be completed by Federal Agency)		Alternative Site Rating	
		Site A	Site B
		Site C	Site D
A. Total Acres To Be Converted Directly		0	0
B. Total Acres To Be Converted Indirectly		0	0
C. Total Acres In Site		70	70
PART IV (To be completed by SCS) Land Evaluation Information			
A. Total Acres Prime And Unique Farmland			
B. Total Acres Statewide And Local Important Farmland			
C. Percentage Of Farmland In County Or Local Govt. Unit To Be Converted			
D. Percentage Of Farmland In Govt. Jurisdiction With Same Or Higher Relative Value			
PART V (To be completed by SCS) Land Evaluation Criterion			
Relative Value Of Farmland To Be Converted (Scale of 0 to 100 Points)			
PART VI (To be completed by Federal Agency)			
Site Assessment Criteria (These criteria are explained in 7 CFR 658.5(b))	Maximum Points		
1. Area In Nonurban Use			
2. Perimeter In Nonurban Use			
3. Percent Of Site Being Farmed			
4. Protection Provided By State And Local Government			
5. Distance From Urban Builtup Area			
6. Distance To Urban Support Services			
7. Size Of Present Farm Unit Compared To Average			
8. Creation Of Nonfarmable Farmland			
9. Availability Of Farm Support Services			
10. On-Farm Investments			
11. Effects Of Conversion On Farm Support Services			
12. Compatibility With Existing Agricultural Use			
TOTAL SITE ASSESSMENT POINTS	160		
PART VII (To be completed by Federal Agency)			
Relative Value Of Farmland (From Part V)	100		
Total Site Assessment (From Part VI above or a local site assessment)	160		
TOTAL POINTS (Total of above 2 lines)	260		
Site Selected:	Date Of Selection	Was A Local Site Assessment Used? Yes ☐ No ☐	
Reason For Selection:			

STEPS IN THE PROCESSING THE FARMLAND AND CONVERSION IMPACT RATING FORM

Step 1 — Federal agencies involved in proposed projects that may convert farmland, as defined in the Farmland Protection Policy Act (FPPA) to nonagricultural uses, will initially complete Parts I and III of the form.

Step 2 — Originator will send copies A, B and C together with maps indicating locations of site(s), to the Soil Conservation Service (SCS) local field office and retain copy D for their files. (Note: SCS has a field office in most counties in the U.S. The field office is usually located in the county seat. A list of field office locations are available from the SCS State Conservationist in each state).

Step 3 — SCS will, within 45 calendar days after receipt of form, make a determination as to whether the site(s) of the proposed project contains prime, unique, statewide or local important farmland.

Step 4 — In cases where farmland covered by the FPPA will be converted by the proposed project, SCS field offices will complete Parts II, IV and V of the form.

Step 5 — SCS will return copy A and B of the form to the Federal agency involved in the project. (Copy C will be retained for SCS records).

Step 6 — The Federal agency involved in the proposed project will complete Parts VI and VII of the form.

Step 7 — The Federal agency involved in the proposed project will make a determination as to whether the proposed conversion is consistent with the FPPA and the agency's internal policies.

INSTRUCTIONS FOR COMPLETING THE FARMLAND CONVERSION IMPACT RATING FORM

Part I: In completing the "County And State" questions list all the local governments that are responsible for local land controls where site(s) are to be evaluated.

Part III: In completing item B (Total Acres To Be Converted Indirectly), include the following:

1. Acres not being directly converted but that would no longer be capable of being farmed after the conversion, because the conversion would restrict access to them.
2. Acres planned to receive services from an infrastructure project as indicated in the project justification (e.g. highways, utilities) that will cause a direct conversion.

Part VI: Do not complete Part VI if a local site assessment is used.

Assign the maximum points for each site assessment criterion as shown in §658.5(b) of CFR. In cases of corridor-type projects such as transportation, powerline and flood control, criteria #5 and #6 will not apply and will be weighed zero, however, criterion #8 will be weighed a maximum of 25 points, and criterion #11 a maximum of 25 points.

Individual Federal agencies at the national level, may assign relative weights among the 12 site assessment criteria other than those shown in the FPPA rule. In all cases where other weights are assigned, relative adjustments must be made to maintain the maximum total weight points at 160.

In rating alternative sites, Federal agencies shall consider each of the criteria and assign points within the limits established in the FPPA rule. Sites most suitable for protection under these criteria will receive the highest total scores, and sites least suitable, the lowest scores.

Part VII: In computing the "Total Site Assessment Points", where a State or local site assessment is used and the total maximum number of points is other than 160, adjust the site assessment points to a base of 160. Example: if the Site Assessment maximum is 200 points; and alternative Site "A" is rated 180 points:

Total points assigned Site A = 180 x 160 = 144 points for Site "A."

Maximum points possible 200



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services
6950-H Americana Parkway
Reynoldsburg, Ohio 43068

IN REPLY REFER TO:

COMM: 614/469-6923 FAX: 614/469-6919
March 9, 1995

Mr. Bruce Leighton, P.E.
Environmental Conservation and Planning Directorate
HQ AFCEE/EC
8106 Chennault Road
Brooks AFB, TX 78235-5318

Dear Mr. Leighton:

This responds to your February 15, 1995, letter requesting our concurrence with your species findings related to Newark Air Force Base (NAFB), Licking County, Ohio. Your species findings relate to the disposal and proposed reuse of NAFB as part of our country's base closure and realignment program(s). Your February 15 letter explained that all four decision alternatives will not result in any land areas being disturbed by construction of facilities, infrastructure improvements, or other operational activities. For this reason, we concur with your findings that no Federally endangered, threatened, proposed, or candidate species will be adversely affected by the disposal and proposed reuse of NAFB.

Please contact endangered species biologist Buddy B. Fazio at this office if we can be of further assistance.

Sincerely,


Kent Kroonemeyer
Supervisor

cc: DOW, Wildlife Environmental Section, Columbus, OH
ODNR, Division of Real Estate and Land Management, Columbus, OH
Ohio Division of Natural Areas and Preserves, Columbus, OH
Ohio EPA, Water Quality Monitoring, Columbus, OH
US EPA, Office of Environmental Review, Chicago, IL